

Appendix-B
(Version 1.1)

Guidelines for Centre Superintendents for Practical Examinations

**(Bye-Laws Governing
Examination & Certification 2012)**



National Institute of Open Schooling

ISO 9001:2008 Certified

(An Autonomous Institution Under MHRD, Govt. of India)

A-24-25, Institutional Area, Sector-62, NOIDA-201309

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CONTENTS

S.NO.	CHAPTER NO.	PAGE NO.
1.	Important Check Points (Summative Examination)	1
2.	Engagement of Staff and Norms for Payment (Summative Examination)	5
3.	Instructions for Practical Examiners (Summative Examination)	8
4.	General Guidelines for Practical Examination (Summative Examination)	9
SECONDARY LEVEL PRACTICAL EXAMINATIONS (FORMATIVE & SUMMATIVE)		
5.	Mathematics	12
6.	Science and Technology	18
7.	Home Science	25
8.	Painting	29
9.	Data Entry Operations	35
SENIOR SECONDARY PRACTICAL EXAMINATION (FORMATIVE & SUMMATIVE)		
10.	Physics	41
11.	Chemistry	47
12.	Biology	55
13.	Geography	60
14.	Home Science	65
15.	Computer Science	70
16.	Painting	74
17.	Environmental Science	79
18.	Mass Communication	83
19.	Data Entry Operations	88
SPECIMEN PROFORMA TO BE USED BY THE CENTRE SUPERINTENDENT (SUMMATIVE)		100
<i>Annexure-1: Attendance Sheet for Practical Examination</i>		
<i>Annexure-2: Format for Booking UFM Cases</i>		
<i>Annexure-3: Forwarding UFM Cases to NIOS</i>		
<i>Annexure-4: Specimen For Absentees Statement</i>		
<i>Annexure-5: Statement of Used and Unused Answer Books</i>		
<i>Annexure-6: Consolidated Record of Despatch of Answer Books</i>		
<i>Annexure-7: Date-wise Subject-wise Consolidated Details of Exam</i>		
PRACTICAL EXAM CENTRE BILL PROFORMA (SUMMATIVE)		107
<i>Proforma-1: Consolidated Bill for Practical Examination</i>		
<i>Proforma-2: Remuneration Bill for Center Suptd. for Practical Exam</i>		
<i>Proforma-3: Bill for Practical Examiners</i>		
<i>Proforma-4: Bill for Other Staff Charges</i>		
<i>Proforma-5: Bill for Laboratory Charges</i>		
<i>Specimen Proforma of Award Sheet</i>		111
LIST OF REGIONAL CENTRES		113

TO BE NOTED BY THE CENTRE SUPERINTENDENTS/COORDINATORS OF AIs

All the Examination Centre Superintendents/ Coordinators of AIs should note that:

- ❖ W.e.f. October 2012, the centre for practical examination shall be the AI where the candidate has been enrolled. The Coordinator of AI must inform the candidates who have been **enrolled** with the AI in this regard.
- ❖ The system of Practical Examinations for the learners taken admission under Stream-I, Block-I i.e. w.e.f. 16th March-2015 (eligible for the 1st examination to be held in March-May 2016) and afterwards Public Examinations has been changed. The Practical Examinations for these learner will consist of two part i.e. formative assessment and summative assessment. 50% of weightage will be awarded for the practical marks formative assessment (for activities conducted in the five practical PCP) and 50% Practical Marks for summative assessment which is to be conducted at the end of the session in the external examinations.
- ❖ The assessment for the rest of the learners (All learners of Stream-II & learners taken admission prior to 16th March 2015) would be taken on summative assessment process and assessed out of 100% Marks allotted for the particular subject for the Practical Examinations. The award slip has therefore to be prepared accordingly and the same will be send to concerned AI/Practical Exam. Centre.
- ❖ A detailed process for conduct of both formative assessment and summative assessment has been brought out in details in the relevant subject available in the Hand Book for Guidelines for Centre Superintendent for Practical Examinations from page no (12) to (100)
- ❖ The Coordinators of AIs shall act as Centre Superintendents for the practical examinations to be conducted at their respective AIs.
- ❖ For each subject of practical examination there shall be two examiners, an internal examiner from the AI and an external examiner to be appointed by the concerned **Regional Director** of NIOS.
- ❖ No candidate shall be allowed to appear in the practical examination in an AI other than the AI where he/she has been **enrolled** unless permitted by the NIOS/Regional Centre concerned. If a candidate changes the practical examination centre without the permission of NIOS/Regional Centre his/her result will be withheld and it will be treated as a case of use of **unfair means**.
- ❖ A copy of the 'Instructions for Examiners' for Practical Examination should be provided to all the Examiners appointed for Practical Examination at the AI. A certificate that no near relative is appearing in the Practical examination from that centre should be taken from all the Examiners.
- ❖ The answer sheets for practical examination shall be supplied by the NIOS. The written work concerned with the practical examination shall be done by the candidates in the answer sheet only.
- ❖ The candidate has to fill in all the columns of Practical Examination Answer Book and no column is to be left blank. The Examiner should be instructed to sign the Answer Book after verifying the roll number and photograph from the Identity card of the candidates issued by the NIOS.
- ❖ The Centre Superintendent must ensure that the candidate has properly recorded the Answer Book No. and signed against his/her name, in attendance sheet. All unfair means cases are processed strictly as per Guidelines. The examiners and the Centre Superintendents/ Coordinators of the AIs must complete and sign the UFM proforma even if the candidate is caught by OSD/Flying Squad.
- ❖ No Candidate who is late by more than 30 minutes should be allowed to appear at examination.
- ❖ No candidate is allowed to leave the examination hall or take away the question paper before the expiry of half of the time allotted to any particular Practical examination.
- ❖ If a candidate does not have Intimation Letter, he/she may be allowed to appear in the examination on production of identity card provided his/her name appears in the list of candidates attendance sheet made available online by NIOS.
- ❖ The Centre Superintendent should maintain a complete account of the Answer Books supplied by the NIOS for practical examination. The bill of centre supdt. will be cleared only after he/she renders a complete account of answer books and returns the unused answer books to concerned Regional Centre.
- ❖ For the conduct of practical examinations, the NIOS fixes dates in the date sheet along with theory papers. All the practical examinations should be completed as per the date sheet of practical examinations. The marks obtained by the candidates in practical examinations should be filled in the computerized award lists available online and send to the Regional Director concerned duly verified & signed by both Examiners (Internal & External) /Centre Superintendents of the NIOS immediately after the practical examinations are over.
- ❖ Laxity of any type observed in the conduct of practical examination shall be viewed seriously.



IMPORTANT CHECK POINTS

(SUMMATIVE EXAMINATION)

The National Institute of Open Schooling conducts two full-fledged examinations every year. Conduct of Examination is a very important activity in which all constituents of the NIOS contribute whether they are at the Headquarter, Regional Centres or at the Accredited Institutions. The Centre Superintendent/Dy. Superintendents take all precautions to ensure smooth and fair conduct of examination at their Examination Centre. However, there is need to check all the details before the commencement of Examination. For the sake of uniformity, the NIOS has laid down detailed Guidelines for Centre Superintendents for Practical Examinations. Before moving on to various aspects of the conduct of practical examination, here are some important instructions/points, which may strictly be adhered to. **All persons concerned with practical examinations should read carefully the Guidelines for Centre Superintendents for the commencement of examination.**

1.1 BEFORE THE EXAMINATION

1.1.1 Ensure that effective arrangements for the practical examination have been made.

- i. The laboratories for the conduct of the practical examination should be ready.
- ii. Apparatuses, instruments, chemicals etc. required for the practical examination are available and the apparatuses are operational.
- iii. The question papers for practical examinations have been developed taking into consideration the number of candidates appearing.

1.1.2 Facilities for the candidates

- i. Display date-sheets, group of the candidates and Instructions for the Candidates on the notice board.
- ii. Make suitable arrangement for white/ruled papers and stencils in advance for Typewriting paper for the purpose of Practicals. Guidelines for the Practical Examiners may please be seen for details.

1.1.3 Instructions to Lab Assistants/Lab Attendants

- i. Ensure that the Lab Assistant/Lab Attendant is available for the Practical Examination. Necessary instructions should be given to the Lab Assistant/Lab Attendant for the smooth conduct of the practical examination.

1.1.4 Eligibility of the candidates to appear in Examination

- i. Only those candidates, whose names appear in the list of candidates made available online on Examination Centre panel on NIOS website or those who have been given written permission National Institute of Open Schooling Headquarters, be allowed to appear for practical examinations at your AI. Please do not allow other ineligible candidates to appear in the practical examinations.
- ii. If some candidates approach the allotted Examination Centre with Intimation Card of the current examination showing eligible subjects and dates, they may be allowed even if their names are omitted from the list of candidates due to some error after verifying their Identity Cards on provisional basis and after obtaining an undertaking subject to their being eligible otherwise.

1.2 DURING THE PRACTICAL EXAMINATION

1.2.1 Checking the Candidates before Entry in the Laboratories

- i. Frisking of the candidates may be done thoroughly at the entrance gate itself before they are allowed to enter the Lab.
- ii. Do not permit the candidates to bring books, papers or reference material of any kind in connection with the examination in the Lab.
- iii. Ensure that no candidate brings any electronic gadgets like Calculators, Tape Recorders, Cellular Phones, Pager etc. in the Lab. Wrist watches with additional provisions other than time should also not be allowed.
- iv. However, the candidates are permitted to bring with them the requisite material as allowed by the concerned practical examiners.

1.2.2 Handling Attendance Sheet

- i. On the opening day examination the Centre Superintendent may download and print subject wise attendance sheet.
- ii. Ensure that Attendance Sheets are correctly filled in and signed by the candidates.
- iii. Encircle the Roll Numbers of absent candidates in Red Ink and mark them ABSENT in place of their signatures in Attendance Sheets.
- iv. Mark 'UFM' in case of candidates who have been booked under use of unfair means.
- v. Ensure that the Attendance Sheets bear the signatures with rubber stamp of the Centre Superintendent and OSD (Observer) deputed by the RC (NIOS) Examiners before these are sent to the concerned Regional Centres.
- vi. Add the names of additional/authorised candidates such as centre change cases (permitted by NIOS Headquarters) on the computerized attendance sheet for obtaining their signatures.

1.2.3 Handling the Answer Books for Practical examination

- i. Please affix the facsimile stamp of the signature of the Centre Superintendent on Answer Books before the same are distributed to the candidates.
- ii. Maintain a proper account of all the used and unused Answer Books for practical examination and send a copy of the same duly verified by the Centre Supdt./OSD (Observer) of NIOS along with the Attendance Sheets and sealed answer books to the R.C. One copy may be retained by the Centre Supdt. in his records which would be open for Inspection and for physical verification of unused answer books by OSDs, Observers or Flying Squad Members or any other persons deputed by the NIOS.
- iii. Additional answer book shall not be provided.

1.2.4 Handling Unfair Means Cases

- ◆ Please ensure that the unfair means cases detected during the course of practical examination are properly recorded and packed in a separate envelope and sent to the concerned Regional Centre with requisite statements and documents as per procedure laid down. Please send this packet along with the packet containing the Answer Books for the day of practical examination.
- ◆ A candidate found guilty of any of the following offences shall be deemed to have used unfair means and his/her examination result shall be withheld:
 - (i) Writing name, roll number or putting signature or any other mark in the answer book which may disclose, in any way, the identity of the candidate. Name and/or roll No. is to be written only in the space provided for it and nowhere else.
 - (ii) Appearing in the Practical Exam. at an AI other than his/her own AI(study centre) without the permission of NIOS.
 - (iii) Having in possession of book(s), notes, papers or any other material other than that allowed for the practical examination.
 - (iv) Receiving or giving assistance in any form during the course of the practical examination.
 - (v) Smuggling in or out of the Lab of the question paper, answer books etc. and tearing leaf/leaves from the question papers or answer books or tampering with the practical answers book in any way.
 - (vi) Using abusive/derogatory language orally or in the practical answer book against the Centre Supdt./Examiner/Lab Assistant or threatening/using violence towards any of them.
 - (vii) Impersonation i.e. sending some other person to appear at practical examination.

- (viii) Communicating with the examiner or any other person connected with the practical examination, with the object of unduly influencing him/her in any way.
- (ix) Any other type of misconduct or a deliberate previous arrangement to cheat in the practical examination.
- (x) Writing questions or answers on any paper other than the answer book.
- (xi) Wrong statement in the application for admission such as tempering with the certificate/statement of marks etc. or forging a signature.

The decision of the UFM Committee in imposing penalty for the offence committed by him/her shall be final and binding on him/her.

1.3 DISPATCH OF ANSWER BOOKS

- i. The Answer Scripts/Attendance Sheets/Award Lists and other related material pertaining to Practical Examinations will be dispatched to the concerned Regional Centre or to specified places as per the details given in **Chapter 4**.

2

ENGAGEMENT OF STAFF AND NORMS FOR PAYMENT (SUMMATIVE EXAMINATION)

In order to conduct the NIOS practical examination, NIOS allows the Centre Superintendent to engage the staff from his/her AI or other nearby institutions as per following norms.

2.1 NORMS FOR ENGAGING STAFF ON DUTY

- 2.1.1 Centre Superintendent:** The Coordinator of the AI shall perform the duties of Centre Superintendent for the conduct of Practical Examination.
- 2.1.2 Practical Examiner:** - There should be two practical examiners for every subject of practical examination. One internal examiner and one external examiner. The internal examiner should be from the staff of AI. For Secondary subject practical examination, the examiner must be a T.G.T in the concerned subject with atleast three years of teaching experience in a school (affiliated to CBSE or to a State Board). Similarly, for Sr. Secondary practical examination, the examiner must be a P.G.T of the Subject concerned with a teaching experience of minimum 3 years in a school (affiliated to CBSE or to a State Board Examination).
- 2.1.3 Laboratory Assistant:** - There is no need of Lab. Assistant in the practical examination of Geography, Typewriting, Secretarial Practice, Word Processing and Stenography. In all the other subjects one Lab. Assistant may be provided except in Science practicals (Secondary Examinations) where two Lab. Assistants may have to be provided in case separate Labs. are used.
- 2.1.4 Peons/Waterman:** - There will be one peon and one waterman upto 249 candidates allotted. Additional peon and waterman (One each) may be engaged for specific days on which the number of students registered for practical examination exceeds 249.
- 2.1.5 Chowkidar/Sweeper:** - There will be one Chowkidar and one Sweeper in the Centre on each day of practicals irrespective of number of candidates allotted.

2.2 PAYMENT NORMS TO THE STAFF

2.2.1 Remuneration for the Staff

- | | |
|--|---|
| (i) Centre Superintendent | Rs. 600/- per day |
| (ii) Practical Examiners for Secondary Level | Rs. 15.00 per candidate
(minimum of Rs. 300/- per session) |

(iii) Practical Examiners for Sr. Secondary Level	Rs. 16/- per candidate (minimum of Rs. 300/- per session)
(iv) Remuneration to Practical Examiners for Secondary and Sr. Secondary Level Vocational Courses & Word Processing and Data Entry Operations	Rs. 16/- per candidate (minimum of Rs. 300/- per session)
(v) Clerk/Laboratory Assistant	Rs. 225/- per day
(vi) Peon	Rs. 150/- -do-
(vii) Waterman	Rs. 150/- -do-
(viii) Chowkidar	Rs. 150/- -do-
(ix) Sweeper	Rs. 150/- -do-

2.2.2 Lab Charges for Practical Examinations

(A) For Secondary Level

- | | |
|---|------------------------|
| i. Science, Home Science & other academic subjects having practical | Rs. 20/- per candidate |
| ii. Word Processing, Data Entry Operations, Painting & Vocational Courses | Rs. 30/- per candidate |

(B) For Sr. Secondary Level

- | | |
|--|------------------------|
| i. Physics, Geog, Secretarial Practice, Stenography, Mass Communication Environmental Science and other academic subjects having practical | Rs. 15/- per candidate |
| ii. Chemistry & Home Science | Rs. 20/- per candidate |
| iii. Biology | Rs. 35/- per candidate |
| iv. Word Processing, Data Entry Operations & Painting | Rs. 30/- per candidate |

(C) Vocational Courses

- | | |
|---|------------------------|
| i. Computer Science, Word Processing & other Vocational courses | Rs. 30/- per candidate |
| ii. Typing (Secondary and Sr. Secondary) | Rs. 20/- per candidate |
| iii. Stenography (Sr. Sec.) | Rs. 15/- per candidate |

(D) Remuneration and Conveyance for practical external examination

- i Remuneration - Rs. 450/- per session
(Maximum two sessions in a day)
- ii Conveyance - Maximum Rs. 300/- local conveyance in a day and actual TA/DA for out station examiner as per NIOS norms

2.2.3 Postage Charges: *Actual postage charges* are payable subject to production of receipts.

2.2.4 Packing Cloth: *Actual cost of packing cloth* to centres located outside Delhi/townships of respective Regional Centres will be paid on production of cash memo. Delhi Centres and Centres located at the township of Regional Centres will be issued safety bags for despatch of answer books by NIOS/RC on loan basis. They will be required to deposit the same with the NIOS/RC on the last day of Examination.

2.3 GUIDELINES FOR PAYMENTS

2.3.1 Immediately after the practical examinations are over the Centre Superintendents are required to submit complete account of used and unused practical answer books and then send their consolidated claim in the prescribed proformas to the concerned Regional Director.

2.3.2 Proforma should be filled up neatly and clearly and cutting, erasing and over writings should be avoided.

2.3.3 Details of each activity may be written over the back of the Proforma wherever required.

2.3.4 It should be clearly mentioned in the forwarding letter, in whose name the cheque for the amount claimed is to be prepared and sent, by intimating the complete address.

2.3.5 Following **details should be enclosed with the application:**

- i. Duly filled up proforma and signed by the Centre Superintendent mentioning the name of the centre with office seal for claim of the exam centre payment.
- ii. All the enclosures/ proformas must be duly signed by the Centre Supdt.
- iii. A proper account of practical answer books used daily during practical examination on the prescribed proforma.

3

INSTRUCTIONS FOR PRACTICAL EXAMINERS (SUMMATIVE EXAMINATION)

3.1 TO BE NOTED BY EACH PRACTICAL EXAMINER

- 3.1.1 **Each Examiner is required to give a Certificate to the Centre Superintendent/Coordinator of the AI to the effect that none of his/her relative/student is appearing** in the Examination at the Centre and that none of the candidates appearing at the Centre has received private coaching from him/her.
- 3.1.2 **Both Examiners are under the control of Centre Superintendent/Coordinator of the AI** during the period they are on such duty. They should not leave the examination centre without the permission of the Centre Supdt.
- 3.1.3 **They should report at the centre at least 35 minutes before the time** fixed for the commencement of practical examination.
- 3.1.4 **No candidate suffering from any infectious disease like small-pox, mumps be allowed** to appear in the practical with other candidates. If such case is suspected, it should be reported to the Centre Supdt./ Coordinator of the AI immediately.
- 3.1.5 **Practical Examiners should note that under no circumstances he/she should help the candidate for using unfair means** and if such a case is found, strict action will be taken against the practical examiners which may debar him/her from any kind of payment/further duties at NIOS examinations, besides the disciplinary or penal action. The cases of Unfair means should be reported to Centre Superintendent immediately for further necessary action.



GENERAL GUIDELINES FOR PRACTICAL EXAMINATION

(SUMMATIVE EXAMINATION)

4.1 DATES FOR PRACTICAL EXAMINATION

- i. The practical examination will be conducted in the same AI with which the learner is enrolled are as indicated in the practical hall ticket on the days and dates as decided by the NIOS in the date sheet.
- ii. Enrollment number wise details of batches for the practical examination in respect of each subject should be displayed on Notice Board of the AI immediately on receiving the information about the same from the NIOS. The display of schedule of batches of practical examination should be on the main gate of the school prominently.
- iii. Please stick to the schedule so fixed for practical examination to help NIOS declare the results in time. Delay in receiving the practical awards may result in non-declaration of the results of such candidates along with the results of all the other candidates.
- iv. The Coordinators of AIs are advised to visit on the NIOS Website www.nios.ac.in for the schedule of Practical Examination

4.2 APPOINTMENT OF PRACTICAL EXAMINERS

- i. The Practical Examinations in each subject will be conducted by two examiners an internal Examiner available with the institution and an external examiner. The external examiner will be appointed by the NIOS.
- ii. Internal Examiner will be appointed by the Centre Supdt./ Coordinator of the AI under intimation to the concerned Regional Director. The Practical examiners may be requested to go through these guidelines carefully.
- iii. Examiners will be paid remunerations as per the rates given in the guidelines. In addition to the remunerations External Examiners will also be paid conveyance charges for the conduct of Practical Examination as per his/her entitlement.

4.3 SUBJECT-WISE MAXIMUM MARKS FOR PRACTICAL EXAMINATION

- i. The maximum marks for practicals in all the subjects of Senior Secondary level (except Painting, Word Processing and Data Operations and Computer Science) are 20.
- ii. The maximum marks in Painting are 70. In Word Processing and Data Operation, the maximum marks are 60. In Computer Science, the maximum marks are 40.
- iii. In the case of Secondary Examination, the Practical Marks are **15 except Painting, Word Processing & Data Entry Operations**. In Painting, the maximum marks are 70 and in Word Processing and Data Entry Operations, the maximum marks are 60.

4.4 ATTENDANCE OF THE CANDIDATES

- i. The Attendance of the candidates appearing in practical examination must be taken. The attendance sheet and Award Lists of each practical examination is available online. A copy of attendance sheet and Award List be retained by Centre Superintendent for their records.
- ii. However, the answer scripts of practical examination may be sent separately by hand/Regd. Insured Post to the Regional Director concerned

4.5 CONDUCT OF PRACTICAL EXAMINATION

- i. The practical examinations will be taken in batches-maximum 3 batches a day as per the following schedule:

1 st batch	-	9.00 a.m.
2 nd batch	-	12.00 noon
3 rd batch	-	2.30 p.m.
- ii. No. of students in a batch will vary from batch to batch according to the capacity of the Laboratory and the total no. of students to be examined on the scheduled dates.
- iii. Even if there are more than 2 sessions a day, the payments to the Lab. Asstt., Peon, Waterman, Chowkidar and Sweeper will be restricted to 2 sessions a day.

iv. ONLINE PROCEDURE

A panel (with AI user name and password) will be made available to practical exam. centre and also to parent AI.

PRACTICAL EXAM. CENTRE in its panel shall online record the marks obtained by learner during the days of Practical (Summative part) exam.

Parent AI (for merged centres) can record the marks of formative Assessment in this panel.

- v. **PRINTING OF AWARD LIST:** The practical exam. centre after filling/recording marks online; shall freeze marks and print the Award List. Then the signature of Internal and External examiner shall be made and countersigned by Centre Superintendent.

4.6 PRACTICAL AWARD LISTS-PREPARATION & SUBMISSION

- i. The total marks obtained by each candidate in practical examination should be entered carefully in the computerized awards lists sent by the NIOS for each practical subject.
- ii. The absentee must be filled/recorded clearly “AB’ in the on-line award list. All the award lists and attendance sheet must be signed by the practical Examiners and countersigned by the Centre Supdt. and Observer appointed for the purpose on each day.
- iii. **The Examiners will submit the awards to the Centre Supdt./ Coordinator of the practical examination centre for uploading the Awards online and sending to concerned Regional Centre.** The Examiner/Centre Supdt. will also ensure that the printed awards along with the practical answer books are sent to the concerned Regional Centre on the same day.
- iv. The Practical Award Lists along with attendance sheets are to be dispatched to the concerned Regional Director by Speed Post immediately after each practical examination. **However, care may be taken that answer books of practical examination may be dispatched separately by Registered Insured Post to the Regional Director concerned. A copy of Award List and Attendance Sheet be retained by Centre Superintendent for records.**

4.7 PRACTICAL EXAMINATION FOR VOCATIONAL SUBJECTS

The Practical examination for each Vocational subject under academic stream will be conducted at the respective study centre (AVI). The candidates may approach their Study Centre for details of Practical Examination Centre.

4.8 RATES FOR CONDUCTING THE PRACTICAL EXAMINATIONS

- i. The rates for conducting the practical examinations are given in **Chapter-3** of these Guidelines.

Note: A candidate of the Secondary Course of NIOS re-appearing in Science and Home Science Examinations has to appear in practical (as well as theory) again, else he/she will be treated as absent. Part-Credit obtained in theory/practical is not retained in the Secondary Course.



Secondary Level MATHEMATICS (211) Practical Examination

1. Objectives:

Mathematics is considered as a base of human civilisation and Practical is an inseparable part of Mathematics Curriculum at School level. Participation in Mathematics practical leads to problem solving skills, reduced fear of Mathematics and raised interest in learning Mathematics among the learners. The main objective of doing practical in Mathematics is to develop Mathematical skills among the learners so that they understand the mathematical tools such as Models, Scales, Graphs, and techniques like- Paper folding, Paper cutting and verification.

