
Guidelines for Higher Secondary PRACTICAL EVALUATION 2022-2023



സംസ്ഥാന വിദ്യാഭ്യാസ ഗവേഷണ പരിശീലന സമിതി (SCERT)

വിദ്യാഭവൻ, പുജപ്പുര, തിരുവനന്തപുരം 695 012
Phone: 0471 - 2341883, 2340323, e-mail: scertkerala@gmail.com

ആമുഖം

കോവിഡിന്റെ പ്രത്യേക സാഹചര്യത്തിൽ പ്രായോഗിക പരീക്ഷയുള്ള വിഷയങ്ങളിൽ ലാബ് പ്രവർത്തനങ്ങൾ പൂർണ്ണതോതിൽ സ്കൂളിൽ നടത്താൻ കഴിയാതിരുന്നതിനാൽ കഴിഞ്ഞ രണ്ട് അധ്യയന വർഷങ്ങളിൽ പ്രായോഗിക പരീക്ഷയ്ക്ക് ചെയ്യേണ്ട പ്രവർത്തനങ്ങളിൽ കുറവ് വരുത്തിയിരുന്നു. എന്നാൽ 2022-2023 അധ്യയനവർഷം നേരിട്ടുള്ള പഠനപ്രവർത്തനങ്ങൾ പൂർണ്ണ തോതിൽ സ്കൂളുകളിൽ നടന്നുവരുകയാണ്. ചില വിഷയങ്ങളിൽ റാഷണലൈസേഷന്റെ ഭാഗമായി പാഠഭാഗങ്ങളിൽ ചില മാറ്റങ്ങൾ വരുത്തിയിട്ടുണ്ട്. അത്തരം മാറ്റം ലാബ് പ്രവർത്തനങ്ങളുടെ ഉള്ളടക്കത്തിലും വരുത്തേണ്ടതുണ്ട്. ഈ സാഹചര്യത്തിൽ ഈ അധ്യയന വർഷം (2022-2023) പ്രായോഗിക പരീക്ഷയ്ക്ക് ചെയ്യേണ്ട പ്രവർത്തനങ്ങളുടെ വിശദാംശം ഇതോടൊപ്പം ചേർക്കുന്നു. പ്രസ്തുത ലാബ് പ്രവർത്തനങ്ങൾ സമയബന്ധിതമായി പൂർത്തിയാക്കി മികച്ച വിജയം കൈവരിക്കുന്നതിന് വിദ്യാർത്ഥികൾക്ക് കഴിയട്ടെ എന്ന് ആശംസിക്കുന്നു.

ഡോ. ജയപ്രകാശ് ആർ.കെ
ഡയറക്ടർ
എസ്.സി.ഇ.ആർ.ടി കേരളം

Guidelines for Higher Secondary Practical Evaluation 2022-2023

PHYSICS

Physics is an experimental science. A clear understanding of its principles can be made by doing the experiments by one's own hands. Hence experimental Physics is highly significant in the higher secondary level. In the Physics laboratory a systematic study of a phenomenon or a principle is conducted through scientific method.

A minimum of 14 experiments must be performed by each student with at least 7 experiments from each section A and B (First year and Second year)

Students must be provided ample opportunities to be familiar with the maximum number of apparatus and scientific principles through practical physics.

Performing experiments using the same apparatus / principle and recording them as different experiments should be avoided. Eg. (i) Find the volume of a given sphere using Vernier Calipers and (ii) Determine the density of a rectangular block using Vernier Calipers cannot be recorded as two separate experiments.

Physics Practical Log Book

The experiments performed by the student must be recorded in the log book. The student should be encouraged to draw the tabular column and write the aim and principle of the experiment before performing the experiment in the lab and the certified logbook should be submitted for practical examination. A single logbook should be used for first and second year. A minimum of 14 experiments should be recorded in the practical log book.

Scheme of Work

Year	Sub Section	Units as per NCERT textbook	Minimum number of experiments to be performed	Total periods required	Minimum experiment to be performed in the year
XI (Section A)	1	1,2,3	2	30	7
	2	4,5,6	2		
	3	7,8,9,10	1		

	4	11,12,13	1		
	5	14,15	1		
XII (Section B)	1	1,2,3	2	30	7
	2	4,5,6	1		
	3	7.8,9,10	3		
	4	11,12,13,14	1		

Higher Secondary Practical Examination

An External practical examination should be conducted at the end of HSE Second year for a maximum 40 scores. Certified log book should be submitted for the practical examination also. Duration of the examination is 3 hrs.

Score Distribution

SI No.	Item	Score
1.	Principle and theory	5
2	Setting up of apparatus	2
3	Performance of the experiment	6
4	Result in SI units/ conclusion	4
5	Viva-Ascertaining the awareness of concepts	1
6	Total marks for One Expt.	18
7	Total marks for Two Expt.	36
8	Record	4
9	Total Score for Two Expt.	40

Two experiments should be done at the time of practical board examination, One experiment from XI (Section A) and other from XII(Section B). The total marks for practical board examination is 40.

EXPERIMENTS (Section A or XI)

1. Find the volume of the given cylinder/rectangular block. Given Vernier Calipers.
2. A sphere of known mass is given along with Vernier calipers. Determine the diameter and hence volume of the sphere.
3. Determine internal volume of the given calorimeter. You are supplied with Vernier calipers.
4. A screw gauge and a meter scale are supplied. Determine the diameter of the wire and hence find its volume.
5. Using a screw gauge, determine the thickness of the glass plate and find its volume. Graph paper supplied.
6. Determine the volume of the given lead shot using a screw gauge.
7. Using a spherometer find the thickness of the glass plate and hence find its volume with the use of a graph paper.
8. Using a spherometer, find the radius of curvature of the spherical surface (concave/convex).
9. Using common balance determine the mass of the given body by sensibility method.
10. Using the principle of moments determine the mass of the given body.
11. Find the mass of the meter scale using the principle of moments.
12. Using the moment bar, find the relative density of the given body.
13. Find the relative density of the given body using parallelogram law.
14. Find the mass of the given body using parallelogram law apparatus.
15. Using a capillary tube and microscope, find the surface tension by measuring capillary rise.
16. Draw the load-extension graph of a helical spring for at least four different loads and determine the spring constant from the graph.
17. Tabulate load extension for helical spring for at least four different loads and find spring constant by calculation.
18. Using a helical spring, measure the period of oscillation with four different known masses and determine spring constant by calculation.
19. Draw $M-T^2$ graph for a helical spring with four readings. Determine spring constant from the graph.

20. Determine the viscosity by measuring the terminal velocity of glass beads through castor oil in a jar.
21. Find the specific heat of a solid or liquid by the method of mixtures.
22. Using the law of friction, find the coefficient of friction between a block and a horizontal surface.
23. Determine the period of oscillation for lengths, 70, 75, 85, 90 and 95 cm of a Simple pendulum .Plot $L-T^2$ graph, find acceleration due to gravity using graph.
24. Find the period of oscillation of a simple pendulum lengths, 65, 70, 75, 85 and 90 cm. Using these values calculate the acceleration due to gravity at the place.
25. Using resonance column apparatus, measure the resonating lengths for at least three tuning forks hence find velocity of sound at room temperature.
26. Compare the frequencies of two tuning forks using resonance column apparatus.
27. Using a sonometer, determine the unknown frequency of the given tuning fork. Three tuning forks of known frequencies are supplied.
28. Using a Sonometer study the relation between length of a given wire and tension for constant frequency.
28. Study the rate of cooling by drawing a time-temperature graph. You are provided with a Calorimeter, water and stopwatch, thermometer etc.

EXPERIMENTS (Section B or XII)

1. To find the resistivity of a material of wire using Ohm's Law.
2. To find the resistance of a material of wire using Ohm's Law by plotting $V - I$ graph.
3. To find the change in resistance of a given material with length using ohm's Law.
4. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
5. To convert the given galvanometer (of known resistance and of figure of merit) into an ammeter of desired range and to verify the same.
6. To convert the given galvanometer into a voltmeter of desired range and to verify the same.
7. To find the frequency of the ac mains with a sonometer.
8. To find the value of v for different values of u in case of a concave mirror and to find the focal length.
9. To find the focal length of a convex mirror, using a convex lens.

10. To find the focal length of a concave mirror by drawing a uv graph and to verify the result by normal reflection method.
11. To find the focal length of a convex lens by plotting a graph between u and v .
12. To find the focal length of a convex lens by plotting a graph between $1/u$ and $1/v$.
13. To find the focal length of a concave lens, using a convex lens in contact with it.
14. To determine angle of minimum deviation for a given prism by plotting a graph between the angle of incidence and the angle of deviation.
15. To calculate the refractive index of the material of the prism using the id curve.
16. To determine the refractive index of a glass slab using a traveling microscope.
17. To find the refractive index of a liquid by using (i) concave mirror, (ii) convex lens and plane mirror.
18. To find the focal length of a liquid lens.
19. To draw the I - V characteristics of a p-n junction in forward bias.
20. To draw the I - V characteristics of a p-n junction in reverse bias.

Guidelines for Higher Secondary Practical Evaluation 2022-2023

CHEMISTRY (Class XII)

Laboratory work plays a crucial role in the proper assimilation of concepts in science. Along with term end evaluation at the end of academic year, practical evaluation (PE) is also to be conducted. The skill in performing qualitative and quantitative analysis is to be assessed through PE. The following are the guidelines to be followed while conducting PE during the academic year 2022-2023

- Sufficient number of apparatus is to be provided to the students
- The apparatus should be of quality brands
- Sufficient number (at least 30) of standardised and calibrated apparatus should be kept aside for conducting PE
- A minimum of 6 salts (those soluble in water) for systematic analysis of anion & cation should be given to the students
- A minimum of 6 single titrations (Acidimetry-2, Alkalimetry-2, Permanganometry-2) should be given for volumetric analysis.
- The practical log book should contain all the necessary recording related to the first year and second year practical syllabi collectively.
- Required facilities should be arranged in the laboratory for students demanding special attention because of deformities.
- The score distribution (detailed split up appended) should be as follows
 - Qualitative analysis (Anion & Cation Analysis) - 16 scores
 - Quantitative analysis (Single titration only) - 15 scores
 - For writing principle & procedure for quantitative analysis - 3 scores
 - Practical Log book - 4 scores
 - Viva voce - 2 scores
- The viva voce should be done for ascertaining the awareness of concepts related to the practical. It should not create tension to the students. It should be a casual interaction with the students through simple questions related to practicals only to check whether she/he has conceptual clarity in the given work.

Scheme of work for Practical Evaluation
Class XII
CHEMISTRY

Detailed split up of scores

1	Practical Log Book	Score
	Basic laboratory techniques	½
	Physical chemistry experiments (Two)	½
	Reactions of anions and cations	½
	Salt analysis (6 salts)	½
	Reactions of organic compounds (Carboxylic acid, Phenol, Aniline, Aldehyde and Ketone)	½
	Volumetric analysis (Acidimetry-2, Alkalimetry-2, Permanganometry-2)	1½
2	Viva voce (Ascertaining the awareness of concepts related to the practical through simple questions informally)	2
3	Qualitative analysis	
	Anion	
	Identification of anion (One test)	4
	Confirmatory test (One test)	4
	Cation	
	Identification of group (One test)	2
	Identification of cation (one test)	3
	Confirmatory test (One test)	3
4	Quantitative analysis (Single titration)	
	Tabulation and recording	4
	Calculation	
	Normality of standard solution	1½
	Normality of solution to be estimated	1½
	Correct equivalent masses	2
	Correct calculation of the result with unit	2
	Correct reading of the result	
	Error within 1% (Full score)	4
	Error up to 2%	3
	Error above 2%	2
5	For writing the principle and procedure for quantitative analysis	
	For writing balanced chemical equation	1
	Procedure	
	Solution in pipette	½
	Solution in burette	½
	Indicator used	½
	Colour change	½

Note

- (i) The procedure for quantitative analysis should be obtained in detail.
- (ii) The student need not weigh the substance. The standard solution for estimation should be provided by the examiner.
- (iii) The student has to make up the solution for estimation.
- (iv) Systematic analysis should be followed in inorganic analysis.
- (v) Normality may be used as the concentration for volumetric analysis.

Sample Question Paper for Practical Evaluation

HIGHER SECONDARY PRACTICAL EXAMINATION 2022-23 CHEMISTRY

Maximum Score : 40
Time : 3 Hours

1. Estimate the mass of Oxalic acid in the whole of the given solution. You are provided with a standard solution of KMnO_4 containing 3.16 g/L. (Score :15)
2. Briefly write the principle and procedure for the above estimation within first 5 minutes . (Score :3)
3. Analyse the given salt and identify and confirm systematically the anion and cation present in it. (Score: 16)
4. Viva voce
(Informal simple questions to know awareness on practical) (Score : 2)
5. Practical Record (Score :4)

**IT MATHS LAB
PRACTICAL EVALUATION 2022-23**

**GUIDELINE FOR LAB WORK AND PRACTICAL EVALUATION OF
MATHEMATICS**

I. INTRODUCTION

Numerical skills and other Maths related skills are inherent in a child. These skills can be nourished by activity based learning and learning by doing. This system is practised in schools of Kerala with regard to learning of Mathematics. Learners are also getting the opportunity to learn Maths using free software like GeoGebra up to standard X. At the Higher Secondary level, where the abstract thinking is boosted, the scope of IT enabled Mathematics learning can be extended to enhance the learning process. Considering this, SCERT has prepared guidelines for introducing the concept of 'IT Maths Lab' at Higher Secondary level. This guideline was approved by the 50th State Curriculum committee and the Director Higher Secondary Education requested SCERT to initiate steps to implement the IT Maths Lab.

Accordingly, as per G. O (Rt) No. 522/2019/Gen. Edn. Dept, Trivandrum, dt. 08/02/2019 Govt. of Kerala has decided to implement IT Maths Lab from the academic year 2019-20 onwards. As per this government order, the existing IT labs in Schools are to be utilised for the functioning of IT Maths Lab. Separate IT Maths Lab is not essential. For enriching the Labs and to function the IT Maths Labs from 2019-20 onwards, the funds such as High-tech School Programme, Plan fund, MP/MLA/Local body can be utilised. The free software such as GeoGebra, Python, LibreOffice Calc ... will be provided free of cost by KITE.

Details of IT Maths Lab:

- For the proper functioning of the IT Maths Lab, a detailed Maths Lab Manual has been prepared.
- The Lab activities are prepared based on Textual content areas of Higher Secondary Maths – Class 11, Class 12.
- For the first year, there are 16 Lab tasks based on Class 11 Syllabus.
- For the second year, there are 24 Lab tasks based on Class 12 Syllabus.
- Each Lab consists of 2 or 3 activities and some additional activities.

Evaluation of Performance of students in IT Maths Lab:

- The continuous and comprehensive evaluation of the learner can be done through the activities done in the IT Maths Lab.
- The performance of the learner in IT Maths Lab can be evaluated as a part of Practical Evaluation of the learner.

The details are discussed below:

II. SYLLABUS FOR PRACTICAL:

Learning outcomes associated with some of the topics in Higher Secondary Maths syllabus are better transacted if it is discussed in the Lab. So IT Maths Lab is conceived as a transaction

method. Hence the Lab meant for each year should be discussed in the year itself. The additional activities in each Lab are meant for exceptional students and are not compulsory in regular Lab classes.

During the last academic year as schools were closed due to covid 19 pandemic, it is understood that we couldn't make it possible to carry out all the assigned lab works. Also NCERT rationalised the content in Mathematics textbooks of Plus One and Plus Two. Some of the topics dropped by NCERT are part of the lab activities .In this circumstances, it is decided to modify the list of IT Maths Labs for this academic year . For the IT Maths Lab Practical Examination in February / March 2023, the following labs with the corresponding activities are to be completed

Lab 0 is compulsory

From the labs given below it is mandatory to do 12 labs, by selecting at least 5 from each standard (Plus 1 & Plus 2).

PLUS ONE

1. Lab 0 Basic Concepts
2. Lab1 Value of functions
3. Lab 2 Shifting of Graphs
4. Lab 4 Trigonometric Functions
5. Lab 8 Straight lines (Activity 8.1, 8,3 and 8.4)
6. Lab 9 Conic Sections (Activity 9.3 , 9.4 and 9.5)
7. Lab10 Circle and Parabola
8. Lab12 Basics of 3D (Activity 12.1 , 12.3 and 12.4)
9. Lab13 Limits (Activity 13.1, 13.2 and 13.3)
10. Lab16 Miscellaneous (Activity 16.1, 16.2 and 16.4)

PLUS TWO

1. Lab18 Functions (Activity 18.1 , 18.2 and 18.3)
2. Lab19 Invertible Functions (Activity 19.1 , 19.2 and 19.3)
3. Lab 20 Inverse Trigonometric Functions 1 (Activity 20.1, 20.3 and 20.4)
4. Lab 24 Continuity
5. Lab 26 Increasing and Decreasing Functions
6. Lab 29 Maxima and Minima (Activity 29.1 and 29.2)
7. Lab 32 Application of integrals (Activity 32.1 and 32.2)
8. Lab 34 Vectors

III. EVALUATION AT HIGHER SECONDARY LEVEL:

The evaluation pattern of Mathematics at the Higher Secondary Level is as follows:

YEAR	TE	CE	PE	TOTAL
First Year	60	20	--	80
Second Year	60	20	40	120

For the Continuous Evaluation, the activities of IT Maths Lab may also be considered along with other items prescribed for CE from the first year itself. The Details of Practical Evaluation is explained below.

IV. PRACTICAL EVALUATION (PE)

In Practical Evaluation the students are tested only on the basis of Mathematical concepts. Necessary software knowledge will be given as a hint in the evaluation question. The following are the guidelines for conducting PE.

- The questions should be strictly based on the syllabus prescribed for practical work in each year.
- The examination will be of 3 hours duration and maximum score is 40.
- Practical examination should be conducted in batches. The maximum number of students in each batch may be limited to 20.
- Students should attend the PE with the Practical Observation Book. It should compulsorily include 12 Lab works, at least 5 from each year, duly signed by the concerned teacher. The same should be verified and counter signed by the external examiner at the time of PE.
- The questions should be taken from the question pool finalised by DHSE.
- For the practical examination, 6 questions will be given to each student out of which he/she has to answer only 4, selecting at least 1 from each year. Each question carries a maximum score of 8. Hence the students can get a maximum score of 32 from 4 questions. The questions will be randomly selected by the external examiner from the question pool given by DHSE.