The purpose of introducing Formative and Summative assessments in Practical PCP is to ensure learners' involvement and active participation in PCP classes as well as continuous assessment which leads to learning.

2. Implementation:

There are 30 activities listed in the Practical Manual of Secondary Course in Mathematics (211). These activities are to be conducted in 5 PCPs as given below. These will be assessed through Formative (Continuous) assessment at the Study Centre. The Sixth PCP is reserved for final examination that will be assessed through summative (Final) assessment at the Study Centre. The dates for the practical examination (Final) will be notified by NIOS in the examination date sheet. 50% weightage is for each of Formative (Continuous) and Summative (Final) assessments. The maximum mark for Practical in Mathematics is 15. The *distribution of activities in 05 PCPs* is as follows:

First PCP Practical:

- (i) Orientation of the learners about distribution of activities to be performed and allocation of Marks for both the Formative (Continuous) and Summative (Final) assessments.
- (ii) Orientation of learners about different algebraic identities, equivalent fractions and concept of linear equations
- (iii) Learners have to choose **any two activities** to be performed from Algebra part (S. No. 1 to 4 and 28 of the Practical Manual) as:

- ◆ Verification of the identity $(a+b)^2 = a^2+2ab+b^2$
- ◆ Verification of the identity $(a-b)^2 = a^2-2ab+b^2$
- ◆ Verification of the identity $a^2-b^2 = (a+b)(a-b)$
- ◆ Verification of the identity $(a+b)^3 = a^3+3a^2+3ab^2+b^3$
- ◆ Verify the identity $a^3-b^3 = (a-b)(a^2+ab+b^2)$

Second PCP Practical:

- i. Orientation of learners about Fractions and concept of Linear and Quadratic equations.
- ii. Learners have to choose **any two activities** to be performed from Algebra part (S. No. 5 to 9 of Practical Manual) as:
 - ◆ To find H.C.F of two given numbers by division method
 - ◆ Demonstration of the concept of Equivalent Fractions
 - ◆ To verify that a linear equation in two variables has infinite number of solutions
 - ◆ To find the condition for consistency of a system of linear equations in two variables
 - ◆ To verify the relation between roots and coefficients of a quadratic equation

Third PCP Practical:

- i. Orientation of learners about Polynomial and Arithmetic Progressions (A.P)
- ii. Learners have to choose **any two activities** to be performed from Algebra part (S.No. 10 to 14 of Practical Manual) as:
 - ◆ To verify graphically that a quadratic polynomial can have at most two zeroes
 - ◆ To verify that a given sequence is an A.P.
 - ◆ To find the sum of first n odd natural numbers
 - ◆ To find the sum of first n natural numbers
 - ◆ To find the sum of first n terms of an Arithmetic Progression

Fourth PCP Practical:

- i. Orientation of learners about concept and properties of a triangle, Cyclic Quadrilateral and Circle.
- ii. Learners have to choose **any two activities** to be performed from Geometry part (S.No. 15 to 21 of Practical Manual) as:
 - ❖ To verify that the sum of the angles of a triangle is 180°
 - ❖ To verify that the angles opposite to equal sides of a triangle are equal
 - ❖ To verify the Mid-Point theorem
 - ❖ To verify basic proportionality theorem
 - ❖ To verify Pythagoras theorem
 - ❖ To verify the relation between the ratio of areas of two similar triangles and their sides

- ❖ To find the area of a circle
- ❖ To demonstrate that the opposite angles of a cyclic quadrilateral are supplementary
- ❖ To verify that equal chords of congruent circles subtend equal angles at the centre

Fifth PCP Practical:

- i. Orientation of learners about concept of Cube, Cuboid, Cylinder, Cone, Parallelogram and Trapezium
- ii. Learners have to choose **any two activities** to be performed from Mensuration part (S.No. 24 to 27 and 29-30 of Practical Manual) as:
 - To find the area of a trapezium
 - To find the total surface area of a cube
 - To find the formula for the curved surface area of a cone
 - To find the relationship among the volumes of a right circular cylinder, right circular cone and a hemisphere of same radius and same heights
 - To draw a triangle equal in area to a parallelogram
 - To find the in centre of different types of triangles

3. Scheme of Practical Examination:

The following scheme of practical examinations to be followed is as per the details given below:

- ◆ The conduct of practical examinations is mainly linked with practical PCP. There are 06 practical sessions which are compulsory.
- ◆ The initial five (05) PCP practicals have to be assessed through Formative (Continuous) Assessment and will be utilized for learning.
- ◆ The final (6th PCP) practicals will be utilized for Summative (Final) Assessment for practical examination.
- ◆ A weightage of 50% of the marks will be awarded for Formative (05 practical classes) Assessment and 50% marks for the 6th practical classes for Summative Assessment.

I. Marks Distribution in Formative Assessment (05 PCP Sessions):

S. No.	Criteria for Assessment	Marks	<u>Remarks</u>
1.	Regular Participation in 05 PCP Classes	1½	The five boxes under formative assessment in the award list will be filled up based on these 05 criteria.
2.	Activities Performed in 05 PCP Classes	1½	
3.	Practical Record maintained in 05 PCP Classes	1½	
4.	Use of practical instruments/equipments	1½	
5.	Participation with Peer-Group and Tutor	1½	
Total		7½	

II. Marks Distribution in Summative Assessment (6th Final PCP Class):

S. No.	Criteria for Assessment	Marks	<u>Remarks</u>
1.	Assessment of activity performed (Two activities out of given three activities)	2 x 2½ = 5	Time of 2½ hours will be allowed for final examination.
2.	Viva-Voce based on the activities	2½	
Total		7½	

Note: The total (Formative and Summative Assessment) weightage is 15 marks. In award list the marks obtained by the learner, both in Formative and Summative Assessment are to be mentioned clearly and the final figure is the sum of the marks of Formative and Summative assessment.

4. Preparations for PCP Practical Sessions:

- i. The Centre Superintendent and Tutor must read the instructions mentioned in the Guidelines for practical PCPs.
- ii. Check and arrange the materials, tools, equipments, etc. that will be needed in the Practical PCP sessions in advance.
- iii. Learners are informed about the schedule of Practical PCP sessions. Practicals may be arranged in groups of learners.
- iv. The attendance sheet must be properly maintained in each Practical PCP class.
- v. The award list must be filled up, as per the given assessment criteria.
- vi. The techniques of group work may be followed in Practical PCP sessions.
- vii. Learner shall be asked to bring the practical record books in each class. Each learner is expected to maintain it as per the instructions given in the practical manual.

5. Precautions (DO's and DONT's)

Discuss the following points with learners, regarding preparing the practical record book:

- (i) Throughout the practical note book, the learner should follow the same style. Ask them to use a good fountain pen and a sharp black pencil. It is recommended that the right hand page should be written in blue ink and the left hand page with a black pencil.

The recommended style of writing is shown below:

Left hand page	Right hand page
Scale, Projections, Calculations	Title of the exercise, Date
Graph, Diagram and Figures,	Exercise No. Interpretation and conclusion

- (ii) Each experiment should start from a new page.
- (iii) A neat and proportionate Scale, Projections, Graph and Diagrams should be used.
- (iv) Mistakes should be crossed out with a single line so that it can still be read, the correct statement rewritten in its place.
- (v) No page should be torn off from the practical record book.
- (vi) Before going to take the Practical Examination, get all the exercises of Practical Record Book signed by your tutors.

6. List of Activities:

There are 30 activities in the Mathematics Practical Manual. These 30 activities are distributed under three sections as:

6.1 Section-A (Algebra)

1. Verification of the Identify $(a+b)^2 = a^2+2ab+b^2$
2. Verification of the identify $(a-b)^2 = a^2-2ab+b^2$
3. Verification of the identify $a^2-b^2 = (a+b) (a-b)$
4. Verification of the identify $(a+b)^3 = a^3+3a^2+3ab^2+b^3$
5. To verify the identify $a^3-b^3 = (a-b) (a^2+ab+b^2)$
6. To find H.C.F of two given numbers by division method.
7. Demonstration of the concept of Equivalent Fractions.
8. To verify that a linear equation in two variables has infinite number of solutions.
9. To find the condition for consistency of a system of linear equations in two variables.
10. To verify the relation between roots and coefficients of a quadratic equation.

11. To verify graphically that a quadratic polynomial can have at most two zeroes.
12. To verify that a given sequence is an A.P.
13. To find the sum of first n odd natural numbers.
14. To find the sum of first n natural numbers.
15. To find the sum of first n terms of an Arithmetic Progression.

6.2 Section-B (Geometry)

1. To verify that the sum of the angles of a triangle is 180°
2. To verify that the angles opposite to equal sides of a triangle are equal.
3. To verify the midpoint theorem.
4. To verify basic proportionality theorem.
5. To verify Pythagoras theorem.
6. To verify the relation between the ratio of areas of two similar triangles and their sides
7. To find the area of a circle.
8. To demonstrate that the opposite angles of a cyclic quadrilateral are supplementary.
9. To verify that equal chords of congruent circles subtend equal angles at the centre.

6.3 Section- C (Mensuration)

1. To find the area of a trapezium.
2. To find the total surface area of a cube.
3. To find the formula for the curved surface area of a cone.
4. To find the relationship among the volumes of a right circular cylinder, right circular cone and a hemisphere of same radius and same heights.
5. To draw a triangle equal in area to a parallelogram.
6. To find the in centre of different types of triangles.

Note: Material for practical examination will be provided by the centre superintendent at the practical examination centre, as per requirement of the activities.



Secondary Level
SCIENCE AND TECHNOLOGY (212)
Practical Examination

1. Objectives:

Science and Technology is a subject which can be learnt better by doing. The experiments inside or outside the laboratory give the learner an opportunity to understand the laws and principles of science. In fact, the experiments form an integral part of science learning. These help in developing a scientific attitude and certain well-defined skills. While doing the experiments in a science laboratory, you will get a chance to handle scientific equipment and apparatus, chemicals, etc. The learner will have to plan their work, make observations and draw conclusions. This process will help in developing a scientific attitude, the habit of systematic work and logical thinking. The purpose of introducing Formative and Summative Assessments in Practical PCP is to ensure learners' involvement and active participation in PCP classes as well as continuous assessment which leads to learning.

2. Implementation:

There are 30 activities listed in the Practical Manual of Secondary Course in Science and Technology (212). These activities are to be conducted in 5 PCP sessions as given below, at the study centre. These will be assessed through Formative (Continuous) Assessment. The Sixth PCP is reserved for the final examination that will be assessed through Summative (Final) Assessment at the Study Centre. The dates for the practical examination (Final) will be notified by NIOS in the examination date sheet. 50% weightage is for each of Formative (Continuous) and Summative (Final) Assessments. The maximum mark for Practical in Science and Technology is 15. The *distribution of* activities in 05 PCPs is as follows:

First PCP Practical:

- i. Orientation of the learners about distribution of activities to be performed and allocation of Marks for both the Formative (Continuous) and Summative (Final) Assessment
- ii. Orientation of learners about the handling of scientific equipment and apparatus, chemicals, etc.
- iii. Learners have to choose **any two activities** to be performed from following experiments (S. No. 1, 12 and 21 of Practical Manual) as:

- Separation of Mixtures
- To determine the Density of the Material of a given Solid using a Spring Balance and a Measuring Cylinder
- To Prepare a Temporary Stained Mount of (i) Onion Peel: observe under the Microscope and Record Observations

Or

- To Prepare a Temporary Stained Mount of Human Cheek Cells: observe under the Microscope and Record Observations

Second PCP Practical:

- Orientation of learners about Mounting of slides and Scientific principles
- Learners have to choose **any two activities** to be performed out of the following activities. (S. No. 3, 13 to 22 of Practical Manual) as:
 - To Differentiate between a Chemical and a Physical Change in a given process
 - To Observe and Compare the Pressure Exerted by a Solid Iron Cuboid placed on Fine Sand/Wheat Flour while resting on its three different Faces and calculate the Pressure Exerted in the three different cases
 - To Study and Draw Different Types of Plant and Animal Tissues with the help of Permanent Slides : Plant tissues: Parenchyma and Sclerenchyma; Animal tissues: Blood, Striped muscle fibres and Nerve cells

Third PCP Practical:

- Orientation of learners about the interpretation of the data and conclusions of experiments
- Learners have to choose **any two activities** to be performed. (S. No. 4, 5, 14, 15, 16, and 23, 24 of Practical Manual) as:
 - To Test the Presence of Water Vapours in Air
 - To Test the Presence of Carbon Dioxide (CO₂) in Air
 - To find out the Approximate Percentage of Oxygen in Air
 - To Verify the Third Law of Motion using Two Spring Balances
 - To Determine the Melting Point of Ice
 - To Study the Process of Osmosis through a Semi-permeable Membrane
 - To Test the Presence of Starch in Green Leaves exposed to Sunlight

Fourth PCP Practical:

- i. Orientation of learners about the concept of laws of Motion, photosynthesis and Respiration
- ii. Learners have to choose **any two activities** to be performed from the following experiments (S. No. 17, 7 and 26, 27 of Practical Manual) as:
 - To Verify the Third Law of Motion using Two Spring Balances
 - To Study the Change in the Size and Position of Image formed by a Convex Lens by hanging an Object (Candle)Placed in front of it
 - To Observe that Oxygen is released during the Process of Photosynthesis
 - To Show that CO₂ is given out during Respiration
 - To Test the Presence of Starch and Fat in given Food Samples

Fifth PCP Practical:

- iii. Orientation of learners about the concept of Chemical reaction, Chemical equations, estimation of the levels of Pollution and Food Chains and their Trophic levels.
- iv. Learners have to choose **any two activities** to be performed from the given experiments.(S. No. 8, 20 and 27to 30 of Practical Manual) as:
 - ❖ To Carry out Chemical Reactions of Different Types
 - ❖ To Study the Change in Current through a Resistor by Changing Potential Difference across it. Determine the Resistance of the Resistor by Plotting a Graph between Potential Difference and Current
 - ❖ To Estimate the Level of Pollution in Terms of Particulate Matter by Comparing Leaf Samples Collected from Different Areas
 - ❖ To Observe Organisms from Given Pictures or Specimens or in the Surroundings (e.g. Crop Field, a Garden, or A Nearby Pond). Classify them as Producers and Consumers, and Construct their Food Chains and Indicate their Trophic Levels
 - ❖ To Study External Structural Adaptations in any Two Organisms out of Cockroach, Fish, Frog, Lizard and Pigeon

3. Scheme of Practical Examination:

The following scheme of practical examinations to be followed is as per the details given below:

- ◆ The conduct of practical examinations is mainly linked with practical PCP. There are 06 practical sessions which are compulsory.
- ◆ The initial five (05) PCP practicals have to be assessed through Formative (Continuous) Assessment and will be utilized for learning.

- ◆ The final (6th PCP) practical will be for Summative (Final) Assessment for practical examination.
- ◆ A weightage of 50% of the marks will be awarded for Formative (05 practical classes) Assessment and 50% marks for the 6th practical classes for Summative Assessment.

III. Marks Distribution in Formative Assessment (05 PCP Sessions):

S. No.	Criteria for Assessment	Marks	Remarks
1.	Regular Participation in 05 PCP Classes	1½	The five boxes under formative assessment in the award list will be filled up based on these 05 criteria.
2.	Activities Performed in 05 PCP Classes	1½	
3.	Practical Record maintained in 05 PCP Classes	1½	
4.	Use of practical instruments/ equipments	1½	
5.	Participation with Peer-Group and Tutor	1½	
Total		7½	

IV. Marks Distribution in Summative Assessment (6th Final PCP Class):

S. No.	Criteria for Assessment	Marks	<u>Remarks</u>
1.	Assessment of activity performed (Two activities out of given three activities)	2 x 2½ = 5	Time of 2½ hours will be allowed for the final examination.
2.	Viva-Voce based on the activities	2½	
Total		7½	

Note: The total (Formative and Summative Assessments) weightage is 15 marks. In award list, the marks obtained by the learner, both in Formative and Summative Assessments are to be mentioned clearly and the final figure is the sum of the marks of Formative and Summative Assessments.

4. Preparations for PCP Practical Sessions:

- (i) The Centre Superintendent and Tutor must read the instructions mentioned in the Guidelines for practical PCPs.
- (ii) Check and arrange the materials, tools, equipments etc. that will be needed in the Practical PCP sessions in advance.
- (iii) Learners are informed about the schedule of Practical PCP sessions. Practicals may be arranged in groups of learners.
- (iv) The attendance sheet must be properly maintained in each Practical PCP class.

- (v) The award list must be filled up, as per the given assessment criteria.
- (vi) The techniques of group work may be followed in Practical PCP sessions.
- (vii) Learners shall be asked to bring the practical record book in each class. Each learner is expected to maintain it, as per the instructions given in the practical manual.

5. Precautions (DOs and DON'Ts)

Discuss the following points with learners regarding preparing the practical record book:

- (i) Throughout the practical note book, the learner should follow the same style. Ask them to use a good fountain pen and a sharp black pencil. It is recommended that the right hand page should be written in blue ink and the left hand page with a black pencil.

The recommended style of writing is shown below:

Left hand page	Right hand page
Scale, Projections, Calculations. Graph, Diagram, Figures	Title of the exercise, Date, Exercise No, Interpretation and conclusion

- (ii) Each experiment should start from a new page.
- (iii) A neat and proportionate Scale, Projections, Graphs and Diagrams should be used.
- (iv) Mistakes should be crossed out with a single line so that it can still be read, the correct statement rewritten in its place.
- (v) No page should be torn-off from the practical record book.
- (vi) Before going to take Practical Examination, get all the exercises of Practical Record Book signed by the tutors.

6. List of Activities:

There are 30 activities in the Science and Technology Practical Manual. These 30 activities are distributed under three sections as:

Physical Sciences

1. To Determine the Density of the Material of a given solid using a Spring Balance and a Measuring Cylinder
2. To Find the Average Speed of an individual, as one walks/runs, to and fro between two points
3. To Observe and Compare the Pressure Exerted by a Solid Iron Cuboid placed on Fine Sand/Wheat Flour while resting on its three different Faces and Calculate the Pressure Exerted in the three different Cases
4. To Verify the Third Law of Motion Using Two Spring Balances
5. To Determine the Melting Point of Ice

6. To Study the Laws of Reflection of Light Using a Plane Mirror
7. To Study the Change in the Size, and Position of Image formed by a Convex Lens by hanging the Position of an Object (Candle) placed in front of it
8. To Study the Change in Current through a Resistor by Changing Potential Difference across it. Determine the Resistance of the Resistor by Plotting a Graph between Potential Difference and Current
9. To Assemble a Household Circuit Comprising Two Bulbs (3 Volt each), Two Turn On-Off Switches, a Fuse and Two Dry Cells as Source of Power
10. To Determine the Speed of a Pulse Propagated through a Stretched String

Chemical Sciences

1. To Prepare an Aqueous Solution of Common Salt of a given Composition
2. Separation of Mixtures
3. To Differentiate between a Chemical and Physical Change in a given Process
4. To Test the Presence of Water Vapours in Air
5. To Test the Presence of Carbon Dioxide (CO₂) in Air
6. To find out the Approximate Percentage of Oxygen in Air
7. To Test the Acidic/Basic Nature of a Solution with the help of pH Paper
8. To find the pH of Fruit/Vegetables Juices with the help of pH Paper
9. To Identify Washing Soda and Baking Soda out of the Samples of two White Powders
10. To Carry out Chemical Reactions of Different Types

Biological Sciences

- 1) (i) To Prepare a Temporary Stained Mount of an Onion Peel; Observe it Under the Microscope and Record Observations
(ii) To Prepare a Temporary Stained Mount of Human Cheek Cells; Observe it under the microscope and Record Observations
- 2) To Study and Draw Different Types of Plant and Animal Tissues with the Help of Permanent Slides : Plant tissues: Parenchyma and Sclerenchyma; Animal tissues: Blood, Striped muscle fibers and Nerve cells
- 3) To Study the Process of Osmosis through a Semi-permeable Membrane
- 4) To Test the Presence of Starch in Green Leaves Exposed to Sunlight
- 5) To Observe that Oxygen is Released during the Process of Photosynthesis

- 6) To Show that CO₂ is given out during Respiration.
- 7) (i) To Test the Presence of Starch and Fat in Given Food Samples.
(ii) To Test the Presence of Adulterants in (a) Milk and (b) Metanil Yellow in Pulse.
- 8) To Estimate the Level of Pollution in Terms of Particulate Matter by Comparing Leaf Samples Collected from Different Areas.
- 9) To Observe Organisms from Given Pictures or Specimens or in the Surroundings (e.g. Crop Field, a Garden, or a nearby Pond) Classify Them as Producers and Consumers, and Construct Their Food Chains and Indicate their Trophic Levels.
- 10) To Study External Structural Adaptations in any two Organisms out of Cockroach, Fish, Frog, Lizard and Pigeon.



Secondary Level

HOME SCIENCE (216)

Practical Examination

1. Objectives:

Home Science is a dynamic subject. It encompasses different modules like our food; our clothes; our home; our resources; growth and development and our rights and responsibilities. All aspects are essentially practiced in our lives. Hence, practical classes through PCP (personal contact programme) in Home Science will reinforce the learning and inculcate the practical skills among learners. The purpose of introducing Formative and Summative Assessments in Practical PCP is to encourage the learners' involvement and active participation in PCP classes. Participation in 6 PCPs (5+1) by all learners is mandatory.

2. Implementation:

There are 17 activities listed in the practical manual in Book 2 of the Home Science (216). These activities will be conducted in **5 PCP sessions** at the Study Centre. These will be assessed through Formative (Continuous) assessment. The **Sixth PCP** is reserved for the final examination that will be assessed through the Summative (Final) Assessment at the Study Centre. The dates for the practical examination (Final) will be notified by NIOS in the examination date sheet. 50% weightage is for each of Formative (Continuous) and Summative (Final) Assessments. The maximum mark for Practical in Home Science is 15. The distribution of activities in 05 PCPs is as follows:

First PCP Practical:

- (i) Orientation of the learners about the distribution of activities to be performed and allocation of marks for both the Formative (Continuous) and Summative (Final) Assessments
- (ii) Orientation of learners about the activities to be done in the class for the module "**Our Food**" i.e. different foods to be cooked using different methods of cooking; classification of food into food groups and planning of foods for different age groups (practical no. 1, 9, and 10 in the practical manual) as:

- ❖ **Practical 1:** Observe and record the results of cooking any two cereals and two vegetables cooked by different methods

- ❖ **Practical 9:** To observe the items eaten, from the given menu. To classify each item into an appropriate food group. To suggest items to be included in the food group not covered in the meal.
- ❖ **Practical 10:** To adjust the given meal for a family. keeping in mind the sex, age and activity level of the family members

Second PCP Practical:

- (i) Orientation of learners about the identification of fabric; making a sample of plain weave; removing stains from cotton fabric and washing and finishing of a garment as per the module, **“Our Clothes”**, (practical no. 2, 11, 12, 13 and 14 in the practical manual) as:
- ❖ Practical 2: To identify fabrics through visual inspection
 - ❖ Practical 11: To identify fibres, using the burning test
- OR
- ❖ *To identify the given fabrics by touching and feeling the texture
 - ❖ Practical 12: To make graphic illustration or sample of plain weave by using strips of paper
 - ❖ Practical 13: To remove the stains from the given white cotton fabrics in the labs.
- OR
- ❖ *Write the appropriate procedure in the column provided in the given table to remove the given stains.
 - ❖ Practical 14: a) To wash and finish a Cotton Dupatta /Saree/ Shirt, b) To wash and finish a woollen shawl/cardigan and c) To wash and finish a silk scarf/blouse/Dupatta

Third PCP Practical:

- i.) Orientation of learners about the ways to identify the safety hazards in the home, preparation of a first-aid kit and ways to clean different surfaces in the home given in the module, **“Our Home”**, (practical no. 3, 8, 15 of the practical manual) as:
- ◆ Practical 3: To prepare a first-aid kit
 - ◆ Practical 8: To survey the home for safety hazards and suggest remedies regarding the same
 - ◆ Practical 15: To clean different surfaces available in the laboratory such as plastic, metal, tiles, wood etc.
- OR
- *State appropriate cleansing agents and method of cleaning to clean different surfaces available in the laboratory such as plastic, metal, tiles, wood etc.

Fourth PCP Practical:

- i.) Orientation of learners about the significance of the management process; making a time plan and a spending plan and how to record it as per the module, **“Our Resources”**, (practical no. 4, 5, 6, of the practical manual)as:
- ◆ Practical 4: To record and study the weekly spending plan of your family

- ◆ Practical 5: To record the steps in the process of management while arranging a family function
- ◆ Practical 6: To make a time plan for a homemaker with two school going kids, for a typical evening from 4:00 PM to 8:00 PM.

Fifth PCP Practical:

(i) Orientation of learners about quality marks on a product and the making of the same; observation of children and the making of a toy, as in two modules, “**Growth and Development**”, and ”**Our Rights and Responsibilities**”, of consumer education (practical no. 7, 16 and 17 of the practical manual)as:

- ❖ Practical 7: To prepare a label for a product with given quality marks

OR

*Select a product from amongst the following quality marks and give information on which should be included in the given label.

- ❖ Practical 16: To observe the communication skills of four children in given age groups
- ❖ Practical 17: To make a low cost toy/game for children, using household materials

3. Scheme of Practical Examination:

The scheme of practical examinations is to be followed as per the details given below:

- ❖ The conduct of the practical examinations is mainly linked with practical PCP. There are 06 practical sessions which are made compulsory.
- ❖ The initial five (05) PCP practicals have to be assessed through Formative (Continuous) Assessment and will be utilized for learning.
- ❖ The final (6th PCP) practical will be utilized for Summative (Final) Assessment for practical examination.
- ❖ A weightage of 50% of the marks will be awarded for Formative (05 practical classes) Assessment and 50% marks for the 6th practical classes for Summative Assessment.

1. Marks Distribution in Formative Assessment (05 PCP Classes):

	Criteria for Assessment	Marks	<u>Remarks</u>
1.	Regular Participation in 05 PCP Classes	1½	Five boxes under formative assessment in the award list will be filled up based on these 05 criteria.
2.	Activities Performed in 05 PCP Classes	1½	
3.	Practical Record maintained in 05 PCP Classes	1½	
4.	Observation (in the given practical)	1½	
5.	Observation (Group participation with peers)	1½	
Total		7½	

2. Marks Distribution in Summative Assessment (6th Final PCP Class):

S. No.	Criteria for Assessment	Marks	Remarks
1.	Assessment of activity performed (Two activities out of given three activities)	2 x 2½ = 5	Time of 2½ hours will be allowed for the final examination.
2.	Viva-Voce based on the activities	2½	
Total		7½	

Note: The total (Formative and Summative Assessment) weightage is 5 marks. In the award slip, the mark obtained by the learner both in Formative and Summative Assessments are to be mentioned clearly and the final figure is the sum of the marks of Formative and Summative Assessment.

Preparations and precautions for PCP Practical Sessions:

- (i) The Centre Superintendent and the tutor must read the instructions mentioned in the Guidelines for practical PCPs.
- (ii) The attendance sheet must be properly maintained in each Practical PCP class.
- (iii) The award list must be filled up, as per the given assessment criteria.
- (iv) The Tutor as well as the learner must read the instructions given in the practical manual.
- (v) The Tutor must check and arrange the materials, tools, equipments etc that will be needed in the Practical PCP sessions in advance.
- (vi) The techniques of group work may be followed in Practical PCP sessions. One group can do one practical and another group another practical, then turn wise.
- (vii) Learners are informed about the schedule of Practical PCP sessions in advance.
- (viii) Learners can be asked to bring certain material, like a dupatta for washing, to the class.
- (ix) Learners shall be asked to bring the practical record book in each class. Each learner is expected to maintain it as per the instructions given in the practical manual. It will be used in the final examination.
- (x) They should be told to maintain cleanliness and follow safety measures when using fire, gas, chemicals, etc.
- (xi) Learners should be asked to clean the articles after use.
- (xii) Before going for Practical Examination, get all the exercises (17 practicals) of Practical Record Book signed by tutors.



PAINTING (225)

Secondary Level

Practical Examination

1. Objectives:

Painting is a powerful way of self expression. This makes people more sensitive to their environment and develops a creative attitude. It helps in developing the aesthetic sense, skill and knowledge of learners. It is a medium to express their thoughts and feelings to others. The objective of this document is to provide a clear vision and concept of the subject to the learner of the course. Step wise exercises in the prescribed course curriculum will help the learner to draw and paint with original innovative thinking. After understanding about colours, space, harmony and perspective, the learner will develop artistic skills and his/her observation will become stronger. The purpose of introducing Formative and Summative Assessment in Practical PCPs is learners' involvement and active participation in PCP classes as well as continuous assessment which leads to learning.

2. Implementation:

There are 12 activities listed in the Practical Manual of Secondary level Course in Painting (225). These activities are to be conducted in 5 PCP sessions as given below, at the study centre. These will be assessed through Formative (Continuous) Assessment. The Sixth PCP is reserved for the final examination that will be assessed through Summative (Final) Assessment at the Study Centre. The dates for the practical examination (Final) will be notified by NIOS in the examination date sheet. 50% weightage is for each of Formative (Continuous) and Summative (Final) Assessments. The maximum mark for Practical in Painting is 70. The *distribution of activities in 05 PCPs* is as follows:

First PCP Practical

Attendance of all learners is mandatory. In the PCP, the learner is introduced to the course to sensitize the learner about:

PENCILS – HB stands for Hard and Black (50:50) and one should use **Soft** Range of pencils - starting from 2B to 10B onwards. These pencils are easy to handle, soft to use and one can create a range of tonal values from light to dark.

PAPER - major difference between cartridge, newsprint, handmade and ivory paper, how to gauge the correct side (rough side) of cartridge sheet before drawing

Tutor must ensure that the learners place a newsprint sheet underneath the actual drawing sheet. (To avoid transferring of any drawing board texture)

Learners are introduced to the elements of Drawing (line –strength and fluency, thick and thin lines, rhythm ,texture, shape, etc.) and its importance through practice based exercises without the use of eraser.

Second PCP Practical

Object Drawing (two objects from the basic geometrical forms)

Aim of this PCP is to focus on quality of line drawing

Placement of the paper (portrait or landscape), arrange and draw the given objects within the space, keeping in mind division of background, middle ground and foreground

Measuring of objects from distance with the help of pencil. To measure, close one of your eyes, hold a pencil at arm's length (always keep your arm straight).

Understanding of relative study of objects and usage of negative – positive space

Third PCP Practical

Nature Study in pencil and colours

Composition of outdoor Nature Study, using a view finder

Differentiate between the right proportion, balance and rhythm, when viewing the vastness of natural things. Before starting the colours, learners should be given 10-15 minutes to study different colour values, shadows reflections and highlights of the nature.

Sometimes the treatment of the background helps to define a natural object more clearly.

Fourth PCP Practical

Human Figure Drawing

Study and Understanding of Human figures from to day to day life and gradually arranging visual elements around human figures to form a painting, using different colour mediums or mixed mediums. Examples: fighting with your younger brother, weekly haat/bazaar near your house and so on in the syllabus. More examples: Playing with your pets, a man walking with two dogs, a running horse cart near your house and so on.

Effective communication and expression of the idea/concept/emotions to the viewer through colours and perspective

Individual innovation, creativity and originality should be much encouraged and appreciated.

Animal Figure Drawing

Study and Understanding of Animal figures: your pets, a child walking with two dogs, a running horse, and so on in the syllabus.

Effective communication and expression of the idea/concept/emotions to the viewer through colours and individual innovation, creativity and originality should be much encouraged and appreciated.

Fifth PCP Practical

Composition

Create a Painting on the given subject keeping in mind the principles of composition. Communication and expression of the idea/concept/emotions to the viewer through colours and perspective

Free hand drawing directly from life and nature would give a sense of all the elements of a composition, starting with basic design and various experiments to understand the forms. Use of different colours will bring the sense of composition.

Topics suggested by the tutor, for example, are- Mela, Haat, Bazaar, At the Café, Beggars, mother cooking, Storytelling by grandparents, Playing in the rain and so on.

Learners must focus on the concept of perspective introduced in the fourth PCP.

Composition should be creative, original and different; reference is allowed but not copying.

The tutor should talk about masters and contemporary artists and their artworks.

Introducing the learners to Primary, Secondary, Cool, Warm, complementary, and contrast colours

Learning about various colour mediums, difference between poster and tube water colours (opaque and transparent) and their application techniques.

Sixth Final PCP Class

- i. Examiner should arrange any two or three objects from the following:
commonly available objects (such as water bottle/glass/ spectacles/ hardbound book/ladies' bag/jugs/mugs/cup/earthen pots, etc.
- ii. Create a Composition that would give a sense of all the elements being part of a composition. Start with a basic design and various experiments to understand the forms
Use of different colours.

Individual innovation, creativity and originality should be encouraged and appreciated.
and use of different colours will bring the sense of illustration.

3. Scheme of Practical Examination:

The following scheme of practical examinations to be followed, as per the details given below:

- ◆ The conduct of practical examinations is mainly linked with practical PCP. There are 06 practical sessions which are made compulsory.
- ◆ The initial five (05) PCP practicals have to be assessed through Formative (Continuous) Assessment and will be utilized for learning.
- ◆ The final (6th PCP) practical will be utilized for Summative (Final) Assessment for practical examination.
- ◆ A weightage of 50% of the marks will be awarded for Formative (05 practical classes) Assessment and 50% marks of the 6th practical class for Summative Assessment.

Marks Distribution in Formative Assessment (05 PCP Sessions):

S. No.	Criteria for Assessment	Marks	<u>Remarks</u>
1.	Regular Participation in 05 PCP Classes	7	The five boxes under formative assessment in the award list will be filled up based on these 05 criteria.
2.	Activities Performed in 05 PCP Classes	7	
3.	Practical Record maintained in 05 PCP Classes	7	
4.	Use of practical instruments/ equipments	7	
5.	Participation with Peer-Group and Tutor.	7	
Total		35	

Marks Distribution in Summative Assessment (6th Final PCP Class):

S. No.	Criteria for Assessment	Marks	<u>Remarks</u>
1.	Assessment of activity performed (Two activities out of given 05 activities)	25	Time of 04 hours will be allowed for the final examination.
2.	Portfolio submission	10	
Total		35	

Note: The total (Formative and Summative Assessment) weightage is 70 marks. In award list, the marks obtained by the learner, both in Formative and Summative Assessment are to be mentioned clearly and the final figure is the sum of the marks of Formative and Summative Assessments.

4. Preparations for PCP Practical Sessions:

- (i) The Centre Superintendent and Tutor must read the instructions mentioned in the Guidelines for practical PCPs.
- (ii) Check and arrange the materials, tools, equipments etc that will be needed in the Practical PCP sessions in advance.
- (iii) Learners are informed about the schedule of Practical PCP sessions.
- (iv) The attendance sheet must be properly maintained in each Practical PCP class.
- (v) The award list must be filled up, as per the given assessment criteria.
- (vi) The techniques of group work may be followed in Practical PCP sessions.
- (vii) Learners shall be asked to bring the practical record book in each class. Each learner is expected to maintain it as per the instructions given in the practical manual.

5. Precautions (DOs and DON'Ts)

Discuss the following points with the learners regarding writing the practical record book:

- ◆ All three objects should be of different sizes and shapes.
- ◆ All the three objects should not be placed in a straight line.
- ◆ Tutor/ Examiner should select objects preferably of different colours.
- ◆ The objects should not be placed above or below the learners' eye level.

6. List of Activities:

There are 12 activities in the Painting Practical Manual and One Portfolio submission along with one sketch book. These 12 activities are distributed under three sections as given below:

6.1 Section –A (Port-folio Submission)

Learners need to submit portfolios with minimum eight own works, which includes dating, mounting and maintaining of each work.

Part 1 Object and Nature study (Minimum three works)

¼ imperial size paper

- One in pencil line drawing
- One in colours
- One in Pen and ink (Gel Pen, Sketch pen or ball pen)

Part 2 Human and animal figure study – (Minimum three works)

¼ imperial size paper

- One in pencil line drawing for both (human and animal)
- One with tone in pencil for the both (human and animal)
- One in colour drawing for the both (human and animal)

Part 3 Composition – (Minimum four works)

½ imperial size paper

- One composition with line and colours (Poster or water colour)
- One in collage.
- One in pastel colour
- One in pencil or pen and ink

6.2 Section- B (Object and Nature Study)

Since the outline cannot bring the solidity of the object, application of light and shade is required.

While depicting light and shade and depth. Three other distinction highlight, reflected light and cast shadow should also be forced.

Learner should create tonal values from light to dark using 2B to 10B pencils.

To avoid smudging of shading learner should keep white paper under his/her palm.

DO NOT USE ERASER WHILE SHADING.

6.3 Section-C (Composition in Mixed Medium)

Free hand drawing directly from life and Nature would give a sense of all the elements of a composition; starting with basic design and various experiments to understand the forms. Use of different colour will bring the sense of composition. The making of collages will be very helpful to understand the textural quality of a composition. With the help of the knowledge of previous lessons compositions are to be created with the geometrical shapes in animate and inanimate forms, taking care of rhythm, balance, space, colours and harmony.

Collage to be created with the help of coloured cut out papers, picture from magazine or any easily available materials and taking care of all the elements of composition.

Materials required for all the activities

Half Imperial sized or (15''X22'') Cartridge sheets.

Newsprint or A3 sheets

Rubber, Sharpener/mount cutter

2B,4B, 6B and 8B Drawing Pencils

Half Imperial sized drawing file

Colours- pencil colours, oil pastels colours, water colours, Poster colours etc.

Paint Brushes (round and flat No. 2, 4, 6, 8, and 10)

Colour Palette, container for water and rag(Old piece of cotton cloth)

Sketchbook (size-8''x11'' or minimum 30 sheets)

Butter Paper/ white kite paper(guddi paper)

Different Shapes and sized objects like pots, flower vases, Bottles, etc. (material required by the tutors for object drawing sessions.)

Drapery -preferably khadi cotton fabric of minimum size 1 meter colour- Prussian blue, red, orange, yellow, green (**material required by the tutors for object drawing sessions**).



Secondary Level
DATA ENTRY OPERATIONS (229)
PRACTICAL EXAMINATION

1. **Objectives:** Data Entry Operations is a practical oriented subject. PCP (Personal Contact Programme) will inculcate the practical skills in Data Entry Operations among learners. Participation in PCP (5+1) by all learners is mandatory.

2. **Implementation:**

The practical activities are to be conducted in 5 PCP sessions as given below, at the study centre. These will be assessed through Formative (Continuous) Assessment. The Sixth PCP is reserved for the final examination that will be assessed through Summative (Final) Assessment at the Study Centre. The dates for the practical examination (Final) will be notified by NIOS in the examination date sheet. 50% weightage is for each of Formative (Continuous) and Summative (Final) Assessments. The maximum mark for Practical in Data Entry Operations is 60. The *distribution of* activities in 05 PCPs is as follows:

First PCP includes

- (iii) Orientation of the learners about distribution of activities to be performed and allocation of Marks for both the Formative (Continuous) and Summative (Final) Assessment

Practical 1:

Enter the following details in your Word documents Arial, font size 14 and save this file with name, 'First_Document', in My Documents.

S.No	Registration Form	
(i)	Name of Candidate	
(ii)	Father's Name	
(iii)	Mother's Name	
(iv)	Date of Birth	
(v)	Postal Address	
(vi)	Sex	

(vii)	Nationality	
(viii)	Educational Qualification	
(ix)	Work Experience	
(x)	Mobile No	

Perform the following activity on the above table:

- (iv) Apply the style.



Practical 2:

Open the file, “First_Document”, and perform the following activities:

- Make the headings from serial no. (i) to (viii) bold.
- Change the Text Highlight Color as “Yellow” at the entry at serial no. (v),
- Make the entry at serial no. (iii) italics.
- Select the whole document and decrease its font size by 3 points.
- Make the line spacing 1.5 (whole document).
- Apply the Center alignment for the whole table

Second PCP:

Practical 1:

Type a document of at least 1 page on any topic with the following specifications:

- Page size A5
- Include at least one numbered list and one bulleted list.
- Line spacing 2
- Footer should include Page number and your name.
- Left margin: 1.5”, Right margin: 0.5”, Top margin: 1”, Bottom Margin: 1”
- Insert any picture in your document.

Practical 2:

With the help of Mail Merge facility, send your birthday invitation letter to five of your friends. Design a sample Data Source (in Excel) for this purpose. The data source should have at least 5 fields: First name, Last name, Address, City, Pin code. Take a print out of this Merged Document (invitation letter).

Third PCP

Practical 1:

Enter the following data in your worksheet. Insert two Pie Charts (one for Matches won and the other for Percentage of Matches won)

Sports Department ABC School

		Coach	Matches Played	Matches Won	Highest Level	% of Matches Won	Remarks
	Basket Ball (J)	Neelam	10	8	State	80.00%	
	Basket Ball(S)	Indrash	15	10	State	66.67%	
	Volley Ball(J)	Archita	12	9	State	75.00%	
	Volley Ball(S)	M. Pal	18	15	National	83.33%	
	Cricket (J)	Narendra	10	7	Zonal	70.00%	

Practical 2:

Enter the following data in your worksheet.

	A	B	C	D	E	F	G
1	Name	Class	Mark 1	Mark 2	Mark 3	Total	Average
2	Swati	10	80	70	92		
3	Puneet	10	98	67	46		
4	Manoj	10	54	78	59		
5	vipin	10	86	73	78		
6	Vidya	10	72	69	91		
7							
8							

- Insert one row on the top of the Worksheet and type “Student Mark sheet”. Merge the columns, A1 to G1.
- Find the total and average marks of each student.
- Make the first row BOLD and Underline.
- Select Total Column and fill blue color.

Fourth PCP.

Practical 1:

Create a PowerPoint presentation on “Water Conservation”.

- What is water conservation?
- Insert a relevant picture in your Presentation.
- How to conserve water
- Insert slide number and date in your presentation.

Practical 2:

Create a PowerPoint presentation on “Good Habits”.

- (i) Introduction to Good Habits
- (ii) Insert a relevant picture in your Presentation.
- (iii) Apply animation to our slides.
- (iv) Print your presentation - 2 slides per page.

Fifth PCP

Practical 1:

Create a report on the Computer Lab(s) in your class. The report must at least include the following information:

- (i) Number of computers in your class
- (ii) Configuration of at least 2 computers in your school
- (iii) Names of various Operating Systems being used
- (iv) Names of various software installed

Practical 2:

Enter the following data in your Worksheet

Class X (2015-16) – Computer Science					
SNO.	NAME	Internal	External	Total	Signature
1	Renu	20	78		
2	Yashika	14	59		
3	Pankaj	11.	62		
4	Anita	18	36		
5	Priyanka	18	89		
6	Kapil	10	45		
7	Amit	11	47		
8	Ajay	12	56		
9	Aman	3	88		
10	Yogesh	8	79		

You have to use the following features to create this worksheet:

- AutoSum
- Merge Cells
- Formatting (Bold, Centre align, etc.)
- Column Chart (To display marks obtained in Worksheet)
- Chart Title, Axis Title
- Change the sheet 1 (worksheet name) as “Mark sheet”.

3. Scheme of Practical Examination:

The following scheme of practical examinations to be followed as per the details given below:

- ❖ The conduct of practical examinations is mainly linked with practical PCP. There are 06 practical sessions which are made compulsory.
- ❖ The initial five (05) PCP practicals have to be assessed through Formative (Continuous) Assessment and will be utilized for learning.
- ❖ The final (6th PCP) practical will be utilized for Summative (Final) Assessment for practical examination.
- ❖ A weightage of 50% of the marks will be awarded for Formative (05 practical classes) Assessment and 50% marks for the 6th practical classes of Summative Assessment.

V. Marks Distribution in Formative Assessment (05 PCP Sessions):

S. No.	Criteria for Assessment	Marks	<u>Remarks</u>
1.	Regular Participation in 05 PCP Classes	10	The five boxes under the formative assessment in the award list will be filled up based on these 04 criteria.
2.	Activities Performed in 05 PCP Classes	10	
3.	Practical Record maintained in 05 PCP Classes	5	
4.	Participation with Peer-Group and Tuto.	5	
Total		30	

VI. Marks Distribution in Summative Assessment (6th Final PCP Class):

S. No.	Criteria for Assessment	Marks	<u>Remarks</u>
1.	Assessment of activity performed (For Two activities)	20	Time of 2 hours will be allowed for the final examination.
2.	For taking the print outs of the output	5	
3.	Viva-Voce based on the activities	5	
Total		30	

Note: The total (Formative and Summative Assessment) weightage is 60 marks. In award list, the marks obtained by the learner, both in Formative and Summative Assessment are to be mentioned clearly and the final figure is the sum of the marks of Formative and Summative Assessments.

4. Preparations for PCP Practical Sessions:

- (i) The Centre Superintendent and Tutor must read the instructions mentioned in the Guidelines for practical PCPs.
- (ii) Check and arrange the materials, tools, equipments etc that will be needed in the Practical PCP sessions in advance.

- (iii) Learners are informed about the schedule of Practical PCP sessions. Practicals may be arranged in groups of learners.
- (iv) The attendance sheet must be properly maintained in each Practical PCP class.
- (v) The award list must be filled up as per the given assessment criteria.
- (vi) The techniques of group work may be followed in Practical PCP sessions.
- (vii) Learners shall be asked to bring the practical record book in each class. Each learner is expected to maintain it as per the instructions given in the practical manual.

5. Precautions (DOs and DON'Ts)

Discuss the following points with the learners regarding writing the practical record book:

- (i) Throughout the practical note book, the learner should follow the same style. Ask them to use a good fountain pen and a sharp black pencil. It is recommended that the right hand page should be written in blue ink and the left hand page with a black pencil.

The recommended style of writing is shown below:

Left hand page

Table, Chart and print out of the output screen

Right hand page

Title of the exercise, Date

Exercise No.

Interpretation and conclusion

- (ii) Each experiment should start from a new page.
- (iii) Mistakes should be crossed out with a single line so that it can still be read; the correct statement rewritten in its place.
- (iv) No page should be torn-off from the practical record book.
- (v) Before going to take Practical Examination, get all the exercises of Practical Record Book signed by your tutors.

Computer Lab Rules (Do's and Don'ts)

- ❖ The computers in the lab are to be used for academic purposes only.
- ❖ Uploading or downloading software without permission is strictly prohibited
- ❖ Do not make any changes to the desktop or to installed software.
- ❖ Playing computer games is strictly prohibited.
- ❖ Report any problems to the instructor.
- ❖ Please Logoff when you leave.

Note: Material for the practical examination will be provided by the centre superintendant at the practical examination centre, as per requirement of the activities.



Senior Secondary Level **PHYSICS (312)** Practical Examination

1. Objectives

Like any other science subject, Physics is a subject which can be learnt better by doing. In fact, the experiments form an integral part of the Physics course at the senior secondary stage. Practicals, being an inseparable part of Physics Curriculum, are to be done with sincerity and evaluated as precisely as possible. In any practical course, the learner handles a number of instruments. In later career the learner you may be involved in scientific research, or in an industry. This guideline covers the procedure to be adopted by the NIOS learners for dealing with the practical examination. It focuses on developing practical skills and prepares learners for cultivating scientific attitude and scientific temper. The purpose of introducing Formative and Summative Assessments in Practical PCP is to increase learners' involvement and active participation in PCP classes as well as continuous assessment which leads to learning.

2. Implementation

To inculcate the necessary practical skills, 29 experiments have been identified which are listed in 03 sections. (The list covers the major aspects of the practical Physics curriculum.

These activities are to be conducted in 5 PCP sessions, as given below, at the study centre. These will be assessed through Formative (Continuous) Assessment. The Sixth PCP is reserved for the final examination that will be assessed through Summative (Final) Assessment at the Study Centre. The dates for the practical examination (Final) will be notified by NIOS in the examination date sheet. 50% weightage is for each of Formative (Continuous) and Summative (Final) Assessments. The maximum mark for Practical in Physics is 20. The *distribution of activities in 05 PCPs* is as follows:

First PCP Practical:

- i) Orientation of the learners about the distribution of activities to be performed and allocation of marks for both the Formative (Continuous) and Summative (Final) Assessments.
- ii) Orientation of learners about the handling of scientific equipment and apparatus, chemicals, etc.
- iii) Learners have to choose **any two activities** to be performed from following experiments (S. No. Section A (1-5) of Practical Manual) as:
 - ◆ To determine the internal diameter and depth of a cylindrical container (like tin can, calorimeter) using a Vernier callipers and find its capacity. Verify the result using a graduated cylinder.