*The scoring indicators for a question of PE is as follows:
8 score (each question)*

Indicators	Score
Analysing the problems	1
Choosing the appropriate method	1
Recording the procedure	3
Problem solving skill	2
Generating output	1

- The Practical Observation Book will be evaluated by the external examiner. The maximum score is 4.
- A Viva voce will be conducted for each student based on the questions answered. It should be a casual interaction with the student during the evaluation to check whether he/she has clarity in concept / process of the questions that he/she answered in the practical examination. Students can get a maximum score of 4.

Scoring indicators for Viva-voce are as follows
Viva voce (4 score)

Indicators	Score
Content knowledge	1
Clarity of concept	1
Logical sequencing of idea	1
Communication skill	1

- The score sheet should be filled in by the external examiner. The format of score sheet is given below.

Sample Score Sheet

Sl No.	Register Number	Question No.1 Score (8)	Question No.2 Score (8)	Question No.3 Score (8)	Question No.4 Score (8)	POB Score (4)	Viva voce Score (4)	Total Score (40)
1								
2								
3								

- Name and Designation of external Examiner:

.....
.....

Date of Exam:.....

Signature:.....

- The final score sheet should be send to DHSE as per instructions given by the Directorate of General Education.

Guidelines for Higher Secondary Practical Evaluation 2022-2023

BOTANY

(Total Periods 30)

1. **A. Dicot stem, Monocot stem, Dicot root, Monocot root**
Preparation-2, Diagram -1, Labelling- 1/2 (at least two main parts), Identification- 1/2, Reasons-2(two features for stem/root and other two for dicot/monocot).
2. **B. Microscopic slides** (Oscillatoria, Rhizopus, Spirogyra, Moss-protonema, Fern-prothallus) Macroscopic specimens (Agaricus, Sargassum, Funaria-gametophyte with sporophyte, Nephrolepis sporophyte, Pinus male cone and Female cone), Any three microscopic and macroscopic specimen should be provided. Name of specimen and its specified part - 1/2 any one reason for its identification- 1/2.
C. Photograph of Bioreactor, Bt cotton, Cloning vector(identification-1/2, any one reason for its identification- 1/2).
3. **D. Identification** of any one stage of mitosis from the permanent slide mounting (use pointer eye piece) (Identification of given stage 1/2 any one reason for its identification- 1/2).
4. **E. Physiological experiments** (Study of plant pigments by paper chromatography, Hydrilla experiment, Study of distribution stomata on lower and upper surfaces of leaves, Study of Yeast fermentation and production of alcohol). (At least two experiments should be provided) Aim of experiment- 1/2,, diagram-1/2, labelling- 1/2.
5. **F. Single flower** of family Solanaceae should be provided to describe any one of its floral whorl (Separate whorl to different batches). - 1 1/2
6. **G. Lichen, Cuscuta/Loranthus, Epiphyte**(identification of interaction-1 description-1).
7. **H. Anther** should be provided to take C.S.Section- 1, diagram-2(diagrammatic sketch of four lobed anther C.S/cellular diagram of a single lobe) (label any three parts).
8. Ask simple questions informally related to the physiological experiments done-1.
9. Practical diary-2.
 - * Issue individual materials for Q. no.1A and 7H
 - * Give separate answer sheet for answering spot at sight, the material B,C and D (mitosis) and collect the answer sheet immediately after answering.

Model Question Paper

HIGHER SECONDARY PRACTICAL EXAMINATION BOTANY

HSE-II

Time: 1½Hrs
Total score: 20

1. Prepare a T.S of the given specimen A and identify giving reasons. Draw the ground plan and label the parts. Leave the preparation for valuation. Score 6
Preparation - 2
Labelled diagram - 1½
Identification - ½
Reason – 2
2. Identify the material B and C at sight by giving reasons. Score 2
Identification - ½ x 2 = 1
Reason - ½ x 2 = 1
3. Identify the given stage D of mitosis and give reasons. Score 1
Identification - ½
Reason - ½
4. Write the aim of the experiment E. Draw and label the parts. Score 1½
Aim -½
Labelled diagram – 1
5. Observe the given flower ,F. Describe it's floral whorl, calyx/corolla/ gynoecium (Any one) using technical terms. (Any three) Score 1½
Three technical terms- 1½
7. Write down the ecological interaction of the specimen G Score 2
Name of interaction- 1
Description -1
8. Prepare a C.S. of the given specimen H. Draw diagram and label any two parts. Leave the preparation for valuation. Score 3
Section - 1
Labelled diagram – 2
9. Ascertaining the awareness of concepts related to the experiment Score 1
10. Practical diary Score 2

PRACTICAL EVALUATION(PE)

HIGHER SECONDARY EDUCATION FOR THE SUBJECT ZOOLOGY

Outcome focused assessment approach is followed at Higher Secondary level. Here we give importance to continuous evaluation (CE), term evaluation (TE) and practical evaluation (PE). For the subject Zoology, practical internal evaluation is compulsory. Following are the general guidelines to be followed while conducting the practical evaluation.

GENERAL GUIDELINES

- The practical and theory classes should be conducted simultaneously as a part of teaching learning process.
- Only internal practical evaluation will be conducted in class XI.
- A proper record of the experiment done and practical work carried out should be maintained at "*practical log*" (The book which is used by the learner from first year onwards in the lab for entering observations and calculations regularly)
- The "*practical log*" should be submitted at the time of internal practical evaluation.
- The "*practical log*" should be signed by the concerned teacher in a regular manner.
- There should be a clear cut separation of the entries for the XI and XII class of the practical records in a single "*practical log*".
- Rough "*practical log*" not needed. Only one fair "*practical log*" is enough for recording class XI and XII.
- Diagrams are to be drawn to substantiate the lab work.
- At the end of the first year, the internal evaluation of the practical work of Zoology will be conducted.
- The internal evaluation scores given by the teacher will be entered as practical evaluation of CCE (Continuous & Comprehensive Evaluation).
- An internal examination should be conducted during December of the current academic year.
- External evaluation of the practical work will be done at the end of second year.

- External evaluation of the practical work at the end of second year will include the practical works of first year also.
- No dissection of live animals. The student has to draw the diagram of the system that is displayed or projected.
- The time allotment of practical work for one batch is 1hour for class XI and 1¹/₂ hours for class XII.
- The teacher may check the content knowledge of the learner through oral question (viva-voce)limited to the particular PE examination.
- The internal score for PE of class XI Zoology is limited to 10.
- For Class XI, the 10 scores are distribute to the practical work and "*practical log*" only.
- For Class XII, practical as per question paper = 17 Scores.Viva - 1 Score, Practical Log - 2 Score.Total - 20 Score.
- The distribution of the score of internal evaluation is given in the scheme of practical evaluation.
- The internal evaluation scores given by the teacher will be entered as practical evaluation (PE) score of the learner.
- PE should be conducted in batches as in the external practical evaluation for the second year students. The maximum no of students in each batch is limited to 15.
- Students must attend the PE with "*practical log*". It should contain all the necessary recording related to the first year practical syllabus.
- Splitted score should be entered in main answer.
- Scheme of examination and mode of evaluation shall be prescribed along with the practical syllabus which shall be strictly followed.

SCHEME OF ZOOLOGY PRACTICAL EVALUATION- CLASS XI & XII

Instruction

- All the items are compulsory.
- Total period - 60
- Time duration -1 hour for class XI & 1½ hours for class XII (PE Examination)
- Class XI - Score 10
- Class XII - Score 20
- The materials needed will be provided in the Centre

LIST OF PRACTICALS FOR CLASS XI

1. Invertebrate Animals

- Identification of an invertebrate animal through chart/model

[Hydra, Liver Fluke, Ascaris, Leech, Earthworm, Prawn, Silkworm, Honeybee, Snail, Starfish]

2. Vertebrate Animals

- Identification of a vertebrate animal through chart/model.

[Rohu, Frog, Lizard, Pigeon, Rabbit]

3. Morphology & Anatomy

Draw the diagram of the system as displayed or projected

- Mouth parts of cockroach
- Digestive System of cockroach

4. Physiology

- Identification of models

[Heart,Lung, Kidney, Brain, Eye, Ear]

5. Histology

- Identification of different types of muscles through permanent slides

[Striated muscle,Non-striated muscle,Cardiac muscle]

6. Osteology

- Identification of joints

[Types and Peculiarities]

- Ball & Socket Joint, HingeJoint, PivotJoint, Gliding Joint

7. Biochemical Experiment

- Demonstration of digestion of starch by salivary amylase.

[At room temperature, On heating]

- Identification of presence of starch,glucose,protein,fat.[Detect them in suitable plant and animal material]
- Identification of presence of sugar,albumin,bilesalts,urea in urine sample.