- ◆ To determine the diameter of a given wire, using a screw gauge
- ◆ To determine the radius of curvature of a concave mirror, using a spherometer
- ◆ To find the time period of a simple pendulum for small amplitudes and draw the graph of length of the pendulum against square of the time period. Use the graph to find the length of the second's pendulum.
- ◆ To find the weight of a given body, using law of parallelogram of vectors

Second PCP Practical:

- i) Orientation of learners about plotting of graphs, determination of specific heat etc. and its scientific principles
- ii) Learners have to choose **any two activities** to be performed out of the following activities. (S. No. Section A (5-9) of Practical Manual) as:
 - ◆ To study the Newton's law of cooling by plotting a graph between cooling time and temperature difference between calorimeter and surroundings
 - ◆ To determine the specific heat of a solid, using the method of mixtures
 - ◆ To measure extensions in the length of a helical spring with increasing load. Find the spring constant from the load extension graph.
 - ◆ To find the time required to empty a burette, filled with water to $\frac{1}{2}$ of its volume, to $\frac{1}{4}$ of its volume, to $\frac{1}{8}$ of its volume and so on. Then, plot a graph between volume of water in the burette and time. Thus, verify that the fractional rate of flow is same (analogy to radio-active decay).

Third PCP Practical:

- i) Orientation of learners about the interpretation of the data and conclusions of experiments
- ii) Learners have to choose **any two activities** to be performed. (S. No. From Section A 9 From Section 13) of Practical Manual) as:
 - To determine the wavelength of sound produced (i) in an air column and (ii) the velocity of sound in air at room temperature, using a resonance column and a tuning fork
 - To compare the frequencies of two tuning forks by finding the first and second resonance positions in a resonance tube
 - To establish graphically, the relation between the tension and resonating length of a string of a sonometer wire vibrating in its fundamental mode with a given tuning fork. Use the graph to determine the mass per unit length of the string.
 - To find the value of v for different values of u for a concave mirror and find its focal length (f) by plotting graph between $1/u$ and $1/v$

Fourth PCP Practical:

- (i) Orientation of learners about the concept of determination of focal length (f) convex lens, concave lens, convex mirror, concave mirror and plotting of graphs.
- (ii) Learners have to choose **any two activities** to be performed from the following experiments. (S. No. Section B 13 to 17 of Practical Manual) as:

- ◆ To find the focal length (f) of a convex lens by plotting graph between $1/u$ and $1/v$
- ◆ To find the focal length (f) of a convex mirror, using a convex lens
- ◆ Determine the focal length of a concave lens by combining it with a suitable convex lens.
- ◆ To draw a graph between the angle of incidence (i) and angle of deviation (D) for a glass prism and to determine the refractive index of the glass of the prism using the graph

Fifth PCP Practical:

- (i) Orientation of learners about the working principles of ammeter, voltmeter, potentiometer, meter bridge for determination of e.m.f., specific resistance etc. for a given wire.
- (ii) Learners have to choose **any two activities** to be performed from the given exercises. (S. No. Section C 20-24 of Practical Manual) as:
 - ❖ To verify the law of combination (series and parallel) of resistances, using ammeter-voltmeter method and coils of known resistances
 - ❖ To compare the e.m.f.'s of two given primary cells by using a potentiometer
 - ❖ To determine the specific resistance of the material of a given wire using a metre bridge
 - ❖ To determine the internal resistance of a primary cell, using a potentiometer

3. Scheme of Practical Examination:

The following scheme of practical examinations is to be followed as per the details given below:

- ◆ The conduct of practical examinations is mainly linked with practical PCP. There are 06 practical sessions which are made compulsory.
- ◆ The initial five (05) PCP practical sessions have to be assessed through Formative (Continuous) Assessment and will be utilized for learning.
- ◆ The final (6th PCP) practical session will be utilized for Summative (Final) Assessment for practical examination.
- ◆ A weightage of 50% of the marks will be awarded for Formative (05 practical classes) Assessment and 50% marks for the 6th practical class for Summative Assessment.

I. Marks Distribution in Formative Assessment (05 PCP Sessions):

S.No.	Criteria for Assessment	Marks	<u>Remarks</u>
1.	Regular Participation in 05 PCP Classes	2	The five boxes under formative assessment in the award list will be filled up based on these 05 criteria.
2.	Activities Performed in 05 PCP Classes	2	
3.	Practical Record maintained in 05 PCP Classes	2	
4.	Use of practical instruments/equipment	2	
5.	Participation with Peer-Group and Tutor	2	
Total		10	

II. Marks Distribution in Summative Assessment (6th Final PCP Class):

S. No.	Criteria for Assessment	Marks	Remarks
1.	Assessment of activity performed (Two activities out of given three activities)	2 x 3½ = 7	Time of 3 hours will be allowed for the final examination.
2.	Viva-Voce based on the activities	3	
Total		10	

Note: The total (Formative and Summative assessment) weightage is 20 marks. In the award list, the marks obtained by the learner, both in Formative and Summative Assessments are to be mentioned clearly and the final figure is the sum of the marks of Formative and Summative Assessments.

3. Preparations for PCP Practical Sessions:

- (i) The Centre Superintendent and Tutor must read the instructions mentioned in the Guidelines for practical PCPs.
- (ii) Check and arrange the materials, tools, equipment etc. that will be needed in the Practical PCP sessions in advance.
- (iii) Learners are informed about the schedule of Practical PCP sessions. Practicals may be arranged in groups of learners.
- (iv) The attendance sheet must be properly maintained in each Practical PCP class.
- (v) The award list must be filled up as per the given assessment criteria.
- (vi) The techniques of group work may be followed in Practical PCP sessions.
- (vii) Learners shall be asked to bring the practical record book in each class. Each learner is expected to maintain it as per the instructions given in the practical manual.

4. Precautions (DOs and DON'Ts)

Discuss the following points with learners regarding writing the practical record book:

- (i) Throughout the practical note book, the learners should follow the same style. Ask them to use a good fountain pen and a sharp black pencil. It is recommended that the right hand page should be written in blue ink and the left hand page with a black pencil.

The recommended style of writing is shown below:

Left hand page	Right hand page
Scale, Projections, Calculations. Graph, Diagram, Figures	Title of the Exercise, Date, Exercise No, Interpretation and Conclusion

- (ii) Each experiment should start from a new page.
- (iii) Graphs and diagrams should be drawn neatly in a proportionate scale.
- (iv) Mistakes should be crossed out with a single line so that they can still be read. The correct statement should be written in its place.
- (v) No page should be torn-off from the practical record book.
- (vi) Before going to take Practical Examination, get all the exercises of Practical Record Book signed by your tutor.

5. List of Practicals

Experiments which a learner may perform during PCPs are listed below under three sections A, B and C:

Section-A

1. To determine the internal diameter and depth of a cylindrical container (like tin can, calorimeter) using a Vernier callipers and find its capacity. Verify the result using a graduated cylinder.
2. To determine the diameter of a given wire, using a screw gauge
3. To determine the radius of curvature of a concave mirror, using a spherometer
4. To find the time period of a simple pendulum for small amplitudes and draw the graph of length of the pendulum against square of the time period. Use the graph to find the length of the second's pendulum.
5. To find the weight of a given body, using law of parallelogram of vectors
6. To study the Newton's law of cooling by plotting a graph between cooling time and temperature difference between calorimeter and surroundings
7. To determine the specific heat of a solid, using the method of mixtures
8. To measure extensions in the length of a helical spring with increasing load. Find the spring constant from the load extension graph.
9. To find the time required to empty a burette filled with water to $\frac{1}{2}$ of its volume, to $\frac{1}{4}$ of its volume, to $\frac{1}{8}$ of its volume and so on. Then, plot a graph between volume of water in the burette and time. Thus, verify that the fractional rate of flow of water is same (analogy to radio-active decay).

Section-B

10. To determine the wavelength of sound produced (i) in an air column and (ii) the velocity of sound in air at room temperature, using a resonance column and a tuning fork
11. To compare the frequencies of two tuning forks by finding first and second resonance positions in a resonance tube.
12. To establish graphically the relation between the tension and resonating length of a string of a sonometer wire vibrating in its fundamental mode with a given tuning fork. Use the graph to determine the mass per unit length of the string.

13. To find the value of v for different values of u for a concave mirror and find its focal length (f) by plotting graph between $1/u$ and $1/v$
14. To find the focal length (f) of a convex lens by plotting graph between $1/u$ and $1/v$
15. To find the focal length (f) of a convex mirror, using a convex lens
16. Determine the focal length of a concave lens by combining it with a suitable convex lens
17. To draw a graph between the angle of incidence (i) and angle of deviation (D) for a glass prism and to determine the refractive index of the glass of the prism, using the graph
18. To compare the refractive indices of two transparent liquids, using a concave mirror and a single pin
19. To set up an astronomical telescope and find its magnifying power

Section-C

20. To verify the law of combination (series and parallel) of resistances, using ammeter and voltmeter and coils of known resistances.
21. To compare the e.m.f's of two given primary cells by using a potentiometer
22. To determine the specific resistance of the material of a given wire, using a metre bridge
23. To determine the internal resistance of a primary cell using a potentiometer
24. To determine the inductance and resistance of a given coil (inductor) using a suitable series resistance and an AC voltmeter
25. To study decay of current in a R.C. circuit while charging the capacitor, using a galvanometer and find the time constant of the circuit
26. To draw the characteristic curve of a forward biased pn junction diode and to determine the static and dynamic resistance of the diode
27. To draw the characteristics of an nnp transistor in common emitter mode. From the characteristics, find out (i) the current gain (β) of the transistor and (ii) the voltage gain A_1 with a load resistance of $1\text{ k}\Omega$.
28. To draw the lines of force due to a bar magnet, keeping (i) N-pole pointing to north (ii) N-pole pointing to South. Locate the neutral points.
29. To determine the internal resistance of a moving coil galvanometer by half deflection method and to convert it into a voltmeter of a given range, say (0-3V), and verify it.



Senior Secondary Level CHEMISTRY (313) Practical Examination

1. Objectives

The purpose of teaching Chemistry at the Senior Secondary level is not only to acquaint the learner with chemical terms, facts, concepts and principles but also to prepare him/her to understand these concepts by doing practicals related to them. Self experience not only eliminates doubts and misconceptions in one's mind but also generates an interest in the subject. The present practical course, thus, considers practical work as an integral part of the Chemistry curriculum at the Senior Secondary stage. This guideline covers the procedure to be adopted by the NIOS learners for dealing with the practical examination. It focuses on developing practical skills and prepares learners for cultivating a scientific attitude and a scientific temper. The purpose of introducing Formative and Summative Assessments in Practical PCP is to encourage learners' involvement and active participation in PCP classes as well as continuous assessment which leads to learning.

2. Implementation:

There are 17 practicals listed in the Practical Manual of the Senior Secondary Course in Chemistry (313). These activities are to be conducted in 5 PCP sessions, at the study centre. These will be assessed through Formative (Continuous) Assessment. The sixth PCP is reserved for the final examination that will be assessed through Summative (Final) Assessment at the Study Centre during the public examination. The dates for the practical examination (Final) will be notified by NIOS in the examination date sheet. 50% weightage is for each of Formative (Continuous) and Summative (Final) Assessments. The maximum marks for Practical in Chemistry is 20. The *distribution of practicals* in 05 PCPs is as follows:

First PCP Practical:

- (i) Orientation of the learners about the distribution of activities to be performed and allocation of Marks for both the Formative (Continuous) and Summative (Final) Assessments
- (ii) Orientation of learners about the handling of scientific equipment, apparatus, chemicals and safety measures in the chemistry laboratory
- (iii) Learners have to perform this experiment (Sl. No. 1 of Chemistry Practical Manual) as:

(i) Acquaintance with Chemistry laboratory and basic laboratory techniques

- Cutting, bending and boring of glass tubes
- Filtration
- Distillation
- Crystallisation
- Calibration, cleaning of glass apparatus and use of burner
- Measurement of volume, length, mass and density

Second PCP Practical:

- (i) Orientation of learners about the scientific principles and techniques related to preparation, interpretation of the data and conclusions, pH and electrochemistry
- (ii) Learners have to choose **any two activities** to be performed out of the following activities. (Sl. No. Practical 2 to 9 of Practical Manual) as:

Characterization of Chemical substances

- Determination of melting point of a solid organic compound of low melting point (below 100°C) by glass capillary tube method (Paraffin oil may be used as bath).

- **Preparation of dilute solutions**

Preparation of dilute solutions of known concentration of sulphuric acid, hydrochloric acid and nitric acid from their stock solution

- **Experiment related to pH change**

Determination of pH of following substances by using a universal indicator solution or pH papers

1. (i). Salt solution (ii) Acids and bases of different dilutions (iii) Vegetable and fruit juices
2. Study of pH change by common-ion effect in case of weak acids and weak bases by above method (Specific examples of CH_3COOH and CH_3COONa ; and NH_4OH and NH_4Cl may be taken.)

- **Surface Chemistry**

Preparation of lyophilic and lyophobic sol

1. Lyophilic sol - starch.
2. Lyophobic sol - aluminium hydroxide and ferric hydroxide

- **Electrochemistry**

Determination of Variation of cell potential in $\text{Zn}/\text{Zn}^{2+}||\text{Cu}^{2+}/\text{Cu}$ with change in concentration of electrolytes (CuSO_4 or ZnSO_4) at room temperature

- **Thermo Chemistry**

Any one of the following experiments

1. To determine the enthalpy of dissolution of copper sulphate or potassium nitrate
2. To determine the enthalpy of neutralization of strong acid (HCl) with strong base (NaOH)

- **Chemical Equilibrium**

1. Study of the shift in equilibrium of the reaction between ferric ions and thiocyanate ions by increasing/decreasing the concentration of these ions

- **Chemical Kinetics**

1. Study of the effect of concentration on the rate of reaction between sodium thiosulphate and hydrochloric acid
2. Study of the effect of temperature on the rate of reaction between sodium thiosulphate and hydrochloric acid

Third PCP Practical:

- i. Orientation of learners about the **Preparation of Inorganic and Organic Compounds Chromatography, Detection of Elements, Characteristic Tests for carbohydrates, fats and proteins and their detection**
- ii. Learners have to choose **any two activities** to be performed. (S. No. practical 10 to 14 of Practical Manual) as:

- **Preparation of Inorganic Compounds**

- a) Preparation of double salt of ferrous ammonium sulphate or potash alum
- b) Preparation of potassium ferric oxalate ferric oxalate III

- **Preparation of Organic Compounds**

Preparation of any one of the following compounds

1. Acetanilide
2. Iodoform

- **Chromatography**

Separation of coloured substances by paper chromatography and the comparison of their R_f values for a mixture of red and blue ink or a black ink

OR

Separation of coloured substances by paper chromatography and the comparison of their R_f values for juice of a flower or grass

- **Detection of Elements**

Detection of nitrogen, sulphur, chlorine, bromine and iodine in an organic compound (combinations of halogens to be avoided). Not more than two of the above elements should be present in the given organic compound.

- **Characteristic Tests for carbohydrates, fats and proteins and their detection**

Study of simple reactions of carbohydrates, fats and proteins in pure form and detection of their presence in given food stuffs

Fourth PCP Practical:

- (i) Orientation of learners about the concept of Redox titration
- (ii) Learners have to perform **any two** experiments from the following experiments. (Sl. No. practical 15 , Practical Manual) as:

- **Volumetric Analysis (Quantitative analysis)**

1. To find out the Molarity of given NaOH solution by titrating against standard solution of oxalic acid. Both the solutions to be provided.
2. To find out the Molarity and strength of given potassium permanganate solution by titrating against M/50 Mohr's salt (Ferrous ammonium sulphate) solution. Both the solutions to be provided
3. To find out the Molarity and strength of given potassium permanganate solution by titrating against M/10 oxalic acid solution. Both the solutions to be provided

Fifth PCP Practical:

- (i) Orientation of learners about the concept of **Qualitative Analysis and Tests for the functional groups present in organic compounds**
- (ii) Learners have to perform **two practicals** from the given practical. (S. No. Exercises 16 and 17 of Practical Manual) as:

- **Qualitative Analysis**

Elementary qualitative analysis of a salt involving detection of one cationic and one anionic species from the following groups. (Salts insoluble in hydrochloric acid excluded)

Cations:

Pb^{2+} , Cu^{2+} , As^{3+} , Al^{3+} , Fe^{3+} , Mn^{2+} , Ni^{2+} , Zn^{2+} , Co^{2+} , Ca^{2+} , Sr^{2+} , Ba^{2+} , Mg^{2+} , NH_4^+

Anions:

CO_3^{2-} , S^{2-} , SO_3^{2-} , SO_4^{2-} , NO_2^- , NO_3^- , Cl^- , Br^- , I^- , PO_4^{3-} , $\text{C}_2\text{O}_4^{2-}$, CH_3COO^-

- **Tests for the functional groups present in organic compounds**

Test of functional groups present in given unknown organic compounds

- (i) Test of unsaturation
- (ii) Test for carboxylic, phenolic, aldehydic and ketonic groups

3. Scheme of Practical Examination:

The following scheme of practical examinations is to be followed, as per the details given below:

- ◆ The conduct of practical examinations is mainly linked with practical PCP. There are 06 practical sessions which are made compulsory.
- ◆ The initial five (05) PCP practical sessions have to be assessed through Formative (Continuous) Assessment and will be utilized for learning.
- ◆ The final (6th PCP) practical session will be utilized for Summative (Final) Assessment for practical examination.
- ◆ A weightage of 50% of the marks will be awarded for Formative (05 practical classes) Assessment and 50% marks for the 6th practical class for Summative Assessment.

VII. Marks Distribution in Formative Assessment (05 PCP Sessions):

S. No.	Criteria for Assessment	Marks	<u>Remarks</u>
1.	Regular Participation in 05 PCP Classes	2	The five boxes under Formative Assessment in the award list will be filled up based on these 05 criteria.
2.	Activities Performed in 05 PCP Classes	2	
3.	Practical Record maintained in 05 PCP Classes	2	
4.	Use of practical instruments/equipment	2	
5.	Participation with Peer-Group and Tutor	2	
Total		10	

VIII. Marks Distribution in Summative Assessment (6th Final PCP Class):

S. No.	Criteria for Assessment	Marks	<u>Remarks</u>
1.	Assessment of activity performed (Two activities out of given three activities)	$2 \times 3\frac{1}{2} = 7$	Time of 3 hours will be allowed for the final examination.
2.	Viva-Voce based on the activities	3	
Total		10	

Note: The total (Formative and Summative Assessment) weightage is 20 marks. In the award list, the marks obtained by the learner, both in Formative and Summative Assessments are to be mentioned clearly and the final figure is the sum of the marks of Formative and Summative Assessments.

3. Preparations for PCP Practical Sessions:

- (i) The Centre Superintendent and Tutor must read the instructions mentioned in the Guidelines for practical PCPs.
- (ii) Check and arrange the materials, tools, equipment etc. that will be needed in the Practical PCP sessions in advance.
- (iii) Learners are informed about the schedule of Practical PCP sessions. Practicals may be arranged in groups of learners.
- (iv) The attendance sheet must be properly maintained in each Practical PCP class.
- (v) The award list must be filled up, as per the given assessment criteria.

- (vi) The techniques of group work may be followed in Practical PCP sessions.
- (vii) Learner shall be asked to bring the practical record book in each class. Each learner is expected to maintain it, as per the instructions given in the practical manual.

4. Precautions (DOs and DON'Ts)

Discuss the following points with the learners, regarding preparing the practical record book:

- (i) Throughout the practical note book, the learners should follow the same style. Ask them to use a good fountain pen and a sharp black pencil. It is recommended that the right hand page should be written in blue ink and the left hand page with a black pencil.

The recommended style of writing is shown below:

Left hand page	Right hand page
Scale, Projections, Calculations. Graph, Diagram, Figures	Title of the Exercise, Date, Exercise No, Interpretation and Conclusion

- (ii) Each experiment should start from a new page.
- (iii) Graphs diagrams, projectors etc should be drawn neatly in a proportionate scale.
- (iv) Mistakes should be crossed out with a single line so that they can still be read; the correct statement rewritten in its place.
- (v) No page should be torn-off from the practical record book.
- (vi) Before going to take Practical Examination, get all the exercises of the Practical Record Book signed by your tutor.

4. List of Practicals:

There are 17 Practicals in the Chemistry Practical Manual. These 17 activities are distributed as:

1. Basic Laboratory Techniques

- (i) Acquaintance with Chemistry laboratory and basic laboratory techniques (cutting, bending and boring of glass tubes, sealing of apparatus, filtration, distillation, crystallisation, preparation, calibration, cleaning of glass apparatus and use of burner etc.)
- (ii) Measurement of volume, length, mass and density.

2. Characterization of Chemical substances

- (i) Determination of melting point of a solid organic compound of low melting point (below 100°C) by glass capillary tube method (Paraffin oil may be used as bath).

3. Preparation of dilute solutions

- (i) Preparation of dilute solutions of known concentration of sulphuric acid, hydrochloric acid and nitric acid from their stock solution.

4. Experiment related to pH change

- (a) Determination of pH of following substances by using a universal indicator solution or pH papers.

(i) Salt solution (ii) Acids and bases of different dilutions (iii) Vegetable and fruit juices

- (b) Study of pH change by common-ion effect in case of weak acids and weak bases by above method (specific examples of CH_3COOH and CH_3COONa ; and NH_4OH and NH_4Cl may be taken).

5. Surface Chemistry

Preparation of lyophilic and lyophobic sol.

- (a) Lyophilic sol - starch.
(b) Lyophobic sol - aluminium hydroxide and ferric hydroxide.

6. Electrochemistry

Variation of cell potential in $\text{Zn}/\text{Zn}^{2+}||\text{Cu}^{2+}/\text{Cu}$ with change in concentration of electrolytes (CuSO_4 or ZnSO_4) at room temperature.

7. Thermo Chemistry

Any one of the following experiments

- (i) To determine the enthalpy of dissolution of copper sulphate or potassium nitrate.
(ii) To determine the enthalpy of neutralization of strong acid (HCl) with strong base (NaOH)

8. Chemical Equilibrium

Study of the shift in equilibrium of the reaction between ferric ions and thiocyanate ions by increasing/decreasing the concentration of these ions.

9. Chemical Kinetics

- (a) Study of the effect of concentration on the rate of reaction between sodium thiosulphate and hydrochloric acid.
(b) Study of the effect of temperature on the rate of reaction between sodium thiosulphate and hydrochloric acid.

10. Preparation of Inorganic Compounds

- (i) Preparation of double salt of ferrous ammonium sulphate or potash alum.
(ii) Preparation of potassium ferric oxalate ferric oxalate III.

11. Preparation of Organic Compounds

Preparation of any one of the following compounds

- (i) Acetanilide
(ii) Iodoform.

12. Chromatography

- (a) Separation of coloured substances by paper chromatography and comparison of their R_f values for a mixture of red and blue ink or a black ink.

OR

- (b) Separation of coloured substances by paper chromatography and comparison of their R_f values for juice of a flower or grass.

13. Detection of Elements

Detection of nitrogen, sulphur, chlorine, bromine and iodine in an organic compound (combinations of halogens to be avoided). Not more than two of the above elements should be present in the given organic compound.

14. Characteristic Tests for carbohydrates; fats and proteins and their detection

Study of simple reactions of carbohydrates fats and proteins in pure form and detection of their presence in given food stuffs.

15. Volumetric Analysis (Quantitative analysis)

- (a) preparation of solution of oxalic acid and ferrous ammonium sulphate of known molarity by weighing (non-evaluative). Use of chemical balance to be demonstrated.
- (b) A study of acid-base titration (single titration only)
- (i) To find out the Molarity of given NaOH solution by titrating against standard solution of oxalic acid. Both the solutions to be provided
- (c) A study of redox titrations (single titration only)
- (i) To find out the Molarity and strength of given potassium permanganate solution by titrating against M/50 Mohr's salt (Ferrous ammonium sulphate) solution. Both the solutions to be provided.
- (ii) To find out the Molarity and strength of given potassium permanganate solution by titrating against M/10 oxalic acid solution. Both the solutions to be provided.

16. Qualitative Analysis

Elementary qualitative analysis of a salt involving detection of one cationic and one anionic species from the following groups. (Salts insoluble in hydrochloric acid excluded).

Cations:

Pb^{2+} , Cu^{2+} , As^{3+} , Al^{3+} , Fe^{3+} , Mn^{2+} , Ni^{2+} , Zn^{2+} , Co^{2+} , Ca^{2+} , Sr^{2+} , Ba^{2+} , Mg^{2+} , NH_4^+

Anions:

CO_3^{2-} , S^{2-} , SO_3^{2-} , SO_4^{2-} , NO_2^- , NO_3^- , Cl^- , Br^- , I^- , PO_4^{3-} , $\text{C}_2\text{O}_4^{2-}$, CH_3COO^-

17. Tests for the functional groups present in organic compounds

Test of functional groups present in given unknown organic compounds

- (i) Test of unsaturation
- (ii) Test for carboxylic, phenolic, aldehydic and ketonic groups.



Senior Secondary Level **BIOLOGY (314)** Practical Examination

1. Objectives

As in any other science subject practicals have an important role in Biology too. The purpose of teaching Biology is not only to acquaint the learner with biological terms, facts, concepts and principles but also to prepare him/her to understand these concepts by doing exercises related to them. Self experience not only eliminates doubts and misconceptions in one's mind but also generates an interest in the subject. The present practical course, thus, considers practical work as an integral part of the Biology curriculum at the Senior Secondary stage. This guideline covers the procedure to be adopted by the NIOS learners for dealing with practical examination. It focuses on developing practical skills and prepares learners for cultivating scientific attitude and scientific temper. The purpose of introducing Formative and Summative Assessments in Practical PCP is to encourage the learners' involvement and active participation in PCP classes as well as continuous assessment which leads to learning.

2. Implementation:

There are 15 exercises listed in the Practical Manual of the Senior Secondary Course in Biology (314). These activities are to be conducted in 5 PCP sessions at the study centre. These will be assessed through Formative (Continuous) Assessment. The Sixth PCP session is reserved for the final examination that will be assessed through Summative (Final) Assessment at the study centre. The dates for the practical examination (Final) will be notified by NIOS in the examination date sheet. 50% weightage is for each of Formative (Continuous) and Summative (Final) Assessments. The maximum mark for Practical in Biology is 20. The *distribution of activities in 05 PCPs* is as follows:

First PCP Practical:

- (i) Orientation of the learners about the distribution of activities to be performed and allocation of Marks for both the Formative (Continuous) and Summative (Final) Assessments
- (ii) Orientation of learners about the handling of scientific equipment and apparatus, chemicals etc.
- (iii) Learners have to choose **any two activities** to be performed from the following experiments (S. No. Exercise 2 of Practical Manual) as:

- ◆ Some common instruments
- ◆ Preparation of temporary mount of onion peel to observe and study epidermal cells
- ◆ Preparation of temporary stained mount of human cheek cells
- ◆ Preparation of temporary mount of leaf epidermis to study the structure of stomata

Second PCP Practical:

- (i) Orientation of the learners about mounting of slides and scientific principles
- (ii) Learners have to choose **any two activities** to be performed out of the following activities (S. No. Exercise 3 to 5 of Practical Manual) as:
 - Study of morphological modifications of plant parts like root, stem and leaf
 - To study the T.S. of dicot and monocot stems and roots from permanent slide
 - Study of the microscopic anatomy (histology) of mammalian tissues and organs
 - One project on one of the exercises mentioned below for project work, completely recorded and signed by tutor, to be submitted at the commencement of SA at the 6th PCP
 - Project Exercises: (1) to study the special adaptive features in some plants and animals
 - (2) (a) To study the physical properties of different soil samples
 - (b) To study the water holding capacity of different soil samples

Third PCP Practical:

- i. Orientation of the learners about the interpretation of the data and conclusions of experiments
- ii. Learners have to choose **any two activities** to be performed (S. No. Exercise 11, 12 and 8 of Practical Manual) as:
 - Demonstration of osmosis by potato osmometer
 - Determine the rate of photosynthesis in an aquatic plant (*Hydrilla* or *Elodea*)
 - To study about the action of salivary amylase on starch
 - Preparation of a slide of onion root tip for observation of stages of mitosis

Fourth PCP Practical:

- i. Orientation of the learners about the concept of striated muscle fibers in a cockroach and different features of animals and the structure and the different parts of a flower
- ii. Learners have to choose **any two activities** to be performed from the following experiments (S. No.6 , Ex.2.5 and 7 of Practical Manual) as:
 - * To study the structure and function of different parts of flowers (*China rose and Petunia*)
 - * Temporary stained preparation and study of striated muscle fibers in a cockroach
 - * Study of animal specimens and their classification to identify the characteristic features of sponge, earthworm, butterfly, apple snail, starfish, dogfish (*Scoliodon*) bonyfish (Rohu), toad, house lizard, pigeon and bat.

Fifth PCP Practical:

- i. Orientation of learners about the concept of the adaptive features of animals and xylem and phloem of plants
- ii. Learners have to choose **any two activities** to be performed from the given exercises. (S. No. Exercises 2.4, 9 and 14 of Practical Manual) as:
 - To study the special adaptive features in some plants and animals
 - Preparation and study of xylem and phloem from *cucurbita* stem
 - To demonstrate the release of CO₂ during germination of seeds

3. Scheme of Practical Examination:

The following scheme of practical examinations to be followed as per the details given below:

- ◆ The conduct of practical examinations is mainly linked with practical PCP. There are 06 practical sessions which are made compulsory.
- ◆ The initial five (05) PCP practical sessions have to be assessed through Formative (Continuous) Assessment and will be utilized for learning.
- ◆ The final (6th PCP) practical session will be utilized for Summative (Final) Assessment for the practical examination.
- ◆ A weightage of 50% of the marks will be awarded for Formative (05 practical classes) Assessment and 50% marks for the 6th practical class for Summative Assessment.

I. Marks Distribution in Formative Assessment (05 PCP Sessions):

S. No.	Criteria for Assessment	Marks	<u>Remarks</u>
1.	Regular Participation in 05 PCP Classes	2	The five boxes under Formative Assessment in the award list will be filled up based on these 05 criteria.
2.	Activities Performed in 05 PCP Classes	2	
3.	Practical Record maintained in 05 PCP Classes	2	
4.	Use of practical instruments/equipment	2	
5.	Participation with Peer-Group and Tutor	2	
Total		10	

II. Marks Distribution in Summative Assessment (6th Final PCP Class):

S. No.	Criteria for Assessment	Marks	<u>Remarks</u>
1.	Assessment of activity performed (Two activities out of given three activities)	2 x 3½ = 7	Time of 3 hours will be allowed for the final examination.
2.	Viva-Voce based on the activities	3	
Total		10	

Note: The total (Formative and Summative Assessments) weightage is 20 marks. In the award list, the marks obtained by the learner, both in Formative and Summative Assessments are to be mentioned clearly and the final figure is the sum of the marks of Formative and Summative Assessments.

4. Preparations for PCP Practical Sessions:

- (i) The Centre Superintendent and Tutor must read the instructions mentioned in the Guidelines for practical PCPs.
- (ii) Check and arrange the materials, tools, equipment etc that will be needed in the Practical PCP sessions in advance.
- (iii) Learners are informed about the schedule of Practical PCP sessions. Practicals may be arranged in groups of learners.
- (iv) The attendance sheet must be properly maintained in each Practical PCP class.
- (v) The award list must be filled up, as per the given assessment criteria.
- (vi) The techniques of group work may be followed in Practical PCP sessions.
- (vii) Learners shall be asked to bring the practical record book in each class. Each learner is expected to maintain it, as per the instructions given in the practical manual.

5. Precautions (DOs and DON'Ts)

Discuss the following points with the learners regarding preparing the practical record book:

- (i) Throughout the practical note book, the learners should follow the same style. Ask them to use a good fountain pen and a sharp black pencil. It is recommended that the right hand page should be written in blue ink and the left hand page with a black pencil.

The recommended style of writing is shown below:

Left hand page	Right hand page
Scale, Projections, Calculations. Graph, Diagram, Figures	Title of the Exercise, Date, Exercise No, Interpretation and Conclusion

- (ii) Each experiment should start from a new page.
- (iii) Neat and proportionate well labeled of Diagrams should be drawn.
- (iv) Mistakes should be crossed out with a single line so that they can still be read. The correct statement should be rewritten in its place.
- (v) No page should be torn-off from the practical record book.
- (vi) Before going to take the Practical Examination get all the exercises of Practical Record Book signed by the tutor.

6. List of Activities:

There are 15 exercises in the Biology Practical Manual. These 15 activities are distributed under three sections as:

Exercise 1: Some Common Instruments

Exercise 2

- 2.1 Preparation of temporary mount of onion peel to observe and study epidermal cells
- 2.2 Preparation of temporary stained mount of human cheek cells.
- 2.3 Preparation of temporary mount of leaf epidermis to study the structure of stomata.
- 2.4 Temporary stained preparation and study of striated muscle fibres in cockroach.
- 2.5 Preparation and study of xylem and phloem from *cucurbita* stem.

Exercise 3: Study of morphological modifications of plant parts like root, stem and leaf.

Exercise 4: To study the T.S. of dicot and monocot stems and roots from permanent slide.

Exercise 5: Study of the microscopic anatomy (histology) of mammalian tissues and organs

Exercise 6: To study the structure and function of different parts of flowers (*China rose and Petunia*)

Exercise 7: Study of animal specimens and their classification to identify the characteristic features of sponge, earthworm, butterfly, apple snail, starfish, dogfish (*Scoliodon*) bonyfish (Rohu), toad, house lizard, pigeon and bat.

Exercise 8: Preparation of a slide of onion root tip for observation of stages of mitosis.

Exercise 9: To study the special adapting features in some plants and animals

Exercise 10:

- (a) To study the physical properties of different soil samples
- (b) To study the water holding capacity of different soil samples

Exercise 11: Demonstration of osmosis by potato osmometer

Exercise 12: Determine the rate of photosynthesis in an aquatic plant (*Hydrilla* or *Elodea*)

Exercise 13: Study the structure and germination in gram and bean.

Exercise 14: To demonstrate the release of CO₂ during germination of seeds.

Exercise 15: To study about the action of salivary amylase on starch



Senior Secondary Level
GEOGRAPHY (316)
Practical Examination

1. Objectives:

Practical exercises are an integral part of learning geography. The experience gained during practicals help the learners in developing problem solving skills and keen interest. The learner develops the ability of using tools such as Scales Projections, Weather Maps, Graphs, Diagrams, Topographical Sheets and Statistical methods. The purpose of introducing Formative and Summative Assessment in Practical PCP sessions is to encourage learners' involvement and active participation in PCP classes as well as continuous assessment which leads to learning.

2. Implementation:

There are 15 activities listed in the Practical Manual of the Senior Secondary Course in Geography (316). These activities are to be conducted in 5 PCPs as given below, at the study centre/AI. These will be assessed through Formative (Continuous) Assessment. The Sixth PCP is reserved for final examination that will be assessed through Summative (Final) Assessment at the Study Centre. The dates for the practical examination (Final) will be notified by NIOS in the examination date sheet. 50% weightage is for each of Formative (Continuous) and Summative (Final) Assessments. The maximum mark for Practical in Geography is 20. The *distribution of* activities in 05 PCPs is as follows:

First PCP Practical:

- (i) Orientation of the learners about distribution of activities to be performed and allocation of Marks for both the Formative (Continuous) and Summative (Final) assessment.
- (ii) Learners may be introduced to the practical syllabus and pattern of Practical Examination in Geography at Senior Secondary level.
- (iii) In this PCP, the learners may be given a brief idea about construction of Linear Scale, Latitude and Longitude, Map Projections, interpretation of Topographical Sheets, study of Weather Maps and representation of data.
- (iv) Importance of maps, classification of maps according to scale. The construction of simple Linear Scale will also be discussed in this PCP.
- (v) The learners are required to do two exercises given at the end of lesson no.1 in their Practical record book.

Second PCP Practical:

- (i) Orientation of learners about the merits and demerits of Globe and Maps
- (ii) The learners will also be taught about the Map Projections. Stress will be laid on the construction of Cylindrical Equal Area Projection, Mercator's Projection and Simple Conical Projection with One Standard Parallel.
- (iii) The learners will be asked to do three exercises given in the practical manual at the end of the lesson no. 2, 'Map Projection', in their Practical record book.

Third PCP Practical:

- (i) The learner will be introduced to the Topographical Maps, identification of relief features on a map through contours and interpretation of Toposheets.
- (ii) At the end of the PCP, the learners will be asked to do the exercises given at the end of lesson no. 3.

Fourth PCP Practical:

- (i) Orientation of learners about concept and Weather instruments in the interpretation of Weather Maps.
- (ii) Learners have to choose five exercises given at the end of lesson no. 4 of Practical Manual.

Fifth PCP Practical:

- (i) Orientation of learners about data interpretation and statistical diagrams
- (ii) The learners will learn about Arithmetic Mean, Median, Mode and Percentile.
- (iii) The learners will also learn about Line Graph, Bar Diagram, Pie Diagram and Star Diagram.
- (iv) The learners will also gain knowledge about the construction of Dot Maps and Choropleth Maps.
- (v) The learners will do three exercises given at the end of lesson no.5 in their practical record book.
- (vi) The learner will also be told about the type of Questions asked in the final examination of Geography Practical.

3. Scheme of Practical Examination:

The following scheme of practical examinations is to be followed as per the details given below:

- ❖ The conduct of practical examinations is mainly linked with practical PCP. There are 06 practical sessions which are made compulsory.
- ❖ The initial five (05) PCP practicals have to be assessed through Formative Assessment (Continuous) and will be utilized for learning.
- ❖ The final (6th PCP) practical will be utilized for Summative (Final) Assessment for practical examination.
- ❖ A weightage of 50% of the marks will be awarded for Formative Assessment (05 practical classes) and 50% marks for the 6th practical class for Summative Assessment.

I. Marks Distribution in Formative Assessment (05 PCP Sessions):

S. No.	Criteria for Assessment	Marks	Remarks
1.	Regular Participation in 05 PCP Classes	2	The five boxes under Formative Assessment in the award list will be filled up based on these 05 criteria.
2.	Activities Performed in 05 PCP Classes	2	
3.	Practical Record maintained in 05 PCP Classes	2	
4.	Use of practical instruments/equipment	2	
5.	Participation with Peer-Group and Tutor	2	
Total		10	

II. Marks Distribution in Summative Assessment (6th Final PCP Class):

S. No.	Criteria for Assessment	Marks	Remarks
1.	Assessment of activity performed (Two activities out of given three activities)	2 x 3½ = 7	Time of 3 hours will be allowed for the final examination.
2.	Viva-Voce based on the activities	3	
Total		10	

Note: The total (Formative and Summative Assessment) weightage is 20 marks. In the award list, the marks obtained by the learner, both in Formative and Summative Assessment are to be mentioned clearly and the final figure is the sum of the marks of Formative and Summative Assessment.

4. Preparations for PCP Practical Sessions:

- (i) The Centre Superintendent and Tutor must read the instructions mentioned in the Guidelines for practical PCPs.
- (ii) Check and arrange the materials, tools, equipment etc. that are needed in the Practical PCP sessions in advance.
- (iii) Learners are informed about the schedule of Practical PCP sessions. Practicals may be arranged in groups of learners.
- (iv) The attendance sheet must be properly maintained in each Practical PCP class.
- (v) The award list must be filled up as per the given assessment criteria.
- (vi) The techniques of group work may be followed in Practical PCP sessions.
- (vii) Learners shall be asked to bring the practical record book in each class. Each learner is expected to maintain it as per the instructions given in the practical manual.

5. Precautions (DOs and DON'Ts)

Discuss the following points with learners regarding preparing the practical record book:

- (i) Throughout the practical note book the learners should follow the same style. Ask them to use a good fountain pen and a sharp black pencil. It is recommended that the right hand page should be written in blue ink and the left hand page with a black pencil.

(ii) The recommended style of writing is shown below:

Left hand page

Scale, Projections, Calculations,
Graph, Diagram,
Figures,

Right hand page

Title of the Exercise, Date

Exercise No.

Interpretation and conclusion

- (i) Each experiment should start from a new page.
- (ii) Diagrams, Graphs, Maps, Projections should be drawn neatly and with proportionate scale.
- (iii) Mistakes should be crossed out with a single line so that they can still be read. The correct statement should be rewritten in its place.
- (iv) No page should be torn-off from the practical record book.
- (v) Before going to take Practical Examination get all the exercises of the Practical Record Book signed by the tutor.

6. List of Activities:

There are 15 activities in the Geography Practical Manual. These 15 activities are distributed under five sections as:

6.1 Section-A (Maps: Concepts and Skills)

1. A car running at a speed of 45 Kilometres per hour to reach Ghaziabad from Delhi in 20 minutes. If the distance between Delhi and Ghaziabad is shown on a map by a distance of 2.5 cms draw a graphic scale for this map and calculate the R.F. also.
2. Construct a graphic scale on a R.F. of 1:40,000 so that one can read kilometres and metres directly on it.

Section-B (Maps Projections)

1. Prepare a graticule for a Cylindrical Equal-Area projection for the world on the scale of 1:160,000,000 with the interval of 15°.
2. Draw a Mercator Projection for the world on the scale of 1:2,50,000,000 at an interval of 15°.
3. Construct graticules for an area stretching between 30° N to 70° N and 40°E to 30° W on a simple conical projection with one standard parallel with a scale of 1:2,00,000,000 taking on interval of 10°.
4. Draw a Zenithal Equi-Distant Projection for the north hemisphere on the scale of 1 :2,00,000,000 at the interval of 15°.

Section-C (Interpretation of Topographic Maps)

1. Interpret of a topographical map under the following heads:
 - (a) landforms (b) lines of communication (c) Settlements

Note: Study Centres/AIs are advised to get Xeroxed copies of these maps provided in the practical manual.

Section-D (Study of Weather Maps)

1. Study the weather map of any day and answer the following questions:
 - ❖ Name the two areas of high pressure

- ❖ Name the two areas of low pressure
 - ❖ Which area experienced misty conditions?
 - ❖ Name an area which received rainfall.
2. Show the following pressure systems with the help of isobars:
 - (b) Tropical Cyclone (b) Temperate Cyclone
 3. Recognise and name the following isobaric systems:

Note: Study Centres/AIs are advised to get Xeroxed copies of these figures provided in the practical manual.

4. Study the weather map and find the general wind direction, cloud conditions and sea conditions.

Note: Study Centres/AIs are advised to get Xeroxed copies of the map provided in the practical manual.

5. The map which shows, different isobaric systems-depression, tropical Cyclones, anticyclone, wedge, trough and a col. recognise these pressure systems and write below the map their appropriate names.

Note: Study Centres/AIs are advised to get Xeroxed copies of these maps provided in the practical manual.

Section-E (Data Interpretation and Statistical Diagrams)

1. Draw a line graph showing growth of population in India from 1901-2011.

Years	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001	2011
Population (in million)	23.8	25.2	25.1	27.9	31.9	36.1	43.9	54.8	68.3	84.6	102.8	121.02

2. Construct a bar diagram showing Annual Rainfall of any station.
3. Prepare a star diagram to represent the following data:

Direction	No. of days the wind is blowing
N	45
NE	110
E	25
SE	27
S	23
SW	15
W	90
NW	20
Calm days	10
Total	365



Senior Secondary Level **HOME SCIENCE (321)** Practical Examination

1. Objectives:

Home Science is a practical oriented subject. It encompasses different modules like Our Food, Resources Management, Human Development, Textile and Clothing at the senior secondary level. One optional module, either housekeeping or creative hand embroidery, is also available. The practical class through PCP (personal contact programme) in Home Science at the senior secondary level will enable the learner better understand the subject and also prepare him/her for some job or entrepreneurship. The purpose of introducing Formative and Summative Assessments in Practical PCP is to encourage the learner's involvement and active participation in PCP classes. Participation in 6 PCPs (5+1) by all learners is mandatory.

2. Implementation:

There are 18 practicals in the Lab manual, Book 3 of Home Science (312). These activities will be conducted in 5 PCPs at the Study Centre. The sixth PCP is reserved for the final practical examination. These will be assessed through Formative (Continuous) Assessment. The **Sixth PCP** is reserved for the final examination that will be assessed through Summative (Final) Assessment at the Study Centre. The dates for the practical examination (Final) will be notified by NIOS in the examination date sheet. 50% weightage is for each of Formative (Continuous) and Summative (Final) Assessments. The maximum marks for Practical in Home Science is 20 (10+10). The distribution of activities in 05 PCPs is as follows:

First PCP Practical:

- (i) Orientation of the learners about the distribution of activities to be performed and allocation of Marks for both the Formative (Continuous) and Summative (Final) Assessments
- (ii) Orientation of the learners about the other practicals so that the learners can be prepared to bring the raw material needed in the class (e.g. paper for weaving, material to make a household item etc.).
- (iii) Orientation of the learners about the choice of the optional modules, namely House- keeping and Creative Hand Embroidery

- (iv) Orientation of the learners about the activities to be done in the class for the 2nd module, “**Our Food**”, i.e. preparation of selected food products: ingredients, weights, procedure of making and storing the product (practical no. 1-3 in the lab manual) as: (Any one preparation from each category can be chosen according to availability in the local area)
- Preservation of seasonal foods
 - Preparation of dishes at home, using methods of food enrichment and their evaluation
 - Categorization of different food items available at home into various food groups

Second PCP Practical:

- (i) Orientation of the learners about the activities in 3rd module, “**Resource Management**” i.e. how to identify sources of pollution, type of work and responsibilities of different family members and making of a monthly expenditure plan (practical no. 3-6 in the lab manual) as:
- Identification of sources of pollution and suggestions of remedial measures
 - Identification of difference in work and responsibilities of one’s family members, according to age and gender
 - Record and evaluation of a family’s expenditure for a month

Third PCP Practical:

- (i) Orientation of the learners about the activities in the 4th module “**Human Development**” i.e. how to observe children and take the interview of an adolescent (practical no. 7-9 in the lab manual) as:
- Observation of language development in children- 1.5 to 3 years old
 - Observation of social behaviour and expression of fear and anger in children 1-2 years old
 - Interview of a teenager regarding their physical changes and social & emotional problems faced during adolescence

Fourth PCP Practical:

- (i) Orientation of the learners about the activities in the 5th module, “**Textile and Clothing**”, such as identification of fibers by different methods, ways of making weaves in paper and techniques of stain removal (practical no. 10-12 in the lab manual) as:
- Identification of fibers by visual and burning test
 - Creating plain and twill weaves using strips of paper
 - Removal of stains of curry, blood, mud, ink and tea/ coffee

Fifth PCP Practical:

- (i) Division of the learners according to the optional subject choice, i.e. Housekeeping Module and Creative Hand Embroidery, in Module 6A and Module 6B

- (ii) Orientation of two learner groups individually about activities to be done in each module (practical no. 13-15 for Housekeeping and practical no. 16-18 for Creative Hand Embroidery in the lab manual) as:

Module 6A: Housekeeping

- Changing a fuse and plug of an electric iron (Check all possible safety measures)
- Care and maintenance of wooden surfaces, floors, brass, aluminium, silver and plastic articles
- Using waste material to prepare useful household items

Module 6B: Creative Hand Embroidery

- Preparation of a colour wheel
- Using basic embroidery stitches to prepare a sampler
- Enlarging and reducing motifs

3. Scheme of Practical Examination:

The scheme of practical examinations is to be followed, as per the details given below:

- ◆ The conduct of practical examinations is mainly linked with practical PCPs. There are total 06 practical sessions which are made compulsory.
- ◆ The initial five (05) PCP practicals have to be assessed through Formative Assessment (Continuous) and will be utilized for learning.
- ◆ The final (6th PCP) practicals will be utilized for Summative (Final) Assessment for practical examination.
- ◆ A weightage of 50% of the marks will be awarded for Formative (05 practical classes) Assessment and 50% marks for the 6th practical class for Summative Assessment.

A. Marks Distribution in Formative Assessment (05 PCP Classes):

S. No.	Criteria for Assessment	Marks	<u>Remarks</u>
1.	Regular Participation in 05 PCP Classes	2	The five boxes under Formative Assessment in the award list will be filled up based on these 05 criteria.
2.	Activities Performed in 05 PCP Classes	2	
3.	Practical Record maintained in 05 PCP Classes	2	
4.	Observation (in given practical)	2	
5.	Observation (Group participation with peers)	2	
Total		10	

B. Marks Distribution in Summative Assessment (6th Final PCP Class):

S. No.	Criteria for Assessment	Marks	Remarks
1.	Assessment of activity performed Two activities out of given three activities (Each activity should be from different modules)	$2 \times 3\frac{1}{2} = 7$	Time of 2½ hours will be allowed for the final examination.
2.	Viva-Voce based on the activities	3	
Total		10	

Note: The total (Formative and Summative Assessment) weightage is 20 marks. In the award slip, the marks obtained by the learner both in Formative and Summative Assessments are to be mentioned clearly and the final figure is the sum of the mark of Formative and Summative Assessments.

4. Preparations and precautions for PCP Practical Sessions:

- (i) The Centre Superintendent and the Tutor must read the instructions mentioned in the Guidelines for practical PCPs.
- (ii) The attendance sheet must be properly maintained in each Practical PCP class.
- (iii) The award list must be filled up as per the given assessment criteria.
- (iv) The Tutor as well as the learner must read the instructions given in the practical manual.
- (v) The Tutor must check and arrange the materials, tools, equipment etc. that will be needed in the Practical PCP sessions in advance.
- (vi) The techniques of group work may be followed in Practical PCP sessions. One group can do one practical and another group another practical, then turn wise.
- (vii) Wherever necessary, give them a demonstration about the practical, e.g. accurate weighing of ingredients, testing of the final stage of cooking jam, pickle etc.
- (viii) Learners are informed about the schedule of Practical PCP sessions in advance.
- (ix) Learners can be asked to bring certain material, like waste material to design an article in the class.
- (x) Learners shall be asked to bring the practical record book in each class. Each learner is expected to maintain it, as per the instructions given in the practical manual. It will be used in the final examination.
- (xi) They should be told to maintain cleanliness and follow safety measures when using fire, gas, or chemicals, etc.
- (xii) Learners should be asked to clean the articles after use.
- (xiii) Before going for Practical Examination, get all the exercises (17 practicals) of Practical Record Book signed by the tutor.