8. Slide Preparation

- Preparation of temporary stained slides

[Human Cheek Epithelium,Human Blood Smear]

LIST OF PRACTICALS FOR CLASS XII

9. Embryology

- Identification of embryological slides

[T.S of ovary, T.S of testes & T.S of blastula through permanent slides]

10. Genetics

- Study of Mendelian inheritance using seeds of different colors.
- Study prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood groups, ear lobes, widow's peak and color blindness.

11. Evolution

- Study analogous and homologous organs in various animals

[Using Charts]

12. Common Human Diseases

- To identify common human disease causing organisms like Ascaris, Entamoeba, Plasmodium & Ringworm.

[Using slide or diagram]

HIGHER SECONDARY PRACTICAL EXAMINATION

HSE I

ZOOLOGY

TIME: 1 HOUR

TOTAL SCORE: 10

Instruction

- All the items are compulsory.
- The materials needed will be provided in the Centre.

1. Identify the given invertebrate animal. [SCORE-1]

Write one identifying character/one economic importance/one adaptation.

Identification - 1/2 Score

One Value Point- 1/2 Score

2. Identify the given vertebrate animal, [SCORE-1]

Write one identifying character/one economic importance/one adaptation

Identification - 1/2 Score

One Value Point- 1/2 Score

3. Identify the slide of given tissue. Sketch and label two parts. [SCORE-1]

Identification - 1/2 Score

Sketch and Labelling- 1/2 Score

4. Identify the given model. Name the marked part. Write one physiological function.

[SCORE-1]

Identification- 1/2 Score

Function - 1/2 Score

5. Identify the type of joint. Write one peculiarity. [SCORE-1]

Identification - 1/2 Score

One Value Point- 1/2 Score

6. Draw the digestive system of cockroach. Label four parts. [SCORE- 1¹/₂]

OR

Draw the mouth parts of cockroach. Label four parts

Diagram-1 Score

Label -1/2 Score

7. Two samples A & B are given. Identify the samples with glucose /protein /starch / albumin/bile salts/urea.

OR

Two urine samples A & B are given. Identify the sample using the reagent provided.

OR

Two urine samples A & B are given. Identify the urine of diabetic patient from the samples. [SCORE - 1¹/₂]

Experiment - 1/2 Score

Procedure - 1/2 Score

Result -1/2 Score

8. Prepare a stained slide of your cheek epithelium. Draw and label one part of a single cell.

OR

9. Prepare a thin film of your blood smear on a slide. Identify one cell. Draw and label. [SCORE -2]

Slide Preparation - 1 Score

Diagram- - 1/2 Score

Labelling - 1/2 Score

HIGHER SECONDARY PRACTICAL EXAMINATION

HSE II

ZOOLOGY

TIME: 1½ HOURS

TOTAL SCORE: 20

Instruction

- All the items are compulsory.
- The materials needed will be provided in the Centre.
- Preparation time - 10 minutes.

1. Identify the given invertebrate animal. [SCORE-1]

Write one identifying character/one economic importance/one adaptation.

Identification - ½ Score

One Value Point- ½ Score

Time - 4 minutes.

2. Identify the given vertebrate animal. [SCORE-1]

Write one identifying character/one economic importance/one adaptation

Identification - ½ Score

One Value Point- ½ Score

Time - 4 minutes.

3. Identify the slide of given tissue. Sketch and label two parts. [SCORE-2]

Identification -1Score

Sketch and Labelling - ½ + ½= 1 Score

Time -7 minutes

4. Identify the given model or Name the marked part. Write one physiological function.

[SCORE-1]

Identification - ½ Score

Function - ½ Score

Time - 4 minutes.

5. Identify the type of joint. Write one peculiarity. [SCORE-1]

Identification - $\frac{1}{2}$ Score

One Value Point - $\frac{1}{2}$ Score

Time - 4 minutes

6. Draw the digestive system of cockroach. Label four parts. [SCORE-3]

OR

Draw the mouth parts of cockroach. Label four parts

Diagram-1 Score

Label four parts - $\frac{1}{2} \times 4 = 2$ Score

Time - 15 minutes.

OR

Identify one analogous and one homologous organ from the given chart and write one peculiarity. (Vertebrate heart and vertebrate brain/fore limbs of whale and fore limbs of cheetah and wings of butter fly and wings of birds)

Identification - 2 score

Peculiarity - 1 score

7. Two samples A & B are given. Identify the samples with glucose / protein / starch / bile salts / urea.

OR

Two urine samples A & B are given. Identify the presents of albumin in the sample using the reagent provided.

OR

Two urine samples A & B are given. Identify the urine of diabetic patient from the samples. [SCORE-2]

Experiment - 1Score

Procedure - $\frac{1}{2}$ Score

Result - $\frac{1}{2}$ Score

Time - 15 minutes

8. Prepare a stained slide of your cheek epithelium. Draw and label one part of a single cell.

OR

Prepare a thin film of your blood smear on a slide. Identify one cell. Draw and label.

[SCORE-2]

Slide Preparation - 1 Score
Diagram (RBC & one WBC) - 1 Score
Time - 15 minutes

9. Identify the pathogen, name the disease caused by it and write one symptom

[SCORE-2]

Identification - $\frac{1}{2}$ Score
Disease - $\frac{1}{2}$ Score
Symptom - 1 Score
Time - 4 minutes

10. Identify the given embryology slide. Sketch and label one part.
(T.S of Testis/Ovary/Blastula of human)

[SCORE-2]

Identification - $\frac{1}{2}$ Score
Sketch and Labelling - $1 + \frac{1}{2} = 1\frac{1}{2}$ Score
Time - 7 minutes

11. Viva-Voce

[SCORE-1]

Time - 1 minute

12. Practical Log

[SCORE-2]

Guidelines for Higher Secondary Practical Evaluation GEOGRAPHY

Outcome focused assessment approach is followed at higher secondary level. The curriculum and assessment procedure for Higher Secondary level has been revised by giving importance to learner centered, process oriented activity based and value oriented. Both comprehensive and continuous assessment has been implemented to assess the proficiency of the learners at cognitive and socio emotional areas. As part of this geography practical is also revised by giving importance to learning outcomes. In the area of practical evaluation in geography, the scheme of evaluation, mode of evaluation and the weightage is revised without altering the syllabus. The general guidance given below are to be followed while conducting the evaluation of geography practical work.

1. The practical and theory classes should be conducted simultaneously as the part of teaching learning process with maximum integration.
2. Geography practical evaluation is restructured. The scheme of evaluation mode of evaluation and the weight of scores in geography practical is restructured but the syllabus must be followed without any change.
3. Geography scheme of practical evaluation is restructured in four different methods such as: - on the spot, drawing, calculation and computer aided
4. A proper record of all the practical work carried out in class XI and XII should be maintained and it will be assessed only in the class XII practical examination.
5. A field work should be conducted based on the cases given in the chapter 5 of part II Geography practical textbook.
6. The total score for the PE is distributed as -

practical examination	-	32 scores
field survey report	-	2 scores

record	-	4 scores
viva	-	2 scores
Total	-	40 scores

7. External evaluation of practical work will be done at the end of second year.
8. The practical assessment should be conducted in batches, which should not exceed 15 students.
9. Students must attend the practical evaluation with 'Practical Record' and Field Survey Report'. Practical record should contain all necessary recordings related to first and second year syllabus.
10. The practical record should be duly signed by the after the completion of each practical work.
11. Practical work of class XII should commence only after completing Part I and should be recorded accordingly in the record book.
12. At the end of class XI, an internal evaluation of practical work in geography will be conducted.
13. The score for internal practical evaluation for class XI is limited to 20. The time allotment of practical work for one batch is 1 ½ hour. This score will not be considered for final PE, it is only a part of internal evaluation.
14. The total score for external practical evaluation for class XII is 40 and the time allotted for one batch is 3 hours.
15. Scheme of evaluation, mode of evaluation and weightage of scores is given along with the syllabus which should be strictly followed.
16. Each school must have a Geography Laboratory with ample room for exhibiting the equipments for conducting practicals and to accommodate the students for practical sessions. The size specification of geography laboratory and the equipments required therein is appended.

Class XI ANNUAL PLAN (PRACTICAL)

Term	Month	Chapters	Name of Chapters
I	July	1	Introduction to Maps
		2	Map Scale
	August	3	Latitude, Longitude and Time
		4	Map Projections
II	September	4	Map Projections (continued ...)
	October	4	Map Projections (continued ...)
	November	5	Topographical Maps
	December	6	Topographical Maps
III	January	6	Topographical Maps
	February	7	Introduction to Remote Sensing
		8	Introduction to Remote Sensing

Class XII

Term	Month	Chapters	Name of Chapters
I	June	1	Data - Its Source and
		2	Compilation Data Processing
II	July	5	Graphical Representation of Data
	Aug - Sep	3	
III	Oct - Dec	4	Geographical representation of Data
	Jan	6	Spatial Information Technology

DETAILS OF PRACTICAL EVALUATION

Class XI & XII

Modes of geography practical evaluation

- On the spot.
- Drawing.
- Calculations.
- Computer aided.

Note : The modes of evaluation is identified according to the nature of unit of each class.

LIST OF PRACTICAL FOR CLASS XI

Unit I - Introduction to Maps

On the spot.