5. List of all practicals for senior secondary Home Science

CORE MODULES:

Module 2: Our Foods

1. Preservation of seasonal foods
2. Preparation of dishes at home, using methods of food enrichment and their evaluation
3. Categorization of different food items available at home into various food groups

Module 3: Resource Management

1. Identification of sources of pollution and suggestions of remedial measures
2. Identification of difference in work and responsibilities of one's family members according to age and gender
3. Record and evaluation of family's expenditure for a month

Module 4: Human Development

1. Observation of language development in children 1.5 to 3 years old
2. Observation of social behaviour and expression of fear and anger in children 1-2 years old
3. Interview of a teenager regarding their physical changes & social and emotional problems faced during adolescence

Module 5: Textile and Clothing

1. Identification of fibers by visual and burning test
2. Creating plain and twill weaves using strips of paper
3. Removal of stains of curry, blood, mud, ink and tea/ coffee

OPTIONAL MODULES:

Module 6A: Housekeeping

1. Changing a fuse and plug of an electric iron
2. Care and maintenance of wooden surfaces, floors, brass, aluminum, silver and plastic articles
3. Using waste material to prepare useful household items

Module 6B: Creative Hand Embroidery

1. Preparation of a colour wheel
2. Using basic embroidery stitches to prepare a sampler
3. Enlarging and reducing motifs



Senior Secondary Level
COMPUTER SCIENCE (330)
Practical Examination

1. Objectives:

Practicals in the form of 'Hand on' experiences form a major part of the Computer Science curriculum. The syllabus of practical in 'Computer Science' subject intends to present clear guidelines for learners and tutors for the same. The purpose of introducing Formative and Summative Assessments in Practical PCP is to encourage learners' involvement and active participation in PCP classes as well as continuous assessment which leads to learning.

2. Implementation

The Computer Lab should have at least 10 – 15 working computers of configuration compatible to the needs of syllabus. In all, the computers, the software Operating system, C++ compiler, and Internet connection must be installed. One working Network printer should be there in the lab.

The practical activities are to be conducted in 5 PCPs, as given below, at the study centre. These will be assessed through Formative (Continuous) Assessment. The Sixth PCP is reserved for final examination that will be assessed through Summative (Final) Assessment at the Study Centre. The dates for the practical examination (Final) will be notified by NIOS in the examination date sheet. 50% weightage is for each of Formative (Continuous) and Summative (Final) Assessments. The maximum mark for Practical in Computer Science is 40. The *distribution of* activities in 05 PCPs is as follows:

First PCP Practical:

Orientation of the learners about the distribution of activities to be performed and allocation of Marks for both the Formative (Continuous) and Summative (Final) Assessment

1. Write a program to input the values of Principal, Rate, and Time and calculate Simple Interest.
2. Write a program to input the unit price of an item and the quantity of item to be bought. Then, calculate the total price.
3. Write a program to convert temperature from Fahrenheit to Celsius.

Second PCP Practical:

1. Write a program to input two numbers and swap them using a third variable or swap them without using a third variable.
2. Write a program to input a character and check whether it is a letter of the alphabet, or a digit, or some other character.
3. Write a program to input a year (e.g., 1994) and check whether it is a leap year.

Third PCP Practical:

- Write a program to input a character. If the character is a lowercase letter, then display the corresponding upper case letter and vice-versa. If the character is not a letter, then display the character as it is.
- Write a program to input 10 numbers and find their sum and average.
- Write a program to input a number. If the number is negative, then again input the number. Keep on doing so until the user enters a non-negative number.

Fourth PCP Practical:

1. An Armstrong number is a number the sum of the cubes of whose digits is equal to the number itself. An example of an Armstrong number is 153 ($1^3+5^3+3^3 = 153$).

Write a program to input a number and find out whether it is an Armstrong number.

2. Write a program to input a number n and display factorials of all the numbers from 1 to n, using loop.
3. Write a program to input a string and then display this string in reverse order.

Fifth PCP Practical:

1. Write a program that reads a list of numbers from the user and places them in an array of type float. Once the numbers are stored in the array, the program should find their average and print it along with the list of numbers. Use pointer notation, wherever possible.
2. Write a menu driven program in C++ to perform the following functions on a binary file “BOOK.DAT” containing objects of the following class:

```
class Book
{
    int BookNo;
    char Book_name[20];
public:
    // function to enter book details
    void enterdetails();
    //function to display Book details
    void showdetails();
    //function to return Book_no
    int Rbook_no() {return Book_no;}
    //function to return Book_name
    int Rbook_name() {return Book_name;}
};
```

- i. Append Records
- ii. Modify a record for a given book no.
- iii. Delete a record with a given book no.

- iv. Search for a record with a given Book name
- v. Display a sorted list of records (sort on Book No.)

3. Scheme of Practical Examination:

The following scheme of practical examinations is to be followed, as per the details given below:

- ❖ The conduct of practical examinations is mainly linked with practical PCP. There are 06 practical sessions which are made compulsory.
- ❖ The initial five (05) PCP practicals have to be assessed through Formative Assessment (Continuous) and will be utilized for learning.
- ❖ The final (6th PCP) practical will be utilized for Summative (Final) Assessment for the practical examination.
- ❖ A weightage of 50% of the marks will be awarded for Formative (05 practical classes) Assessment and 50% marks for the 6th practical classes for Summative Assessment.

I. Marks Distribution in Formative Assessment (05 PCP Sessions):

S. No.	Criteria for Assessment	Marks	Remarks
1	Regular Participation in 05 PCP Classes	5	The five boxes under Formative Assessment in the award list will be filled up based on these 04 criteria.
2	Activities Performed in 05 PCP Classes	10	
3	Practical Record maintained in 05 PCP Classes	2 ½	
4	Participation with Peer-Group and Tutor	2 ½	
Total		20	

II. Marks Distribution in Summative Assessment (6th Final PCP Class):

S. No.	Criteria for Assessment	Marks	Remarks
1.	Assessment of activity performed	15	Time of 2 hours will be allowed for the final examination.
2.	Viva-Voce based on the activities	5	
Total		20	

Note: The total (Formative and Summative Assessment) weightage is 40 marks. In the award list, the marks obtained by the learner, both in Formative and Summative Assessments, are to be mentioned clearly and the final figure is the sum of the marks of Formative and Summative Assessments.

4. Preparations for PCP Practical Sessions:

- (i) The Centre Superintendent and the Tutor must read the instructions mentioned in the Guidelines for practical PCPs.
- (ii) Check and arrange the materials, tools, equipments, etc. that are needed in the Practical PCP sessions in advance.

- (iii) Learners are informed about the schedule of Practical PCP sessions. Practicals may be arranged in groups of learners.
- (iv) The attendance sheet must be properly maintained in each Practical PCP class.
- (v) The award list must be filled up, as per the given assessment criteria.
- (vi) The techniques of group work may be followed in Practical PCP sessions.
- (vii) Learners shall be asked to bring the practical record book in each class. Each learner is expected to maintain it as per the instructions given in the practical manual.

5. Precautions (DOs and DON'Ts)

Discuss the following points with the learners regarding writing the practical record book:

- (i) Throughout the practical note book, the learners should follow the same style. Ask them to use a good fountain pen and a sharp black pencil. It is recommended that the right hand page should be written in blue ink and the left hand page with a black pencil.

The recommended style of writing is shown below:

Left hand page

Program, print out of the output screen

Right hand page

Title of the Exercise, Date,

Exercise No.

Interpretation and Conclusion

- (ii) Each experiment should start from a new page.
- (iii) Mistakes should be crossed out with a single line so that they can still be read. The correct statement should be rewritten in its place.
- (iv) No page should be torn off from the practical record book.
- (v) Before going to take the Practical Examination, get all the exercises of Practical Record Book signed by the tutor.

6. Computer Lab Rules (Do's and Don'ts)

- ❖ The computers in the lab are to be used for academic purposes only.
- ❖ Uploading or downloading software without permission is strictly prohibited
- ❖ Do not make any changes to the desktop or to the installed software.
- ❖ Playing computer games is strictly prohibited.
- ❖ Report any problem to the instructor.
- ❖ Please Logoff when you leave.

Note: Material for the practical examination will be provided by the centre superintendant at the practical examination centre, as per requirement of the activities.



Senior Secondary Level **PAINTING (332)** Practical Examination

1. Objectives:

Painting is a powerful way of self expression. This makes people more sensitive to their environment and develops a creative attitude. It helps in developing the aesthetic sense, skill and knowledge of learners. It is a medium to express their thoughts and feelings to others. The objective of this document is to provide a clear vision and concept of the subject to the learner of the course. Step wise exercises in the prescribed course curriculum will help the learner to draw and paint with original, innovative thinking. After understanding about colours, space, harmony and perspective, the learner will develop artistic skill and his/her power of observation will become stronger. The purpose of introducing Formative and Summative Assessment in Practical PCP is to encourage learners' involvement and active participation in PCP classes as well as continuous assessment which leads to learning.

2. Implementation:

There are 12 activities listed in the Practical Manual of Secondary Level Course in Painting (225). These activities are to be conducted in 5 PCPs, at the study centre. These will be assessed through Formative (Continuous) Assessment. The Sixth PCP is reserved for the final examination that will be assessed through Summative (Final) Assessment at the Study Centre. The dates for the practical examination (Final) will be notified by NIOS in the examination date sheet. 50% weightage is for each of Formative (Continuous) and Summative (Final) Assessments. The maximum mark for Practical in Painting is 70. The *distribution of* activities in 05 PCPs is as follows:

First PCP Practical

Object and Nature Study (Any object placed in front of the learners and one from the Nature drawing)

- ❖ Aim of this PCP is to focus on quality of line drawing.
- ❖ Placement of the paper (portrait or landscape), arrange and draw the given objects within the space, keeping in mind division of background, middle ground and foreground
- ❖ Measuring of objects from distance with the help of a pencil. To measure, close one of your eyes, hold a pencil at arm's length (always keep your arm straight).
- ❖ Understanding of relative study of objects and usage of negative – positive space.

The Tutor must ensure that the learner places a newsprint sheet underneath the actual drawing sheet. (To avoid transferring of any drawing board texture)

Learners are introduced to the elements of Drawing (line –strength and fluency, thick and thin lines, rhythm ,texture, shape etc.) and its importance through practice based exercises.

Second PCP Practical

Composition in Mixed Medium

Create a Painting on the given subject, keeping in mind the principles of composition such as rhythm, harmony, balance and texture and so on.

Effective communication and expression of the idea/concept/emotions to the viewer through colours, balance and perspective

Individual innovation, creativity and originality should be much encouraged and appreciated.

Topics suggested by the tutor, for example- Village scene, Busy road in city, any festival celebration, Market , Rainy season, Playing in the playground and so on.

Learners must focus on the concept of perspective introduced in the PCP.

Composition should be creative, original and different, reference is allowed but not copying.

Introducing the learners to Primary, Secondary, Cool, Warm, Complementary, and Contrast colours.

Third PCP Practical

Folk art as Motif

Introduction to folk Art.

Learners should do the Study of Colours and their preparations from locally available vegetables and minerals. They should also study different styles of folk paintings from various regions, such as Phad, Madhubani, Kalamkari , Warli, Alpana, Rangoli, Kolam etc.

Apart from the above mentioned folk art forms, learners can also study their own local regional folk art.

Select one motif from the popular folk art and repeat the motif in a 6”X6” square, using primary colours to create a new design.

Fourth PCP Practical

Human and Animal Figure Drawing

Learner should study and understand human figures from to day to day life and gradually arrange visual elements around human figures to form a painting, using different colour mediums or mixed mediums.

Effective communication and expression of the idea/concept/emotions to the viewer through colours and perspective will be appreciated.

Individual innovation, creativity and originality should also be encouraged and appreciated.

Fifth PCP Practical

Abstract Painting in colour

Create a Painting using wild imagination in colours and forms

Examiner should arrange any three objects, i.e. man made or commonly available objects and ask them to arrange the object and draw. Create illustrations that would give a sense of all the elements of a composition.

The tutor also should talk about masters and contemporary artists, artworks and their application techniques.

3. Scheme of Practical Examination:

The following scheme of practical examinations is to be followed as per the details given below:

- ❖ The conduct of practical examinations is mainly linked with practical PCP sessions and there are 06 practical sessions which are made compulsory.
- ❖ The initial five (05) PCP practicals have to be assessed through Formative (Continuous) Assessment and will be utilized for learning.
- ❖ The final (6th PCP) practical will be utilized for Summative (Final) Assessment for practical examination.
- ❖ A weightage of 50% of the marks will be awarded for Formative (05 practical classes) Assessment and 50% marks for the 6th practical classes for Summative Assessment.

I. Marks Distribution in Formative Assessment (05 PCP Sessions):

S. No.	Criteria for Assessment	Marks	<u>Remarks</u>
1.	Regular Participation in 05 PCP Classes	7	The five boxes under Formative Assessment in the award list will be filled up based on these 05 criteria.
2.	Activities Performed in 05 PCP Classes	7	
3.	Practical Record maintained in 05 PCP Classes	7	
4.	Use of practical instruments/equipment	7	
5.	Participation with Peer-Group and Tutor	7	
Total		35	

II. Marks Distribution in Summative Assessment (6th Final PCP Class):

S. No.	Criteria for Assessment	Marks	<u>Remarks</u>
1.	Assessment of activity performed (Two activities out of given 05 activities)	20	Time of 04 hours will be allowed for the final examination.
2.	Portfolio Submission	15	
Total		35	

Note: The total (Formative and Summative Assessment) weightage is 70 Marks. In the award list, the marks obtained by the learner, both in Formative and Summative Assessments, are to be mentioned clearly and the final figure is the sum of the marks of Formative and Summative Assessments.

4. Preparations for PCP Practical Sessions:

- ❖ The Centre Superintendent and Tutor must read the instructions mentioned in the Guidelines for practical PCPs.
- ❖ Check and arrange the materials, tools, equipment etc. that are needed in the Practical PCP sessions in advance.
- ❖ Learners are informed about the schedule of Practical PCP sessions.
- ❖ The attendance sheet must be properly maintained in each Practical PCP class.
- ❖ The award list must be filled up, as per the given assessment criteria.
- ❖ The techniques of group work may be followed in Practical PCP sessions.
- ❖ Learners shall be asked to bring the practical record book in each class. Each learner is expected to maintain it as per the instructions given in the practical manual.

5. Precautions (DOs and DON'Ts)

Discuss the following points with the learners regarding writing the practical record book:

- ❖ Throughout the practical note book, the learner should follow the same style. Ask them to use Half Imperial sized or (15''X22'') Cartridge sheets, Newsprint or A3 sheets, Rubber, Sharpener/mount cutter, 2b, 4b, 6b and 8B Drawing Pencils, Half Imperial sized drawing file, Colour- pencil colours, oil pastels colours, water colours, Poster colours etc. Paint Brushes (round and Flat No. 2, 4, 6, 8, and 10), Colour Palette, container for water and rag (Old piece of cotton cloth) ,etc.
- ❖ Each experiment should start from a new page.
- ❖ No page should be torn-off from the practical record book.
- ❖ All the objects should be of different sizes and shapes.
- ❖ All the objects should not be placed in a straight line.
- ❖ Tutor/ Examiner should select objects of preferably different colours.
- ❖ The objects should not be placed above or below the learners' eye level.

6. List of Activities:

There are 12 activities in the Painting Practical Manual and Portfolio (with twelve works)

6.1 Section –A (Portfolio submission)

Portfolio submits along with one sketch book or twenty pages of any available papers with Sketches in soft pencils. All the sketches should include what the learners have studied earlier like landscape, animal, birds, flowers, trees, etc. Learners need to submit portfolios with minimum twelve works, which includes dating, mounting and maintaining of each work.

Part 1 Object and Nature study (Minimum four works)

½ imperial size paper

- ❖ One in pencil line drawing
- ❖ One with Tone
- ❖ Two in colours

Part 2 Painting and Composition – (Minimum four works)

¼ imperial size papers

- ❖ Two in colours
- ❖ Two in mix media

Part 3 Regional Folk Painting – (Minimum four works)

¼ imperial size paper

- ❖ Four different folk arts by traditional or locally available materials and colours.

6.2 Section- B (Object and Nature Study)

- ❖ Place any one or two objects in front of the learners.
- ❖ Learner should study the object and create tonal values from light to dark using with 2B to 4B pencils. DO NOT USE ERASER WHILE SHADING
- ❖ Learner should create the object by colours also.

6.3 Section-C (Composition in Mixed Medium)

- ❖ Free hand drawing directly from life and Nature would give a sense of all the elements of a composition. Starting with basic design and various experiments to understand the forms. Use of different colours will bring the sense of composition.
- ❖ The making of collages will be very helpful to understand the textural quality of a composition. Collage to be created with the help of coloured cut out papers, picture from magazine or any easily available materials and taking care of all the elements of composition.
- ❖ Create composition with the Geometrical shapes in animate and inanimate form staking care of rhythm, balance, space, colours and harmony.



Senior Secondary Level
ENVIRONMENTAL SCIENCE (333)
Practical Examination

1. Objectives:

Practicals are an integral part of understanding and learning any science subject. Environmental Science is a subject which can be best understood by field studies, analytical laboratory exercises and creative activities. Scientific practical approach will also provide hands-on experience at devising methods for preventing environmental degradation and make the learner realise the importance of energy and its conservation.

2. Implementation:

Practical work cultivates psycho-motor skills. Therefore, adequate weightage needs to be provided to (i.) analytical laboratory exercises and (ii.) creative activities. A practical course in Environmental Science, however, is incomplete without field studies which have thus been included in the practical Environmental Science curriculum.

Included in the curriculum are **four** laboratory exercises which are **mandatory**. Out of the **six** creative activities, a learner can choose any **two out of the seven** exercises listed for field studies, a learner can choose any **three**. Therefore, a student needs to compulsorily carry out **four** laboratory exercises, **two** creative activities and **three** field studies to make a total of **nine practicals** in the whole year.

Note: Read the manual carefully. Follow the instructions given in the introduction of the manual. (Page no. 1-4)

The maximum mark for Practical in Environmental Science (333) is **20**. The distribution of activities in 05 PCPs are as follows:

First PCP Practical:

It shall be devoted to the following:

- (i.) Apprising learners regarding the SOP
- (ii.) Practical curriculum
- (iii.) Scheme of implementation
- (iv.) Allocation of marks

Therefore, **attendance in the first PCP is compulsory** for all learners opting for Environmental Science.

Note: Field studies and creative activities are to be discussed in the **first PCP**. Any doubts regarding the field work / creative activity can be discussed in the **second, third and fourth PCP**. The **creative activities** should be submitted in the **fifth PCP** while the **field studies** should be submitted in the **sixth PCP**.

Second PCP Practical:

- Laboratory exercise No-8 will be performed during the second PCP session.
- Doubts of the learners related to field studies and creative activities should be cleared by the Tutors during the second PCP session.

Third PCP Practical:

- Laboratory exercise No-9 will be performed during the third PCP session.
- Doubts of the learners related to field studies and creative activities should be cleared by the Tutors during the third PCP session.

Fourth PCP Practical:

- Laboratory exercise No-10 will be performed during the fourth PCP session.
- Doubts of the learners related to field studies and creative activities should be cleared by the Tutors during the fourth PCP session.

Fifth PCP Practical:

- Laboratory exercise No-11 will be performed during the fifth PCP session.
- Learners should submit their creative activities during fifth PCP session.

3. Scheme of Practical Examination:

The following scheme of practical examination is to be followed, as per the details given below:

- ◆ The practical examinations (mainly linked with practical PCP) are to be conducted in 06 practical sessions which are made compulsory.
- ◆ The initial five (05) PCP practicals have to be assessed through Formative (Continuous) Assessment and will be utilized for learning.
- ◆ The final (6th PCP) practical will be utilized for Summative (Final) Assessment for practical examination. The dates for the practical examination (Final) will be notified by NIOS in the examination date sheet.
- ◆ A weightage of 50% of the marks will be awarded for Formative (05 practical classes) Assessment and 50% marks for the 6th practical class for Summative Assessment.

I. Marks Distribution in Formative Assessment (05 PCP Sessions):

	Criteria for Assessment	Marks	<u>Remarks</u>
	Creative Activities	02	The five boxes under Formative Assessment in the award list will be filled up based on these 05 criteria.
	Activities Performed in 05 PCP sessions	02	
	Practical Record maintained in 05 PCP sessions	02	
	Use of practical instruments/equipment	02	
	Participation with Peer-Group and Tutor	02	
	Total	10	

II. Marks Distribution in Summative Assessment (6th Final PCP):

S. No.	Criteria for Assessment	Marks	<u>Remarks</u>
1.	Assessment of experiment performed (One experiment) Setting up of the experiment and demonstration Recording the observation Conclusion	3 marks 01 mark 01 mark (03+01+01)=05 marks	Time of 3 hours will be allowed for the final examination.
2.	Field Studies	3 marks	
	Viva-Voce	2marks	
Total		10 marks	

Note: The total (Formative and Summative Assessment) weightage is 20 marks. In the award list, the marks obtained by the learner, both in Formative and Summative Assessments are to be mentioned clearly and the final figure is the sum of the marks of Formative and Summative Assessments.

4. Preparations for PCP Practical Sessions:

- (i) The Centre Superintendent and Tutor must read the instructions mentioned in the Guidelines for practical PCP sessions.
- (ii) Learners should be informed about the schedule of Practical PCP sessions. Practicals may be arranged in groups of learners.
- (iii) A separate register for recording attendance during practicals should be maintained.
- (iv) Please ensure that the instruments, glassware and equipment used in the practical exercise are clean in order to get correct results. Arrange the materials, tools, equipment etc. that will be needed in the Practical PCP sessions in advance.
- (v) Each experiment should start from a new page. Mistakes should be crossed out with a single line so that they can still be read. The correct statement should be rewritten in its place.
- (vi) The award list must be filled up as per the given assessment criteria.
- (vii) Tutors should ensure that during practicals requisite precautions are undertaken by the learners.
- (viii) Please ensure that the Practical Record book is checked and signed from time to time and a record of evaluation of experimental work maintained throughout the year.
- (ix) Practical Record Books should be complete and neat, and regularly got signed by the tutor.
- (x) Attendance is mandatory in the first PCP; otherwise it shall be difficult to understand the scheme of practical examination and its evaluation includes both Formative Assessment and Summative Assessment.

1. Please consult the printed practical manual before undertaking any practical exercise.

5. List of Activities:

A. FIELD STUDIES:

1. Study a simple ecosystem (suggested habitats-pond, river, estuarine, lake, grassland, forest and desert) and describe the biotic and abiotic components of the ecosystem
2. Study of the effect of human interactions with the natural environment
3. Survey of vegetation, birds, insects and other animals in your locality
4. Choose five common trees/ plant species from your neighbourhood and list their common names. Describe each plant in terms of its height and leaf characteristics
5. Describe the environmental problem/s of your locality and suggest their remedy
6. Visit to different water bodies in your village/locality and describe their uses and source of water pollution if any
7. To segregate domestic solid waste into biodegradable and non-biodegradable components

B. LABORATORY EXERCISES (*ALL ARE COMPULSORY*)

1. Study of water quality
2. Soil texture and analysis of component
3. To estimate dust (particulate) deposition on the leaves of road side plants
4. To study the effect of light intensity on the growth of plants

C. CREATIVE ACTIVITIES

- (i) Set up an aquarium
- (ii) To study the biodiversity of birds and insects in your locality
- (iii) To prepare a list of plants and animals which are used as food for humans and to comment on their habit and habitat
- (iv) Make herbarium sheets of 10 different plants/trees (you can consult your teacher/tutor how to make a herbarium sheet)
- (v) To describe: (a) climate of an urban area; (b) Yearly variation in suspended particulate matter in the same area.
- (vi) To make an audit of the electrical energy consumption by various house hold appliances of your home.

Note: Material for practical examination will be provided by the centre superintendant at the practical examination centre as per requirement of the activity.



Senior Secondary Level
MASS COMMUNICATION (335)
Practical Examination

1. Objectives

Practicals have an important role and relevance in Mass Communication. The purpose of teaching Mass Communication is not only to make learners familiar with terms used in this subject but to make them aware about facts, concepts and principles. This is to prepare learners to understand concepts by doing exercises and practicals relating to them. Self experience and observation not only eliminates doubts and misconceptions in one's mind but also generates an interest and curiosity in the subject. The present practical course thus considers practical work as an integral part of the Mass Communication curriculum at the Senior Secondary stage. This guideline covers the procedure to be adopted by the NIOS learners for dealing with the practical examination. It focuses on enriching practical skills and prepares learners for cultivating a scientific attitude and a scientific temper. The purpose of introducing Formative and Summative Assessments in Practical PCP is to encourage learners' involvement and active participation in PCP classes as well as continuous assessment which leads to learning.