- Classifies types of maps - Physical Maps, Cultural Maps, Large Scale Maps, small scale maps, etc.
- Use of Magnetic compass to orient the map.

Drawing.

- Cardinal points or important directions.

Calculations.

- Measurement of distance.
- Measurement of area.

Unit II - Map Scale

On the spot.

- Measuring the length of curved features such as rivers, roads, etc. by using thread and rotameter.
- Methods of representing scale.

Drawing.

- Graphical scale using RF/statement of scale.

Calculations.

- Scale conversions. (Statement of scale into RF and RF into statement of scale.)

Unit III - Latitude, Longitude and Time.

On the spot

- Identifying the latitude and longitude of given place with the help of atlas, wall maps or globe.

Drawing.

- Important latitudes and longitudes.
- Drawing specific latitude with given angular measurements.

Calculations.

- Time calculations.

Unit IV - Map Projections.

On the spot.

- Identifying the projections based on developable surface.

Drawing.

- Conical map projections

Calculations.

- Calculation of reduced earth radius.
- Calculation of length of equator.

Unit V - Topographical Maps.

On the spot.

- Identifying the conventional signs and symbols.
- Write the marginal information from the toposheet.
- Interpretation of toposheet.

Drawing.

- Conventional signs and symbols.
- Contour cross section.
- Layout plan.

Calculations.

- Toposheet - 6 point grid reference.

Unit VII - Introduction to Remote Sensing.

On the spot.

- Identify and use the instrument - GPS (Global Positioning System)
- Identify the geostationary satellites and sun synchronous satellites from the pictures.
- Identifying satellite imageries.
- Identifying various features from the imageries.
- GPS Survey

Drawing.

- Position of geostationary satellites and sun synchronous satellites.

LIST OF PRACTICAL FOR CLASS XII

UNIT -I- DATA-ITS SOURCE AND COMPILATION

Drawing

- Frequency polygon
- Ogives.

Calculation

- Preparation of frequency distribution table

Computer aided

- Frequency polygon
- Ogives.(Less than & More than Ogives)

UNIT -II- DATA PROCESSEING

Drawing

- Correlation graph

Calculator

- Mean, median, mode

Computer aided

- Correlation Graphs
- Calculation of Mean using statistical function

UNIT -III- GRAPHICAL REPRESENTATION OF DATA

Drawing

- Construction of Wind rose & Star diagrams.
- Flow Chart(Traffic)
- Thematic maps
 1. Dot Map
 2. Choropleth map
 3. Isopleth map

Computer aided

- Excel / Ubandu based line, bar, polygraph, multiple Bar, pie diagram.

UNIT -VI- SPATIAL INFORMATION TECNOLOGY

On the spot

- Identify the Raster entities, Vector entities & Real world entities

Computer aided

- Layering
- Overlay operations
- Buffer Operations

LABORATORY EQUIPMENTS CLASS XI - GEOGRAPHY

Unit I - Introduction to Maps

1. Globe
2. Physical Maps
 - (a) Relief Maps
 - (b) Geological Maps
 - (c) Climatic Maps
 - (d) Soil Maps
3. Cultural Maps
 - (a) Political Maps
 - (b) Population Maps
 - (c) Economic Map
 - (d) Transportation Maps
4. Large-scale Maps
 - (a) Cadastral maps
 - (b) Topographical maps
5. Small-scale Maps
 - (a) Wall Maps
 - (b) Atlas Maps
6. Magnetic Compass

Unit II - Map Scale

1. Meter Tape
2. Instrument Boxes

Unit III - Latitude, Longitude and Time

1. Charts
 - a) Latitudes & Longitudes
 - b) Major Time Zones of the World

Unit IV - Map Projections

1. Transparent Globe
2. Chart - Map Projections
3. Instrument Boxes

Unit V - Topographical Maps

1. Reference Map of Topographical Sheets
2. Charts -
 - a) Conventional Signs and Symbols.
 - b) Contours and their cross sections
3. Relief Models -
 - a) Gentle Slope
 - b) Steep Slope
 - c) Concave Slope
 - d) Convex Slope
 - e) Conical Hill
 - f) Plateau
 - g) 'V'-shaped Valley
 - h) 'U' - shaped Valley
 - i) Gorge
 - j) Spur
 - k) CLIFF
 - l) Waterfall and Rapids
4. Toposheets

Unit VI - Introduction to Aerial Photographs

1. Aerial Photographs (Stereopaire)
2. Stereoscope (Pocket /Mirror)

Unit VII - Introduction to Remote Sensing

1. Charts -
 - a) Stages in remote sensing
 - b) Electromagnetic spectrum
 - c) Orbit of sun synchronous satellites
 - d) Geostationary satellites
2. Satellite Imageries

Unit. VIII - Weather Instruments, Maps and Charts

1. Weather Instruments
 - a. Thermometer
 - b. Maximum & Minimum Thermometer
 - c. Wet Bulb & Dry Bulb Thermometer
 - d. Barometer (Mercury Barometer & Aneroid)
 - e. Wind Vane
 - f. Cup Anemometer
 - g. Rain Gauge
 - h. Hygrometer
 - i. Sun Shine Recorder
2. Weather Maps
3. Weather Charts
4. Charts - Weather Symbols

LABORATORY EQUIPMENTS CLASS XII - GEOGRAPHY

Unit I - Data - Its Source and Compilation

1. Graph Paper
2. Instrument Boxes

Unit II - Data Processing

1. Calculator
2. Graph Paper
3. Instrument Boxes

Unit III - Graphical Representation of Data

1. Graph Paper
2. Calculator
3. Instrument Boxes

Unit VI - Use of Computer in Data Processing and Mapping

1. Computer
- 2, Chart - parts of computer

Unit V - Field Surveys

1. Camera
2. Measuring tape
3. Instruments as required for the topic

Unit VI - Spatial Information Technology

1. G.I.S Software
2. Computer
3. Tracing Table

Geography Lab

Geography laboratory room should have ample space to display weather instruments, working and still models in geography, place for tracing tables and computers, map stand, should easily accommodate 60 students to do geography practical work without much congestion.

GEOGRAPHY PRACTICAL SCORE WEIGHTAGE

Type of questions	No. of questions	Score per questions	Total score
On the spot	4	2	8
Drawing	4	3	12
Calculation	4	2	8
Computer aided	1	4	4
Field visit report			2
Viva			2
Practical record			4
Total			40

SAMPLE QUESTION PAPER

Total Score : 40

Time : 3 hours

On the spot

Answer Any Four

(4x2 = 8)

1. Identify the types of map displayed.
2. Mention the direction of the given object with reference to your position using magnetic compass.
3. Identify the features from the given satellite imageries.
4. Find out the precise location of the given object using GPS.
5. Identify any two settlements of the areas depicted in the given toposheets.
6. Identify the latitude and longitude of the given place with the help of an atlas or a wall map or a globe
7. Write the marginal information of the given toposheet.

Drawing

Answer Any Four

(4x3 = 12)

1. Draw a graphical scale for the RF 1: 50000.
2. Construct the graticules of conical map projection with one standard parallel for a map scale 1: 20,000,000 with the projection interval 150 extending from 90° W to 90° E of the northern hemisphere.
3. Draw the contour cross section and profile for the photograph of the landforms.
 - a. Waterfall
 - b. 'V' shaped valley.

4. Prepare a layout plan using the given data by choosing an appropriate scale.
 - a. An area with 1500m length and 1000m width.
 - b. A perennial river flowing from north to south direction.
 - c. A paddy fields spread over the SW corner.
 - d. A metalled road running W to E, crossing the river at the centre of the region.
 - e. Broad gauge railway line running parallel to the metalled road.
 - f. A perennial pond located close to the bridge and to the south of metalled road.
5. Draw a frequency polygon with the given data.
6. Draw a choropleth /Isopleth /Dot map with the given data. (Outline map will be provided)

Calculation

Answer Any Four

(4x2 = 8)

1. Convert the given scale as directed.
 - a. RF to Statement.
 - i. RF 1: 100000.
 - ii. RF 1: 126720.
 - b. Statement to RF.
 - i. 4cm represents 1 km.
 - ii. 1 inch represents 1 mile.

2. Calculate the local time for the following places when IST is 10am on 20th June 2015.
 - a. London (00)
 - b. New Orleans (900W)
3. Calculate the mean, median and mode for the following data.
4. Calculate the actual road distance between the given places from the toposheet provided.

Computer aided.

Answer Any One

(1x4 = 4)

1. Calculate the mean of the given data.
2. Prepare frequency polygon/ Ogives for the given data using computers.

Viva	2
Field visit report	2
Practical record	4

Guidelines for Practical Examination, 2023

Term-end evaluation is an important aspect of assessment. Along with term-end evaluation at the end of an academic year, practical evaluation (PE) is to be conducted. PE is the term-end assessment of the lab work done in the academic year. There is a slight variation in the syllabi of Computer Science, Computer Applications (Commerce) and Computer Applications (Humanities) for the academic year 2022 – 23. Obviously it will reflect in the practical examination also.