2. Implementation:

There are 16 exercises listed in the Practical Manual of the Senior Secondary Course in Mass Communication (335). These activities are to be conducted in 5 PCP sessions at the study centre. These will be assessed through Formative (Continuous) Assessment. The Sixth PCP is reserved for the final examination that will be assessed through Summative (Final) Assessment at the Study Centre. The dates for the practical examination (Final) will be notified by NIOS in the examination date sheet. 50% weightage is for each of Formative (Continuous) and Summative (Final) Assessments. The maximum mark for Practical in Mass Communication is 20. The distribution of activities in 05 PCPs is as follows:

First PCP Practical:

1. The Tutor will arrange a visit to a News Agency or Press in the nearby area of the concerned AI. The learners will be asked to observe the process of news making and information related to printing of newspaper and note down their observations in the practical book. Learners may also be motivated to read newspapers and find the messages within.
2. Learners have to choose **any three activities** to be performed from the following experiments (S. No.1-4 of Practical Manual) as:

- Construction of message
- Determine non verbal communication in print media
- Analyse newspapers and ideas about how to conduct an interview

Second PCP Practical:

1. Orientation / visit of learners to nearby recording studio/ All India Radio/ TV programme production house or Doordarshan Kendra. Motivating learners to listen to Radio Programmes/MVV/Community radio to observe various programme formats.
2. Learners have to choose **any two activities** to be performed from the following experiments (S. No.5-8 of Practical Manual) as:
 - ❖ Differentiate words for various media like print or radio
 - ❖ Idea about different Radio programme formats
 - ❖ Differentiate between TV and print as medium
 - ❖ Determine categories of television channels.

Third PCP Practical:

1. The learners will be apprised by the Tutor about the different forms of advertisements, print media and advertisement. Learners may also be motivated to get information about Public Relations.
2. Learners have to choose **any one activity** to be performed from the following experiments (S. No.9-10 of Practical Manual) as:
 - ❖ Identification of different forms of advertisement
 - ❖ Observe any activity of Product Public Relation.

Fourth PCP Practical:

1. The learners will be introduced to the basics of News Media, including internet and e-mail.
2. Learners have to choose **any two activities** to be performed from the following experiments (S. No11-12 of Practical Manual) as:
 - ◆ Assessing internet for information gathering
 - ◆ Practically open an e-mail account

Fifth PCP Practical:

1. The learners will be taught about Traditional Media, functions of Traditional Media practicals from Module 7A or 7B, as per the option of the learners. Those who have opted module for 7B, will be introduced to photography ie taking photographs and preparing a photo feature.
2. Learners will perform 2 practicals out of four from S.No. 13-16 as per their choice.

Sixth PCP:

This PCP will be the final practical examination. The scheme for practical examination is given below.

3. Scheme of Practical Examination:

The scheme of practical examinations is to be followed as per the details given below:

- ◆ The conduct of practical examinations is mainly linked with practical PCP sessions and there are 06 practical sessions which are made compulsory.
- ◆ The initial five (05) PCP practicals are assessed through Formative (Continuous) Assessment and will be utilized for learning.
- ◆ The final (6th PCP) practical will be utilized for Summative (Final) Assessment for practical examination.
- ◆ A weightage of 50% of the marks will be awarded for Formative (05 practical classes) Assessment and 50% marks for the 6th practical class for Summative Assessment.

I. Marks Distribution in Formative Assessment (05 PCP Sessions):

Sl.	Criteria for Assessment	Marks	Remarks
1.	Regular Participation in 05 PCP Classes	2	The five boxes under Formative Assessment in the the award list will be filled up based on these 05 criteria.
2	Activities Performed in 05 PCP Classes	2	
3	Practical Record maintained in 05 PCP Classes	2	
4	Use of practical tools	2	
5	Participation with Peer-Group and Tutor	2	
Total		10	

II. Marks Distribution in Summative Assessment (6th Final PCP Class):

Sl.	Criteria for Assessment	Marks	Remarks
1.	Two practicals from Core Modules (Modules 1 to 6) (Both should not be from the same module)	$2\frac{1}{2} \times 2 = 5$	Time of 3 hours will be allowed for the final examination.
2.	One practical from Optional Module (Module 7A or 7B)	$2 \times 1 = 2$	
	Viva-Voice	3	
Total		10	

Note: The total (Formative and Summative Assessments) weightage is 20 marks. In award list, the marks obtained by the learner, both in Formative and Summative Assessments are to be mentioned clearly and the final figure is the sum of the marks of Formative and Summative Assessments.

4. Preparations for PCP Practical Sessions:

- (i) The Centre Superintendent and Tutor must read the instructions, mentioned in the Guidelines for practical PCPs.

- (ii) Check and arrange the materials, tools, equipment, visits etc. that will be needed in the Practical PCP sessions in advance.
- (iii) Learners are informed about the schedule of Practical PCP sessions. Practicals may be arranged in groups of learners.
- (iv) The attendance sheet must be properly maintained in each Practical PCP class.
- (v) The award list must be filled up as per the given assessment criteria.
- (vi) The techniques of group work may be followed in Practical PCP sessions.
- (vii) Learners will be asked to bring the practical record book in each class.
- (viii) Each learner is expected to maintain it as per the instructions given in the practical manual.

List of Practicals

FIRST PCP

Practical No.	Module No.	Practical Activity
1.	1	Construction of a simple and clear message
2.	1	Observation of non verbal communication in the print media
3.	2	Cultivating the habit of newspaper reading and analyzing a newspaper
4.	2	Preparation to conduct an interview

SECOND PCP

Practical No.	Module No.	Practical Activity
5.	3	Differentiation between the spoken word used in radio and the written word used in print media
6.	3	Identification of different formats of radio programmes
7	4	Differentiation between television and print as two different mediums of mass communication
8.	4	Categorization of television channels

THIRD PCP

Practical No.	Module No.	Practical Activity
9.	5	Identification of different form of advertisements in the print media
10.	5	Observation of activities involved in product public relations

FOURTH PCP

Practical No.	Module No.	Practical Activity
11.	6	Accessing facilities available on the internet
12.	6	Opening an e-mail account

FIFTH PCP

Practical No.	Module No.	Practical Activity
13.	7A	Communicating effectively through traditional media
14.	7A	Identifying a traditional media form and its function in society
15.	7B	Making a photography
16.	7B	Preparing a photo feature



Senior Secondary Level
DATA ENTRY OPERATIONS (336)
Practical Examination

1. **Objectives:** Data Entry Operations is a practical oriented subject. The purpose of introducing Formative and Summative Assessments in practical PCP is to encourage learners' involvement and active participation in PCP classes as well as continuous assessment which leads to learning.
2. **Implementation**

The Computer Lab should have at least 10 – 15 working computers of configuration to the need of the syllabus. In all the computers, required software and Internet connection must be installed. One working Network printer should be there in the lab.

The practical activities are to be conducted in 5 PCP sessions, at the study centre. These will be assessed through Formative (Continuous) Assessment. The Sixth PCP session is reserved for final examination that will be assessed through Summative (Final) Assessment at the study centre. The dates for the practical examination (Final) will be notified by NIOS in the examination date sheet. 50% weightage is for each of Formative (Continuous) and Summative (Final) Assessments. The maximum mark for Practical in Data Entry Operations is 60. The distribution of activities in 05 PCPs is as follows:

First PCP Practical

- Orientation of the learners about the distribution of activities to be performed and allocation of marks for both the Formative and Summative Assessments.
- (2) Write down the following details.
 - (i) Configuration of your system
 - (ii) RAM Capacity
 - (iii) Hard disk Capacity
 - (iv) Different drives available on your system.
 - (v) At least 5 features of any OS being used at your study center/home.
 - (3) Enter your Bio-data with the following details in Times New Roman, font size 10 and save this file with name, 'Details' in My documents.

- (i) Name :
- (ii) Father's Name :
- (iii) Date of Birth :
- (iv) Postal Address :
- (v) Sex :
- (vi) Nationality :
- (vii) Educational Qualification :
- (viii) Work Experience :

Perform the following activities on the above file:

- Copy the file on CD and take the CD out
- Delete the file from the computer system
- Insert the CD again and scan it for virus.

(4) Open the file, "Details" and perform the following activities:

- A. Make the headings from serial no. (i) to (viii) bold.
- B. Make the entry at serial no. (v) underline
- C. Make the entry at serial no. (iii) italics.
- D. Select the whole document and increase its font size by 2 points.
- E. Make the line spacing 2.0. (whole document)
- F. Type 'Bio-Data' at the top of the document and make it Bold, Center aligned, Underlined. Set the font size to 14.
- G. Type the following at the end:

Name: _____ Place: _____ Date: _____

(5) Type a document of at least 2 pages on any topic, with the following specifications:

- a. Line spacing 1.5
- b. Insert space after every paragraph.
- c. Include at least one numbered list and one bulleted list.
- d. Perform spellcheck and grammar check on the whole document
- e. If there is any name in the document, it should not appear as a misspelled word.
- f. Title of the document should also be set as the page header.
- g. Footer should include Page number and your name.
- h. Left margin: 1.5", Right margin: 0.5", Top margin: 1", Bottom Margin: 1"

Second PCP Practical

- (1) Create a time table, using table in MS Word.
- (2) Create a Data source having the following details:

Roll No	Email Id	Postal Address
1111	one@abc.com	301, Vasant Kunj
2222	two@asc.com	23, Vivek Vihar
3333	three@asc.com	51, Saket
4444	four@asc.com	342, Malviya Nagar

Save this file as 'Mydata'.

- (3) With the help of Mail Merge facility, use the file 'Invitation' as Main Document, 'Invitees' as Data Source and merge them with the following format:

<Title><Firstname><LastName>

<Designation>

<Institute>

<City>

Save it as 'Invitation Letter' in the folder 'abc'. Take a print out of this Merged Document (invitation letter).

- (4)(i) Create a workbook containing two worksheets.
- (ii) Save the workbook with the name 'Marksheet'
- (iii) Rename the worksheets as 'DataSheet' and 'ChartsSheet',
- (iv) Enter the data in 'DataSheet' as follows.

	A	B	C	D	E	F
	Name of Student	Roll No.	Hindi	English	Computer	Mathematics
1	Reena	1001	60	85	72	85
2	Ram	1002	70	79	65	72
3	Mehra	1004	82	74	81	85
4	Vipin	1005	72	74	71	76
5	Vijay	1006	64	69	67	65

Third PCP Practical:

- (1) Create a PowerPoint presentation using the following slides and save this with the name 'My School'. Apply animation style to your PowerPoint presentation. Insert Slide numbers and Date in all the slides.

- (2) Title Slide, Introduction Slide, At least one slide each for (i) School Achievements in Academics, (ii) School Achievements in Sports, (iii) School Achievements in Extra-Curricular activities, Credits slide and Thank You slide.
- (3) Create your e-mail ID in at least two free e-mail Service Providers like Yahoo, Gmail, Hotmail, etc. Send a mail from one ID to the other. Then, from the second ID send reply to the first. Include an attachment with the reply.
- (4) Send a letter to your friend inviting him to attend a family function from your new e-mail ID.

Fourth PCP Practical:

- (1) Search websites of popular newspapers and download important events related to sports on a particular day.
- (2) Visit to NIOS website: www.nios.ac.in. Try to find and open the link for ‘MuktaVidyaVani’ in the NIOS website. Take the print out of today’s MuktaVidyavani schedule.
- (3) Using a Spreadsheet program, enter the following data in a worksheet. Save it as ‘Result’ in the folder, ‘abc’, and take its print out.

	A	B	C
	Employee Name	Employee ID	Salary
	Ajay	501	16000
	Ankita	503	19000
	Rakesh	504	16800
	Reema	505	20020

Insert one column and one row in the above worksheet, as per the following:

- (i) Column to be inserted between B and C:
 - (ii) Data for New column
Date of Birth
29-10-1986
30-07-1991
05-03-1984
08-10-1986
 - (iii) Calculate total salary of all the employees, using appropriate formula and enter it in row 6 and giving the row heading, ‘Total Salary’.
 - (iv) Draw a pie chart for the above data.
- (4) The following data is to be entered in an Excel sheet and suitable graphs are to be inserted to represent the data.

Class X Result Analysis

ENGLISH

<u>GP</u>	<u>F</u>	<u>M</u>	<u>Total</u>
10	4	7	11
9	8	11	19
8	25	24	49
7	21	22	43
6	12	25	37
5	10	13	23
4	2	5	7
--	0	0	0
Total	82	107	189

Science

<u>GP</u>	<u>F</u>	<u>M</u>	<u>Total</u>
10	9	15	24
9	9	18	27
8	18	19	37
7	18	17	35
6	9	21	30
5	12	14	26
4	7	3	10
--	0	0	0
Total	82	107	189

HINDI

<u>GP</u>	<u>F</u>	<u>M</u>	<u>Total</u>
<u>10</u>	<u>4</u>	<u>7</u>	<u>11</u>
<u>9</u>	<u>12</u>	<u>18</u>	<u>30</u>
<u>8</u>	<u>29</u>	<u>16</u>	<u>45</u>
<u>7</u>	<u>15</u>	<u>27</u>	<u>42</u>
<u>6</u>	<u>14</u>	<u>29</u>	<u>43</u>
<u>5</u>	<u>8</u>	<u>9</u>	<u>17</u>
<u>4</u>	<u>0</u>	<u>1</u>	<u>1</u>
<u>--</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	82	107	189

Science

<u>GP</u>	<u>F</u>	<u>M</u>	<u>Total</u>
10	7	13	20
9	12	19	31
8	22	15	37
7	13	15	28
6	11	27	38
5	11	13	24
4	5	5	10
--	1	0	1
Total	82	107	189

Maths

<u>GP</u>	<u>F</u>	<u>M</u>	<u>Total</u>
<u>10</u>	<u>6</u>	<u>16</u>	<u>22</u>
<u>9</u>	<u>9</u>	<u>13</u>	<u>22</u>
<u>8</u>	<u>15</u>	<u>16</u>	<u>31</u>
<u>7</u>	<u>15</u>	<u>13</u>	<u>28</u>
<u>6</u>	<u>16</u>	<u>19</u>	<u>35</u>
<u>5</u>	<u>9</u>	<u>17</u>	<u>26</u>
<u>4</u>	<u>10</u>	<u>11</u>	<u>21</u>
<u>--</u>	<u>1</u>	<u>2</u>	<u>3</u>
Total	81	107	188

Abbreviations Used

<i>GP</i>	<i>Grade Point</i>
<i>F</i>	<i>Female</i>
<i>M</i>	<i>Male</i>

Income Expenditure statement			
Income		Expenses	
Fee	24000000	Salaries	22000000
Annual Charges	1500000	Maintenance	1500000
External Exams	20000	Stationery	50000
PTA Fund	100000	Others	1900000
Total	25620000	Total	25450000
Balance:	25620000-25450000 = 270000		

Fifth PCP Practical:

- (1) As a part of its 'Healthy India Drive', an NGO, Unnat Bharat Nirman, has decided to educate people on infectious diseases. For this, they want to create a brochure and a presentation.

Your job is to create the brochure and the presentation using Word, Excel, and PowerPoint.

Word: The brochure is to be designed in Word. The outlines of the brochure are as follow:

NGO name and Logo → Name of the campaign (Healthy India) → Statements to convince that prevention is better than cure → Names of infectious diseases, along with some pictures → How the diseases spread → Preventive measures to stop the spread of diseases. The brochure will also have the graph(s) that you prepared in Excel.

The document should contain suitable a header and a footer.

The brochure should be of at least 4 pages with the following specifications:

Margins: Top – 1”, Bottom – 1”, Left = 1.5”, Right – 0.7”

Line Spacing: 1.5;

Paragraph Spacing – Space above and below each paragraph.

- (2) **Excel:** Gather data (from Internet, Hospitals, or any other source) on the major fatal infections. Enter this data in an Excel spreadsheet and prepare suitable graphs in Excel.
- (3) Open the NIOS website and make a list of online courses available under academic / vocational.
- (4) (i) Enter the data of expenditure on various items in your family in the following format in a worksheet and save it in the name, 'Expenditure'.

Grocery	30%
Milk	25%
Vegetables	15%
Clothes	20%
Miscellaneous	10%

(ii) Plot a pie chart based on the data in the file, 'Expenditure'. Save the file

(iii) Open the file, 'Expenditure' and plot a bar chart. Save the file.

3. Scheme of Practical Examination:

The following scheme of practical examinations is to be followed as per the details given below:

- ◆ The conduct of practical examinations is mainly linked with practical PCP sessions and there are 06 practical sessions which are compulsory.
- ◆ The initial five (05) PCP practicals are assessed through Formative (Continuous) Assessment and will be utilized for learning.
- ◆ The final (6th PCP) practical will be utilized for Summative (Final) Assessment for the practical examination.
- ◆ A weightage of 50% of the marks will be awarded for Formative Assessment (05 practical classes) and 50% marks for the 6th practical class for Summative Assessment.

I. Marks Distribution in Formative Assessment (05 PCP Sessions):

S. No.	Criteria for Assessment	Marks	Remarks
1.	Regular Participation in 05 PCP Classes	10	The five boxes under Formative Assessment in the award list will be filled up based on these 04 criteria.
2.	Activities Performed in 05 PCP Classes	10	
3.	Practical Record maintained in 05 PCP Classes	5	
4.	Participation with Peer-Group and Tutor	5	
Total		30	

II. Marks Distribution in Summative Assessment (6th Final PCP Class):

S. No.	Criteria for Assessment	Marks	Remarks
1.	Assessment of activity performed (For two activities)	20	Time of 2 hours will be allowed for the final examination.
2.	For taking the print outs of the output	5	
3.	Viva-Voce based on the activities	5	
Total		30	

Note: The total (Formative and Summative Assessments) weightage is 60 marks. In the award list, the marks obtained by the candidate, both in Formative and Summative Assessments are to be mentioned clearly and the final figure is the sum of the marks of Formative and Summative Assessments.

4. Preparations for PCP Practical Sessions:

- (i) The Centre Superintendent and Tutor must read the instructions mentioned in the Guidelines for practical PCPs.
- (ii) Check and arrange the materials, tools, equipment etc. that will be needed in the Practical PCP sessions in advance.

- (iii) Learners are informed about the schedule of Practical PCP sessions. Practicals may be arranged in groups of learners.
- (iv) The attendance sheet must be properly maintained in each Practical PCP class.
- (v) The award list must be filled up, as per the given assessment criteria.
- (vi) The techniques of group work may be followed in Practical PCP sessions.
- (vii) Learner shall be asked to bring the practical record book in each class. Each learner is expected to maintain it as per the instructions given in the practical manual.

5. Precautions (DOs and DON'Ts)

Discuss the following points with the learners, regarding preparing the practical record book:

- (i) Throughout the practical note book, the learners should follow the same style. Ask them to use a good pen and a sharp black pencil. It is recommended that the right hand page should be written in blue ink and the left hand page with a black pencil.

The recommended style of writing is shown below:

Left hand page

Table, Chart and print out of the output screen

Right hand page

Title of the Exercise, Date

Exercise No.

Interpretation and Conclusion

- (ii) Each experiment should start from a new page.
- (iii) Mistakes should be crossed out with a single line so that they can still be read. The correct statement should be rewritten in its place.
- (iv) No page should be torn-off from the practical record book.
- (v) Before going to take Practical Examination, get all the exercises of Practical Record Book signed by the tutors.

6. Computer Lab Rules (Do's and Don'ts)

- ❖ The computers in the lab are to be used for academic purposes only.
- ❖ Uploading or downloading of any software without permission is strictly prohibited
- ❖ Do not make any changes to the desktop or to the installed software.
- ❖ Playing computer games is strictly prohibited.
- ❖ Report problems, 'if any' to the instructor.
- ❖ Please Logoff when you leave.

Note: Material for practical examination will be provided by the centre superintendant at the practical examination centre, as per the requirement of the activities.



Senior Secondary Level

LIBRARY AND INFORMATION SCIENCE (339)

Practical Examination

1. OBJECTIVES

Practicals are essential for learning and understanding any science subject. Similarly, study of Library and Information Science subjects requires practical training. Practical imparts hands-on experience and help the learner to learn quickly and understand the concept more clearly. Library and Information Science is a subject which can be best understood by field studies, like exploring different types of institutions providing information and practical exercises to manage and organize information resources held by these institutions.

2. IMPLEMENTATION

To impart necessary practical skills, 15 practicals (12 from core modules and 3 from any one of the two optional modules 5A or 5B) have been identified. Students have to perform 12 practicals from four core modules listed in sections A, B, C, and D, and 3 practicals from one of the optional modules listed in sections **E** and **F (Appendix A)**. The list covers all the major aspects of Library and Information Science Curriculum. All 15 practicals are compulsory.

15 practicals listed in Appendix A have to be performed during Personal Contact Programme. Facility for carrying out practicals and their evaluation is to be provided during Personal Contact Programme. Five PCPs are to be used by learners to perform 15 practicals, at least three practicals each day. A learner has to prepare a daily record of the practicals carried out and get it evaluated. The Initial 5 PCPs are compulsory for the learner and will be utilized for Learning and Formative Assessment, failing which learner will not be eligible to appear in the final (6th PCP) which will be utilized for Summative Assessment for conducting final practical examination. The dates for the final practical examination (6th PCP) will be notified by NIOS in the examination date sheet. 50% weightage will be for each of Formative (Continuous) and Summative (Final) Assessments. The maximum marks for practical in Library and Information Science is 20. The *distribution of activities* in 05 PCPs is as follows:

In the First PCP, the Tutor will arrange a visit to the AI Library for the learners and an Information Centre in the nearby area of the AI. The learners will observe the library and Information centre features, services and note down the differences between library and Information Centre from the point of view of services provided by Library, Information centres and an Automated Library. The Tutor will discuss and evaluate the observations noted down in the practical book by the learner.

In the Second PCP, the Tutor will apprise the learners about the primary and secondary sources of information, abridged and unabridged dictionaries. He will apprise also the learners regarding the method to use sources of information to answer the reference queries. He will ask the learners to identify primary and secondary sources of information on the basis of their features. Learners will perform the practicals in section B of **Appendix A**.

In the Third PCP the learners will be apprised by the Tutor about the main classes of Dewey Decimal Classification, Colon Classification and Cataloguing and shelving of books according to classified arrangement of books in a library. Learners will perform the practicals in section C of **Appendix A**.

In the Fourth PCP, the learners will be introduced to basic routines of manual as well as computerized circulation services of a library, how to carry out literature search in a library catalogue and online databases and compile a subject bibliography on the basis of searches made using library catalogue and online databases. Learners will perform the practicals in section D of **Appendix A**.

In the Fifth PCP, the learners will be taught about practicals from Module 5A or 5B, as per the option of learners. Those who have opted for module 5A will be introduced to the Accession Register and process of accessioning, Career in Librarianship and periodical publications and others will be taught about types of indexes, web-based search and navigational search. Learners will perform 3 practicals either from section E or section F of Appendix A.

The sixth PCP will be the final practical examination. The scheme for practical examination is given below.

3. SCHEME OF PRACTICAL EXAMINATION:

The following scheme of practical examinations is to be followed, as per the details given below:

- ❖ The conduct of practical examinations is mainly linked with practical PCP sessions and there are 06 practical sessions are compulsory.
- ❖ The initial five (05) PCP practicals are assessed through Formative (Continuous) Assessment and will be utilized for learning.
- ❖ The final (6th PCP) practical will be utilized for Summative (Final) Assessment for practical examination.
- ❖ A weightage of 50% of the marks will be awarded for Formative (05 practical classes) Assessment and 50% marks for the 6th practical class for Summative Assessment.

Marks Distribution in Formative Assessment (05 PCP Sessions):

S. No.	Criteria for Assessment	Marks	Remarks
	Regular Participation in 05 PCP Classes	2	The five boxes under the Formative Assessment in the award list will be filled up based on these 05 criteria.
	Activities Performed in 05 PCP Classes	2	
	Practical Record maintained in 05 PCP Classes	2	
	Use of practical tools	2	
	Participation with Peer-Group and Tutor	2	
Total		10	

Marks Distribution in Summative Assessment (6th Final PCP Class):

S. No.	Criteria for Assessment	Marks	<u>Remarks</u>
vi.	a) Two practicals from Core Modules (Modules 1 to 4)	$2\frac{1}{2} \times 2 = 5$	Time of 3 hours will be allowed for the final examination.
	b) (Both should not be from the same module) One practical from Optional Module (Module 5A or 5B)	$2 \times 1 = 2$	
vii.	Viva-Voce	3	
Total		10	

Note: The total (Formative and Summative Assessments) weightage is 20 marks. In the award list, the marks obtained by the learner, both in Formative and Summative Assessments are to be mentioned clearly and the final figure is the sum of the marks of Formative and Summative Assessments.