Syllabifor ComputerScience and Computer Applications (Commerce)

1. Programming in C++ (Minimum 8 problems)

- if – else statements
- switch statement
- Looping statements
- Array manipulation

2. Developing HTML documents (Minimum 5 problems)

- Basic tags, tag
- Lists
- Hyper-linking
- Table

3. Database queries using MySQL (Minimum 2 problems)

- Two tables should be identified and queries should be designed in such a way that all clauses, operators and aggregate functions are to be covered.

Syllabusfor Computer Applications (Humanities)

1. Office packages and Image processing

(Minimum 8 problems – 2 from each Application)

- Word Processing
- Spread Sheet
- Presentation Software
- Image Editing

2. Developing HTML documents (Minimum 5 problems)

- Basic tags, tag
- Lists
- Hyper-linking
- Table

3. Database queries using MySQL (Minimum 2 problems)

- Two tables should be identified and queries should be designed in such a way that all clauses, operators and aggregate functions are to be covered.

Practical Log Book

Practical Log Book (PLB) is a standard record book in which all the activities related to lab work are recorded. The PLB should contain a minimum of 15 works as specified in the practical syllabus. The format of recording in Practical Log Book may be as follows:

Programming in C++

LHS Page	RHS Page
<ul style="list-style-type: none">• Algorithm / Flowchart• Sample input and output	<ul style="list-style-type: none">• Problem No., Date of work• Problem statement• Source code

HTML coding

LHS Page	RHS Page
<ul style="list-style-type: none">• Tags and attributes required• Printout of resultant page (if possible)	<ul style="list-style-type: none">• Problem No., Date of work• Problem statement• HTML code

Database queries using MySQL

LHS Page	RHS Page
<ul style="list-style-type: none">• Tables with sample records• Output of queries	<ul style="list-style-type: none">• Problem No., Date of work• Table structure and queries• SQL statements

Office packages

LHS Page	RHS Page
<ul style="list-style-type: none">• Menus / Tools used• Printout of resultant page (if possible)	<ul style="list-style-type: none">• Problem No., Date of work• Problem statement• Procedure required

Practical Evaluation (PE)

- The following are the guidelines to be followed while conducting PE.
- The questions should strictly be from the prescribed syllabus.
- Examination will be of 3 hours duration and maximum score will be 40.
- Practical evaluation will be conducted in batches. The maximum number of students in each batch is limited to 15.
- Students must attend the PE with Practical Log Book. It should contain a minimum of 15 programs covering the practical syllabus as described earlier. Practical Log Book should be certified by the teacher-in-charge. The same should be verified and signed by the external examiner.
- There will be two parts in the question paper. Part A contains questions from C++ programming area for Computer Science and Computer Applications (Commerce), and from Office packages in the case of Computer Applications (Humanities). Part B contains questions for web applications from the respective syllabus. A candidate has to attend two questions – one from Part A and the other from Part B.
- Once the learner is assigned the questions, he/she should write the source code/ procedure/statements for the given questions and submit it to the examiner. The examiner checks the correctness of the logic or procedure and allows doing it on the computer if found correct. If the logic or procedure is approximately 70% correct, some clues or hints may be given and the student is allowed to try on the computer. The student may be allowed to change the question within half an hour, if the question is found unanswerable. In such cases, score should be deducted appropriately.

- The score distribution for each question in C++ should be as follows:
 - Logic of the solution (Program coding) – 10 score
 - Debugging skills (Error correction and execution) – 6 score
- The score distribution for each question in web application should be as follows:
 - Proper tags and attributes (Script if required) – 10 score
 - Debugging skills (Error correction and execution) – 6 score
- The score distribution for each question in Office packages should be as follows:
 - Procedure/Formula/Menus & Commands/Tools – 10 score
 - Creativity and formatting ability – 6 score
- Total score for 2 questions – 32 score
- Practical Log Book – 4 scores
- Viva voce – 4 scores
- Total score for PE – 40 score

Sample Questions for Computer Science

Part A: Programming in C++

1. Input three numbers and find the largest.
2. Find the roots of a quadratic equation by inputting the three coefficients.
3. Input a day number and display the corresponding day name of a week using switch statement.
4. Find the sum of the squares of the first N natural numbers without using any formula.
5. Find the sum of the digits of an integer number.
6. Find the factorial of a given number.
7. Input an integer number and check whether it is palindrome or not.
8. Create an array of N integer numbers and find the largest.

Part B: Web page designing

9. Design a simple and attractive webpage for Kerala Tourism. It should contain features like background colour/image, headings, text formatting and font tags, images, etc.
10. Design a simple webpage about your school with its image as background. Create another webpage named address.html containing the school address. Give links from school page to address.html and back to school.
11. Design a webpage as shown below using appropriate list tag.

Wild life Sanctuaries in Kerala

- Iravikulam
- Muthanga
- Kadalundi

12. Design a webpage having a list as shown below.

Covid 19 Protocol

1. Wash your hands using soap
2. Wear mask covering nose and mouth
3. Keep social distance
4. Sanitize your hands frequently

13. Design a web page containing a table as shown below.

Terrestrial Planets (Source: NASA)

Planet	Day Length (In Earth hours)	Year Length (In Earth days)
Mercury	1408	88
Venus	5832	224.7
Earth	24	365.26
Mars	25	687

Part C: Structured Query Language

14. Create a table *Student* with the following fields and insert at least 5 records into the table except for the column Total.

Roll_Number Integer Primary key
Name Varchar (25)
Batch Varchar (15)
Mark1 Integer
Mark2 Integer
Mark3 Integer
Total Integer

- Update the column Total with the sum of Mark1, Mark2 and Mark3.
- List the details of students in Science batch.
- Display the name and total marks of students who are failed (Total < 90).
- Delete the student who scored below 30 in Mark3.

15. Create a table *Employee* with the following fields and insert at least 5 records into the table except the column Gross_pay and DA.

Emp_code Integer Primary key
Emp_name Varchar (20)
Designation Varchar (25)
Basic Pay Decimal (10,2)
DA Decimal (10,2)
Gross_pay Decimal (10,2)

- Update DA with 24% of Basic Pay.
- Display the details of employees with the designation 'Manager'.
- Update the Gross_pay with the sum of Basic Pay and DA.
- Display the details of employee with gross pay below 10000.

Sample Questions for Computer Applications (Commerce)

Part A: Programming in C++

- Input a number and check whether it is even or odd.
- Input a number and check whether it is positive, negative or zero.
- Input a day number and display the corresponding day name of a week using switch statement.
- Find the sum of the first N natural numbers without using any formula.
- Find the sum of the digits of an integer number.
- Find the factorial of a given number.

7. Input an integer number and check whether it is palindrome or not.
8. Create an array of N integer numbers and find their sum.

Part B: Web page designing

9. Design a simple and attractive webpage for Kerala Tourism. It should contain features like background colour/image, headings, text formatting and font tags, images, etc.
10. Design a simple webpage about your school with its image as background. Create another webpage named address.html containing the school address. Give links from school page to address.html and back to school.
11. Design a webpage as shown below using appropriate list tag.

Wild life Sanctuaries in Kerala

- Iravikulam
- Muthanga
- Kadalundi

12. Design a webpage having a list as shown below.

Covid 19 Protocol

1. Wash your hands using soap
2. Wear mask covering nose and mouth
3. Keep social distance
4. Sanitize your hands frequently

13. Design a web page containing a table as shown below.

Terrestrial Planets (Source: NASA)

Planet	Day Length (In Earth hours)	Year Length (In Earth days)
Mercury	1408	88
Venus	5832	224.7
Earth	24	365.26
Mars	25	687

Part C: Structured Query Language

14. Create a table *Student* with the following fields and insert at least 5 records into the table except for the column Total.

Roll_Number	Integer	Primary key
Name	Varchar (25)	
Batch	Varchar (15)	
Mark1	Integer	
Mark2	Integer	
Mark3	Integer	
Total	Integer	

- a. Update the column Total with the sum of Mark1, Mark2 and Mark3.
- b. List the details of students in Science batch.
- c. Display the name and total marks of students who are failed (Total < 90).
- d. Delete the student who scored below 30 in Mark3.

15. Create a table *Employee* with the following fields and insert at least 5 records into the table except the column *Gross_pay* and *DA*.

Emp_code	Integer	Primary key
Emp_name	Varchar (20)	
Designation	Varchar (25)	
Basic Pay	Decimal (10,2)	
DA	Decimal (10,2)	
Gross_pay	Decimal (10,2)	

- a. Update DA with 24% of Basic Pay.
- b. Display the details of employees with the designation 'Manager'.
- c. Update the *Gross_pay* with the sum of Basic Pay and DA.
- d. Display the details of employee with gross pay below 10000.

Sample Questions for Computer Applications (Humanities)

Part A: Word Processing / Spread Sheet / Presentation Software/ Image Editing

1. Create a new presentation file and perform the following tasks:

a. Insert the following content in the first slide

<p>TOURIST SPOTS IN KERALA</p> <ul style="list-style-type: none"> • Munnar • Kovalam • Ponmudi • Thekkady
--

- b. Change the background colour of the slide
- c. Insert a new slide and insert an image of Kerala state (provided).
- d. Insert a note to the slide as God's Own Country.
- e. Save the file.