2. Preparations for PCP Practical Sessions:

- (i) The Centre Superintendent and Tutor must read the instructions mentioned in the Guidelines for practical PCPs.
- (ii) Check and arrange the materials, tools, equipment etc. that will be needed in the Practical PCP sessions in advance.
- (iii) Learners are informed about the schedule of Practical PCP sessions. Practical may be arranged in groups of learners.
- (iv) The attendance sheet must be properly maintained in each Practical PCP class.
- (v) The award list must be filled up, as per the given assessment criteria.
- (vi) The techniques of group work may be followed in Practical PCP sessions.
- (vii) Learners will be asked to bring the practical record book in each class. Each learner is expected to maintain it as per the instructions given in the practical manual.

APPENDIX A

List of Practicals:

Section A

Practical No.	Module No.	Practical
1.	1	To visit a library and an information centre.
2.	1	To visit an automated library and record its features
3.	1	To identify services of library and information centre

Section B

Practical No.	Module No.	Practical
1.	2	To identify primary and secondary sources of information
2.	2	To differentiate between abridged and unabridged dictionaries
3.	2	To find answers of reference queries

Section C

Practical No.	Module No.	Practical
1.	3	To identify subjects from Dewey Decimal Classification(DDC) and Colon Classification numbers(CC)
2.	3	To search and understand different components of manual and computerized catalogues.
3.	3	To understand classified arrangement of books on the shelves and shelving of books.

Section D

Practical No.	Module No.	Practical
1.	4	To understand basic routines of manual as well as computerized circulation services.
2.	4	To compile a subject bibliography
3.	4	To carry out literature search using online databases.

Section E

Practical No.	Module No.	Practical
1.	5(A)	To learn accessioning of documents
2.	5(A)	To find and record educational qualifications for 3 different posts of library professionals from any source of information.
3.	5(A)	To find out Periodicity, Volume, Issue Number, Publisher and ISSN of 5 periodicals.

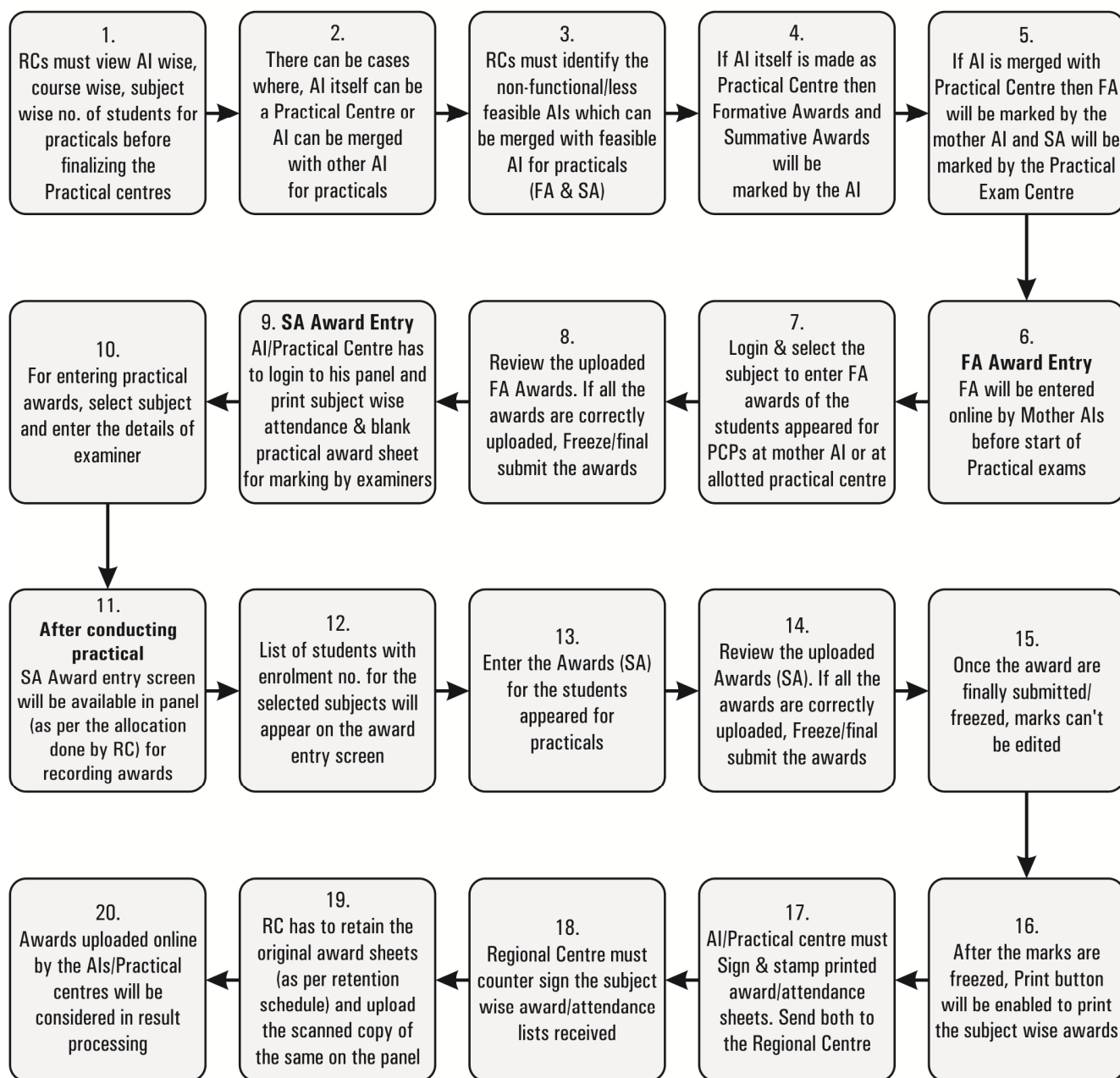
OR**Section F**

Practical No.	Module No.	Practical
1.	5(B)	To identify different types of indexes
2.	5(B)	To understand and practice web based search techniques
3.	5(B)	To carry out Navigational search

ANNEXURES



Process flow diagram for conduct of Practical examination and online uploading of marks (Formative and Summative)



In case the AI is not a practical centre, the AI (mother AI) will be responsible for uploading the Formative Awards and the practical centre will upload the Summative awards. Ensure that no column is left blank while uploading the marks online.

SPECIMEN OF ATTENDANCE SHEET FOR PRACTICAL EXAMINATION
(Secondary /Sr. Secondary Summative Examination)

Exam Centre No. _____

Name of Centre/AI _____

Subject _____

Date _____

Roll No.	Name of Candidate	Serial No. of Practical Examination Answer Book	Candidates Signature

SIGNATURES OF PRACTICAL EXAMINERS COUNTERSIGNED BY CENTRE SUPDT.& OSD

Note:

1. Specimen signature of the candidate must be verified by the Practical Examiner with the signature of the candidate on the I.Card/Admission Card.
2. If the candidate is absent the Examiner should write ABSENT in the column of signature of the candidate and encircle the Roll No. in RED INK.

* To be used only if the Computerised Attendance Sheet is not received at the Centre.

PROFORMA FOR 'UFM CASES'

(SECONDARY/ SR. SECONDARY SUMMATIVE PRACTICAL APR./OCT. 20... EXAMINATION)

1. Centre No..... Name of Centre/AI
2. Roll No..... Name of Candidate
3. Subject.....
4. Date and Time of incidentDate.....Time
5. Mode of Unfair means used in exam and circumstances in which caught.
.....
6. Type of copying material found from the candidate i.e help book, loose printed/hand written sheets. No. of pages/ loose sheets found be also indicated, mobile phone/electronic gadgets.
.....
.....
7. Place from where copying material recovered, e.g. pant pocket, shirt pocket, beneath the desk or in the answer book, inside shoes/socks etc
8. Any other information

Sign. of the
CandidateSign. of Internal
ExaminerSign. of External
ExaminerSign of Centre Superintendent/
AI Coordinator**IMPORTANT:**

1. Make the report in duplicate, one copy be attached with the answer book of the candidate and the other copy be sent to Dy. Director (Exams)/Concerned Regional Director the same day for necessary action.
2. If the candidate is caught copying, encircle the portion copied in the Practical Examination Answer Book as well as in the copying material and mention its page no(s). on top of the answer book and the copying material.
3. The 2nd Practical Examination Answer Book should be issued to the candidate immediately and the candidate should not be debarred from taking the future practical examination if any. If the candidate refuses to accept the 2nd copy please write this fact in para 6 above and on the cover page of the first Practical Examination Answer Book of the candidate.
4. The Examiner/Centre Supdt./ Coordinator of the AI should record the Roll No., of the candidate on the material recovered, number the same as sing at..
5. The Coordinator of the AI should record on the Answer Book the fact and brief details of the UFM case.

Specimen Form For

FORWARDING UNFAIR MEANS CASES

(SECONDARY / SR. SECONDARY SUMMATIVE PRACTICAL APR./OCT. 20... EXAMINATION)

- 1. Name of candidate _____
- 2. Roll No. _____
- 3. Exam. Secondary/Sr. Secondary _____
- 4. Date _____
- 5. Subject & Paper _____
- 6. Time of the Incident _____
- 7. Circumstances under which caught _____
- 8. Unfair aids recovered _____

- 9. Whether Statement received from the candidate Yes/No _____
- 10. Whether 2nd copy of Answer Book was given Yes/No _____
- 11. Statement of Examiner obtained Yes/No _____

12. Remarks of Centre Superintendent/ Coordinator of the AI :
.....
.....

Sign of Centre Supdt./ Coordinator of the AI _____
Date : Name of Centre Supdt./ Coordinator of the AI _____

Exam Centre No. _____ Address _____

Enclosures:

- 1. First/Second Copies of Answer Book 1/2 copies _____
- 2. Statement of Candidate Enclosed/not enclosed _____
- 3. Statement of Examiner Enclosed/not enclosed _____
- 4. Unfair aids/materials recovered Pages _____
- 5. Filled up format of UFM cases as per Annexure -2

(Note: Please use separate proforma for each case)

Specimen of ABSENTEE STATEMENT

(SECONDARY/ SR. SECONDARY SUMMATIVE PRACTICAL APR./OCT. 20... EXAMINATION)

NAME OF THE CENTRE/AI _____ EXAM CENTRE NO. _____

1. Roll Nos. of candidates absent in all the subjects.....
.....

2. Details of Partly Absentee Cases

S. No.	Roll No. (s)	Subject (s)

3. Details of Unfair Means Cases

S. No.	Roll No. (s)	Subject (s)

4. Details of Transfer Case Appeared

S. No	Roll No. (s)	Subject in appeared	Transfer from Centre No	
			from	..To..

5. Details of Subject Changed by the Candidates

S. No	Roll No. (s)	Subject (s) changed	
		from.....	To.....

Signature of OSD of NIOS

Signature of Centre Superintendent /Coordinator
AI(With Rubber Stamp)

Note : This may please be returned to the Concerned Regional Director soon after the Practical Examination is over along with the Attendance Sheets, duly attested by the Centre Superintendent. This should be prepared separately for Secondary and Senior Secondary examinations.

**NATIONAL INSTITUTE OF OPEN SCHOOLING
CONSOLIDATED BILL FOR SUMMATIVE PRACTICAL
APRIL/OCT. 2-..... EXAMINATION**

(To be filled in by the Centre Supdt. of the Centre/Coordinator of the AI)

1. Examination Centre No.
2. Name of Centre Supdt/ Coordinator of the AI.
3. Amount claimed for Centre Supdt. (*Practical Exam. Bill Proforma-10*)
4. Amount claimed for examiners (*Practical Exam. Bill Proforma-11*)
5. Amount claimed for other staff: (*Practical Exam. Bill Proforma-12*)
6. Amount claimed for Lab. Charges : (*Practical Exam. Bill Proforma-13*)
7. Postage/Conveyance/Packing cloth charges
8. Total amount claimed
9. Less Advance Received
10. Balance amount claimed
11. Bank Details for Payment
 - (i) Name of the Payee _____
 - (ii) S.B. A/c No. _____
 - (iii) Name and Address of the Bank
 - (iv) IFS Code
 - (v) E-mail: _____
 - (vi) Mobile No.: _____

Verified

(Centre Supdt.)

Name/Centre No.

NB: Use Photocopies for submitting additional bills.

**REMUNERATION BILL FOR THE ‘CENTRE SUPERINTENDENT’
FOR SUMMATIVE PRACTICAL EXAMINATION**

1. **Name of the Examination:** Secondary/Sr. Secondary/Vocational- April/October _____
2. **No. & Name of the Examination Centre/AI:** _____

3. **Remuneration for working as Supdt. of NIOS Practical Examination** for ____ days (s):
@ Rs. 400/- per day .
4. **Details of Duty during Practical Examinations:**

S. No.	Date of Practical Examination	Subject & Paper	No of Batches	No of Students in each Batch+	Rate	Amount
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						

Total No. of Sessions _____

Signature of the Centre Suptd/ Coordinator of the AI

Name (in block letters) _____

Dated: _____

Postal Address _____

(for Office use)

Practical Exam. Bill Proforma-3

BILL FOR SUMMATIVE PRACTICAL APRIL/OCT. 20..... EXAMINERS

Name:.....

Course: Secondary/Sr. Secondary

Subject:.....Code.....

A. REMUNERATION:

S.No.	Date of Practical Examination	No of Batches	No of students examined in each batch	Total No of Students	Rate	Amount Claimed
Total						

C. CONVEYANCE: (for external examiners only)

S.No.	Date of Practical Examination	No. of Batches	No of students examined in each batch	Total no. of Students	Rate	Amount Claimed
Total						

Total of A & B = Rs. In words (Rupees.....)

Signature of Claimant _____

Signature of Centre Superintendent _____

Address.....

Address _____

Rubber Stamp _____

BILL FOR OTHER STAFF CHARGES
(SUMMATIVE PRACTICAL APR./OCT. 20... EXAMINATION)

1. Name of the Centre _____
2. Centre No. _____
3. Name of Centre Superintendent _____
4. Lab. Assistant's Charges

S. No.	Name of the Lab bearer/sweeper	Subject of Practical	No. of Sessions* Attended	Amount claimed
1.				
2.				
3.				
4.				
5.				

Total Amount claimed:

5. Lab. Bearer/Sweeper's Charges

S. No.	Name of the Lab Bearer/Sweeper	Subject of Practical	No. of Sessions* Attended	Amount claimed
1.				
2.				
3.				
4.				
5.				

Total Amount claimed:

*Not more than two sessions in a day.

Verified

(Signatures of Centre Supdt. with Seal)

NATIONAL INSTITUTE OF OPEN SCHOOLING

A-24/25, Institutional Area, Sector-62, NOIDA

BILL FOR LABORATORY CHARGES

(SUMMATIVE PRACTICAL APR./OCT. 20... EXAMINATION)

1. Centre No _____

2. Name of the Centre/AI _____

3. Name of Centre Superintendent _____

Name of Laboratory	Subject of Practical (Sec./Sr. Sec)	No. of Candidates Registered	Amount Claimed	Remarks

Total Amount Claimed Rs.

Verified
Signature of Centre Superintendent
With seal

SPECIMEN PROFORMA OF AWARD LIST

DO NOT FOLD/TAG THE FOIL		National Institute of Open Schooling ICR Award Sheet for Practical <small>(USE BLUE/BLACK BALL PEN ONLY)</small>						
Examination & Year			Region		Sr. No.			
Subject		Paper		Centre No./AI No.				
Max. Marks:	Min. Pass Marks:	Above 33%	<input type="checkbox"/>	Below 33%	<input type="checkbox"/>			
				Total Absent	<input type="checkbox"/>			
S. No.	ROLL NUMBER	MARKS (FIG.)					TOTAL (FORMATIVE + SUMMATIVE)	
		FORMATIVE (50%)		TOTAL	SUMMATIVE (50%)	FIG.	WORDS	
1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grand Total		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Name of the Internal Examiner _____			Signature _____		Date _____			
Name of the External Examiner _____			Signature _____		Date _____			
Name & Signature of Co-ordinator of AI _____			Countersigned by RD NIOS _____					

NATIONAL INSTITUTE OF OPEN SCHOOLING
LIST OF REGIONAL CENTRES AND STATES COVERED
UNDER EACH REGIONAL CENTRE

Name of the Region	Address of Regional Centre & Contact Number	States Covered
1. Allahabad	19/17, Kasturba Gandhi Marg, Kachahari Road Allahabad - 211002 (Uttar Pradesh) Ph.: (O) 0532-2548154 (Fax) 0532-2548149 e-mail: rcallahabad@nios.ac.in	Uttar Pradesh
2. Amethi	Lakhara House, Munshiganj Road, Sarvanpur-227405, Amethi, (Uttar Pradesh) Email: rcamethi@nios.ac.in	Amethi & Gauriganj
3. Bengaluru	Office of the Director (Vocational Education) 3rd Floor, PUE Bhawan, 18th Cross Sampige Road, Malleswaram, Bangluru - 560012, Karnataka Ph.: 080-23464223; Fax: 080-23464222 Email: rcbengaluru@nios.ac.in	Karnataka
4. Bhopal	Manas Bhawan, Shyamla Hills, Bhopal - 462002 (M.P.) Ph.: 0755-2661842, 2660331 Fax : 0755-2661842 E-mail: rcbhopal@nios.ac.in	Madhya Pradesh
5. Bhubaneswar	ELTI Campus, Maitri vihar, Chandrashekhar Pur, Bhubaneswar - 751023 (Odisha) Ph. No. 0674-2302688, Fax: 0674-2302287 E-mail.: rcbsr@nios.ac.in	Odisha
6. Chandigarh	YMCA Complex, Sector-11C, Chandigarh-160011 Ph.: (O) 0172-2744915, 3950979 Fax : 0172-2744952 E-mail: rchandigarh@nios.ac.in	Punjab, Chandigarh, & Haryana (Excluding Gurgaon, Faridabad, Jhajjar)
7. Chennai	Govt. Model Higher Secondary School Lady Wellington Campus Triplicane,, Chennai-600005 Phone No. 044-28442237; Fax: 044-28442239 E-mail: rcchennai@nios.ac.in	Tamil Nadu, Pondicherry
8. Delhi	A-31, Institutional Area, NH-24, Sector-62, NOIDA- 201309 Distt. - Gautam Buddha Nagar (U.P.) Ph: (O) 0120-2404914, 2404915 Fax : 0120-2404916 ; E-mail: rcdelhi@nios.ac.in	NCT of Delhi and bordering Distts. of NCT in Uttar Pradesh and Haryana comprising of Distts. of Gautam Buddha Nagar (Noida and Greater Noida), Ghaziabad, Gurgaon, Faridabad, Jhajjar and Palwal.

Name of the Region	Address of Regional Centre & Contact Number	States Covered
9. Dehradun	Amrit Plaza Building Near Bengali Kothi Chowk Moth Rowala Road, P.O. Ajapur Kalan Dehradun - 248001, Uttarakhand Ph.: (O) 0135- 2629166; 2623929 E-mail: rcdehradun@nios.ac.in	Saharanpur, Muzaffar Nagar, Moradabad and J.P. Nagar (Amroha) districts of U.P. Uttarakhand, Meerut, Bagpat
10. Dharmshala	2nd Floor, Chamunda Complex (Near Income Tax Office) Dari Road, P.O. Dari, Dharmshala Distt. Kangra Himachal Pradesh-176057 Phone No.: 01892-222251, Fax: 01892-222351 E-mail: rcdharmshala@nios.ac.in	Himachal Pradesh
11. Gandhinagar	7th Floor, 'D' Wing M.S. Building, Near Pathikashram Bus Stand, Sector-11 Gandhi Nagar-382011, Gujarat Ph.: 079-23220410; Fax: 079-23220411 Email: rcgandhinagar@nios.ac.in	Gujarat
12. Guwahati	Building of Assam Publication Board, (Near Assam Board of Secondary Education) Ist Floor, Bamunimaidan, Guwahati-781021 (Assam) Ph. (O): 0361-2650541, 2651201 (Fax) 0361-2650542 E-mail: rcguwahati@nios.ac.in	Nagaland, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram and Tripura
13. Hyderabad	IV Floor, Sri Krishna Devaraya, Telugu Basha Nilayam, Trust, No 4-4-8, 2 Sultan Bazar, Hyderabad - 500095. Ph.: (O) 040-24162859, Fax : 040-24060712 (M) 09391420830 E-mail: rchyderabad@nios.ac.in	Telangana
14. Jaipur	5-6, Padmavati Colony-1 Adjacent To Mansarovar, Metro Station Kings Road, Nirman Nagar, Jaipur-302019 Ph.: (O) 0141-2292818, 2290057 Fax.: 0141-2292819 E-mail: rcjaipur@nios.ac.in	Rajasthan
15. Sub Centre Kota	2nd Floor, 2-P-1, Vigyan Vihar Kota - 324005, Rajasthan Ph.: 0744-2428555 Mob. No. 09889128555 E-mail: srckota@nios.ac.in	

Name of the Region	Address of Regional Centre & Contact Number	States Covered
16. Jammu	105, Karan Nagar, Opposite Trikuta Yatri Niwas, Jammu and Kashmir Ved Mandir Road, Ambphala, Jammu-180005 rcjammu@nios.ac.in	Jammu & Kashmir Leh and Ladakh
17. Kochi	6th Floor, Kerala State House Board Building Panampilly Nagar, Kochi-682036 (Kerala) Ph.: 0484-2310032, 4035540, 0484-2310033 E-mail: rckochi@nios.ac.in	Kerala & Lakshdweep
18. Kolkata	CL 18A, Sector-2, Salt Lake City, (Near CK Market), Tank No.9 and Aruna Moyee Bus Stand, Kolkata-700091(WB) Ph.: (O) 033-24797714, Fax : 033-24797707 E-mail: rckolkata@nios.ac.in	Sikkim, West Bengal and Andaman and Nicobar Island
19. Gangtok	Teacher's Guest House Syari, Gangtok - East Sikkim-737102 E-mail: srcgangtok@nios.ac.in	
20. Patna	Lalit Bhawan, Ground Floor, Jawahar Lal Nehru Marg, Bailey Road, Patna - 800001 (Bihar) Ph.: (O) 0612-2545051, Fax: 0612-2545470 E-mail: rcpatna@nios.ac.in	Bihar
21. Sub-Centre Darbhanga	Mohalla Khan Chowk Near Main Khan Chowk PO Lal Bagh Distt. Darbhanga-846004 Phone : 0627-2250628 (M) 09939738521 Fax: 0627-2250628	
22. Pune	C/o Indian Institute of Education Campus, 128/2 JP Naik Road, Sriniketan Society, (Near Solaris Club) Kothrud, Pune-411029 (Maharashtra) Ph. (O) 020-25444667, 25439763 Fax: 020-25444667 E-mail: rcpune@nios.ac.in	Maharashtra, Goa and Daman & Diu
23. Raipur	DIET Campus BTI Ground Shankar Nagar, Raipur-492007 Phone: 0771-2442147, 2442167 Fax: 0771-2442147 (M) 09479071549 E-mail: rcrainpur@nios.ac.in	Chhattisgarh

Name of the Region	Address of Regional Centre & Contact Number	States Covered
24. Ranchi	Hostel Premises, Amar shahid Thakur Vishavanath Shahdev Zila School, Zill School Parishad, 1st Floor, B.Ed. College, Ranchi-834001 E-mail: rcranchi@nios.ac.in Phone No.: 0651-2217030 Fax: 0651-2217060	Jharkhand
25. Visakapatnam	5th Floor, B Block, VUDA Complex, Siripuram, Visakapatanam-530003, Andhra Pradesh Ph.: 0891-2564584 Fax: 0891-2792713 E-mail : rcvisakhapatnam@nios.ac.in	Andhra Pradesh
NIOS Cell		
26. Shillong	Directorate of Educational Research & Training Campus (DERT), Laithumkhram Shillong, Meghalaya-793011 E-mail: trilokes@gmail.com	
27. Port Blair	Adult Education in the Directorate A&N Administration Shiksha Sadan A&N Island, Port Blair	

NOTES

1. *In the event of some doubt arising in the interpretation of provisions, practices and rules, the decision of the Chairman, NIOS will be final.*
2. *The NIOS reserves the right to amend, modify or alter any of these guidelines and bring them into effect through notification. Once notified, the guidelines would come into force.*
3. *Every care has been taken to print correct information to the minutest possible level .The NIOS, however, is not responsible for any inadvertent mistakes cropping up during the printing and publishing of the Guidelines.*