2. Prepare an Examination Time Table using Spreadsheet software as given below

Date	Subject	Time	Venue
12/8/2021	English	10:00 - 11:00	Library hall
13/8/2021	Second Language	10:00 - 11:00	Auditorium
14/8/2021	Journalism	10:00 - 11:00	Audio-Visual Room
15/8/2021	Sociology	10:00 - 11:00	Library hall
16/8/2021	Computer Applications	10:00 - 11:00	Computer Lab.

- a. Save the file with name 'EXAM'.
- b. Bold face all column titles.
- c. Make the contents of the entire cell Italic.

- d. Change the row height to 1.2
 - e. Increase the column width of the table to fit the contents of the cells in a single line.
 - f. Insert a new column with column title 'Sl.No.' as the first column.
 - g. Save the worksheet again.
3. You are supplied with the image of a car (car.jpg). Open the file in GIMP and perform the following operations:
- a. Rotate the picture to 40 degrees.
 - b. Flip the picture
 - c. Shear the picture.
 - d. Save the picture after each activity with different names.
4. Open a new presentation file and perform the following activities
- a. In the first slide type the matter "PROTECT OUR ENVIRONMENT".
 - b. Bold face the matter and change size to 16.
 - c. Insert a picture (provided) as the back ground.
 - d. Duplicate the slide.
 - e. Change the content to "PLANT MORE TREES".
 - f. Insert a video file (provided).
 - g. Save the file.
5. Open a file in GIMP. Create the picture of Indian national flag. Save the file with name 'INDIA.XCF'. Export it to 'jpg' format.

6. Open a new document in Writer. Type the following matter and do the given tasks:

MICROCOMPUTERS

The Microcomputer has the lowest level capacity. The machine has memories that are generally made of semiconductors fabricated on silicon chips. Large-scale production of silicon chips began in 1971 and this has been of great use in the production of microcomputers. The microcomputer is a digital computer system that is controlled by a stored program that uses a microprocessor, a programmable ROM and a RAM. The ROM defines the instructions to be executed by the computer while RAM is the functional equivalent of computer memory.

- a. Save the file with name 'COMPUTER'.
- b. Centralise the heading 'MICROCOMPUTER'.
- c. Change the font face of the paragraph to 'Ubuntu' and font size to 14.
- d. Bold face and underline the paragraph heading.
- e. Change the colour of the heading text to Green and paragraph text to Blue.
- f. Copy the first sentence of the paragraph and place it at the end.
- g. Change the line spacing of the paragraph to double spacing and justify the paragraph.
- h. Save the document.
- i. Change the line spacing of the paragraph to double spacing and justify the paragraph.
- j. Save the document.

7. Some data about students are given below. Convert the data directly into tabular form using the word processor.

ClassNo	Name	Sub1	Sub2	Sub3	Total
1	Aneesh	50	45	55	150
2	Parvathi	50	40	50	140
3	Sreedev	40	30	50	120
4	Sreedhar	40	40	30	110
5	Rahul	50	50	40	140

Hint. The text separator is comma (,)

- a. Save the file as 'MARKLIST.ODT'.
 - b. Insert a new row in between 3rd and 4th row and enter a sample record.
 - c. Format the table using an attractive pre-defined format.
 - d. Remove the last column of the table.
 - e. Remove the 4th row of the table.
8. Using the word processor (Libre Office Writer), create a leave letter addressed to your class teacher, requesting for one day leave. Perform the following activities also in the same document
- a. Save the file as 'Leave.odt'.
 - b. Bold face the 'From' and 'To' addresses appearing in the document.
 - c. Change the font size of above addresses to 12.
 - d. Make the body of the letter justify within left and right margins.
 - e. Change the line spacing of the body of the letter to double and font size 11.
 - f. Right align the name and signature at the end of the document.
 - g. Save the file again.
9. Create a Presentation on the topic Electronic waste with minimum five slides.
- a. Save the file with name 'E-WASTE'.
 - b. Insert suitable pictures.
 - c. Set slide transition and slide show timings.
 - d. Save the file.
10. Design a sign board (poster) picture to spread the message 'NO SMOKING' on the 'World Tobacco Day'. Save the file with name 'LIFE'.
11. Create a presentation (minimum 5 slides) about various sports / games popular in India.
- a. Save the file with name 'SPORTS'.
 - b. Insert suitable pictures.
 - c. Set slide transition and slide show timings.
 - d. Save the file.
12. You are supplied with images of various modes of environment pollution. Create an attractive collage. Save the file with name 'POLLUTION'.

Part B: HTML

1. Design a simple and attractive web page for Kerala Tourism. It should contain features like background colour/image, headings, text formatting and font tags, images, etc.

2. Design a webpage as shown below using appropriate list tags.

Permanent members in UN Security Council

- Russia
- China
- USA
- UK
- France

3. Design a simple web page about your school. Create another web page named address.html containing the school address. Give links from school page to address.html.
4. Design webpage for blood donation camp in your locality. The page should be formatted with background color, heading, text formatting, font tags, image, etc.
5. Design a web page containing a table as shown below.

Speed Limits in Kerala

Vehicles	Near School (In Km/hour)	Within Corporation / Municipality(In Km/hour)	In other roads (In Km/hour)
Motor Cycle	25	40	50
Motor Car	25	40	70
Light Motor Vehicles	25	40	60
Heavy Motor Vehicles	15	35	60

6. Prepare an HTML document to create the following Table

STRENGTH OF THE SCHOOL

Batch	No of boys	No of Girls	Total
Science	30	20	50
Commerce	32	18	50

7. Design a web page as shown below using appropriate list tags.

Top Arts Colleges in India

1. Lady Shriram College for Women, Delhi
2. Loyola College, Chennai
3. St. Stephen's College, Delhi
4. St. Xavier's College, Mumbai
5. Miranda House, University College for Women, Delhi

8. Design a web page that displays the following table.

Student Details

Class	Science	Commerce	Humanities
Plus One	49	50	48
Plus Two	50	50	49

Part C: STRUCTURED QUERY LANGUAGE

1. Create a table Student with the following fields and insert at least 5 records into the table except for the column Total.

Roll_Number Integer Primary key

Name Varchar (25)

Batch Varchar (15)

Mark1 Integer

Mark2 Integer

Mark3 Integer

Total Integer

- a. Update the column Total with the sum of Mark1, Mark2 and Mark3.
- b. List the details of students in Commerce batch.
- c. Display the name and total marks of students who are failed (Total < 90).
- d. Display the name and batch of those students who scored 90 or more in Mark1 and Mark2.
- e. Delete the student who scored below 30 in Mark3.

2. Create a table Employee with the following fields and insert at least 5 records into the table except the column Gross_pay and DA.

Emp_code Integer Primary key

Emp_name Varchar (20)

Designation Varchar (25)

Department Varchar (25)

Basic Decimal (10,2)

DA Decimal (10,2)

Gross_pay Decimal (10,2)

- a) Update DA with 75% of Basic.
- b) Display the details of employees in Purchase, Sales and HR departments.
- c) Update the Gross_pay with the sum of Basic and DA.
- d) Display the details of employee with gross pay below 10000.
- e) Delete all the data from the table.

3. Create a table Stock, which stores daily sales of items in a shop, with the following fields and

insert at least 5 records into the table.

Item_code Integer Primary key

Item_name Varchar (20)

Manufacturer_CodeVarchar (5)

Qty Integer

Unit_Price Decimal (10,2)

Exp_Date Date

a. Display the details of items which expire on 31/3/2016.

b. Display the item names with stock zero.

c. Remove the items which expire on 31/12/2015.

d. Increase the unit price of all items by 10%.

e. List the items manufactured by "ABC & Co" with quantity above 100.

4. Create a table Book with the following fields and insert at least 5 records into the table.

Book_ID Integer Primary key

Book_NameVarchar (20)

Author_NameVarchar (25)

Pub_NameVarchar (25)

Price Decimal (10,2)

a. Display the details of books with price 100 or more.

b. Display the Name of all the books published by SCERT.

c. Increase the price of the books by 10% which are published by SCERT.

d. List the details of books with the title containing the word "Programming"

at the end.

e. Remove all the books written by "Balaguruswamy".

5. Create a table Bank with the following fields and insert at least 5 records into the table.

Acc_No Integer Primary key

Acc_NameVarchar (20)

Branch_NameVarchar (25)

Acc_Type Varchar (10)

Amount Decimal (10,2)

a. Display the account details of "Savings Account" in Kodungallur branch.

b. Change the branch name "Trivandrum" to "Thiruvananthapuram".

c. Display the details of customers in Thiruvananthapuram, Ernakulam and Kozhikode.

d. List the details of customers in Thrissur branch having a minimum balance of Rs. 5000.

e. Delete all the current accounts in Mahe branch.

Directorate of Higher Secondary Education

Guidelines for Lab Work and Practical Evaluation

Accountancy with Computerised Accounting

A. Syllabus for Practical

Accountancy for Class XII Commerce consists Part III Optional Computerised Accounting System. The text book covers various aspects regarding the use and application of accounting packages and database applications in accounting realities. Learning of theoretical and practical aspects of these contents are equally important and can be ensured only through the lab work. Not only for the effective transaction of contents in the syllabus, but also for attaining the learning outcomes associated with the concepts/content, practical lab work is necessary.

Areas to be covered for the practical work.

Part III Optional Computerised Accounting System is divided in to six units, and the first unit is purely theoretical, for which no lab work is necessary. The second, third and fourth units deal with electronics spreadsheet and its diverse applications in business, while the fifth unit establishes the underlying features of accounting software (GNUKhata). The sixth and last unit deals with practical aspects of managing database for accounting. Accordingly the practical areas can be broadly grouped in to three as follows:

SI_No	Area	Unit	No.of Programs
1	Spreadsheet	II, III & IV	12
2	GNUKhata	V	4
3	DBMS	VI	4
		Total	20

Table 1

SLNO	Area	II	III	IV	V	VI	Total
		Spreadsheet	Use of Spreadsheet in Business application	Graphs and charts for business	Accounting software Package	DBMS for accounting	
1	Formulas & Functions	3					3
2	Data Entry, Text Management, Cell Formatting	2					2
3	One variable, two variable and Pivot Table	2					2
4	Pay Roll Accounting		1				1
5	Asset Accounting		1				1
6	Loan Repayment Schedule		1				1
7	Graph and Charts			2			2
8	Account Groups				1		1
9	Voucher Entry				1		1
10	BRS				1		1
11	T/B, P&LA/C, and Balance Sheet				1		1
12	Creating Table					1	1
13	Creating Forms					1	1
14	Creating Queries					1	1
15	Creating Reports					1	1
	Total	7	3	2	4	4	20

Table 2.

B. Lab Work

Lab work is considered essential in promoting students' learning of Accountancy with the use of accounting software and its familiarization. Student's class room observations and various concept and ideas acquired etc can be practically implemented in the lab which will strengthen conceptual clarity and operational skills and enhance overall academic success. More over lab work in computerised accounting enables students to cope with challenges in practical accounting situations in the industry, business and other professional areas.

Every student has to practice a minimum of 20 problems, from various units as mentioned above through the lab work. Sample questions from each area, are given in Appendix-1 of this document. While selecting the minimum required questions, care should be taken to include questions in satisfactory proportion as shown in Table 1 and Table II above from all the three broad groups. A list of sample questions from these areas, based on the previously mentioned criteria, are given as Appendix-1.

Practical Log Book

All the activities related to lab work are recorded in Practical Log Book (PLB). The Practical Log Book should contain a minimum of 20 works as specified in the practical syllabus. The format of recording in Practical Log Book may be as follows :

Practical Log Book	
Left Hand Side	Right Hand Side
Output Charts/Graphs, Statements drawn (TB, B/S etc) Tables, (Print out of output/ results can also be pasted)	Problem Number Date of practical work Unit Name Area/Title Problem/Question statement Process Statements/ steps in problem solving with formulas/functions or codes, if any

Table 3

The teacher should verify the correctness of each work and sign on the bottom of the page where output is noted along with date and remarks, if any.

Procedure

The lab work should be carried out strictly under the guidance and supervision of the teacher. During the whole process of lab work, a student has to go through three phases, and they are listed below:

- 1) **Preparatory Phase:** Every student is supposed to possess adequate knowledge regarding problem to be tried out in the lab and familiarise himself/herself the steps for doing the work. Basic knowledge of the software to be used, loading the software to work with etc are presupposed. Every student should personally possess Practical Log Book while attending the lab work and the Log book should as far as possible be prepared in tune with the directions and format as shown in Table 3 above
- 2) **Tryout:** It is in this phase that the problem is actually tried to test correctness in the lab. In the case of spreadsheet, various formulas and functions may be used in the preparation of charts, management of assets or payroll preparation, which are tested to get the desired results. During the actual execution, if there is any correction or change or modification in the functions and formula statements, then such changes are to be noted down in the Practical Log Book. In Accounting software and DBMS, which are more internally controlled software, there can be some variation in steps, paths, account types, entity and attribute names, data types etc, then such changes made are also to be noted in Practical Log Book.
- 3) **Reporting:** When the problem is successfully executed in the lab, it will produce definite output /results either in the form of figures or statements. The Practical Log Book has to be updated with the final results. Students can use print out or photocopy of output and paste it in the left hand side of the Practical Log Book. After the completion of each lab work, the Practical Log Book should be submitted to the concerned teacher and get the work duly signed, before the next lab period. All remarks should be noted in the teachers diary by the teacher which may serve useful for assessing the students as a part of CE.

Teachers are expected to ensure the minimum number of problems in the Practical Log Book covering all the areas suggested for practical evaluation. The prescribed proportion among the three groups should strictly be followed in the selection of questions.

C. Practical Evaluation (PE)

Practical Evaluation(PE) is designed to measure or assess problem solving skills, and the competency in using spreadsheets in solving business and accounting problems, competency and skill in using accounting software package and database management application for accounting.

Guidelines to be followed while conducting PE:

- 1) The PE questions should cover the prescribed syllabus
- 2) The maximum score for PE will be 40
- 3) PE test shall be of three hours duration
- 4) PE will be conducted in batches consisting of 15 students per batch
- 5) PE will be conducted in the Computer Lab of the school where exam center is allowed.
- 6) Every student should attend the PE with Practical Log Book duly certified by the teacher in charge
- 7) Practical Log Book should be verified and certified by the External Examiner and Internal Examiner at the time PE is done in the Lab.
- 8) Practical Log Book should contain not less than 20 problems in proportion to the weight of area.
- 9) PE should be conducted using necessary sets of questions finalized from the pool of questions approved by the DHSE or questions issued by the DHSE.
- 10) The PE question paper may contain four parts(Part A,B,C and D). The examiner, to ensure the fair conduct of examination, may adopt appropriate strategy.
- 11)
 - a. **THREE** sets of question papers has to be prepared and for a group of 15 students five copies of each set (5 X 3 =15) should be made available for selection at a random basis. In each question paper, part A consists of three questions from **SPREADSHEET**, and the student has to attempt any two. Similarly part B contains three questions from **USE OF SPREADSHEET IN BUSINESS APPLICATIONS** and **GRAPHS AND CHART FOR BUSINESS DATA** and the student has to attempt any two. Part C and Part D contain one question each, from **ACCOUNTING SOFTWARE PACKAGE** and **DATABASE MANAGEMENT SYSTEM FOR ACCOUNTING** respectively , for which no internal choice is allowed.
 - OR
 - b. A single question paper may be prepared, in which Part A contains 9 questions from **SPREADSHEET** and the student has to attempt any two. Similarly, Part B contains 9 questions from **USE OF SPREADSHEET IN BUSINESS APPLICATIONS** and **GRAPHS AND CHART FOR BUSINESS DATA** and the student has to attempt any two. Part C and Part D contain 3 questions each from **ACCOUNTING SOFTWARE PACKAGE** and **DATABASE MANAGEMENT SYSTEM FOR ACCOUNTING** respectively and students have to *attempt* only one from each section. *If only a single question paper is prepared for the practical evaluation, the external examiner should exercise the right to choose questions to be attempted,by putting tick mark in each part of the question paper.*
- 12) It should be ensured that the computer used by a candidate does not contain previously done lab works and that all lab works are deleted before another candidate is allotted the same system. The students are not allowed to use the **help** files of the software.
- 13) During the conduct of practical examination, each student has to attend a viva

voce, which the external examiner may use to assess how far the student has attained conceptual clarity with the practical aspects of computerised accounting. Viva voce should not create sense of fear among the students. It should not be formal in the form of an interview, but as far as possible it should be casual interaction.

14) The pattern, structure and split up score of questions are given as follows.

		No Of Questions with Choice	Split Up Score		Total Questions to be attended	TOTAL	Time (180 mts)
			Process	Output			
							Writing & Doing
PART A							
1	SPREADSHEET	1	4	2	2	12	35
2	SPREADSHEET	1	4	2			35
	SPREADSHEET	1	4	2			
PART B							
5	SPREADSHEET IN BUSINESS APPLICATION and GRAPHS AND CHARTS FOR BUSINESS	1	3	1	2	8	20
		1	3	1			20
6		1	3	1			
PART C (No Internal Choice)							
7	GNUKKhata	1	4	2	1	6	35
PART D (No Internal Choice)							
8	DATABASE MANAGEMENT SYSTEM FOR ACCOUNTING	1	4	2	1	6	35
			22	10	6	32	
	Viva					4	
	Record(PLB)					4	
			Total			40	180

Question paper with 3 sets

Each set of question paper consist of:

Part A Total question THREE, attempt any TWO	2x 6 =	12
Part B Total question THREE, attempt any TWO	2x4 =	8
Part C Total questions ONE, attempt ONE	1x 6 =	6
Part D Total Question ONE, attempt ONE	1x 6 =	6

Total 32

Maximum score for Practical Log Book 4

Maximum Score for Viva 4

Total Score for PE 40

OR

Single question paper

Part A Total question NINE, attempt any TWO	2x 6 =	12
Part B Total question NINE, attempt any TWO	2x4 =	8
Part C Total questions THREE, attempt ONE	1x 6 =	6
Part D Total Question THREE, attempt ONE	1x 6 =	6
	Total	32
Maximum score for Practical Log Book		4
Maximum Score for Viva		4
	Total Score for PE	40

(External should choose the required number of questions by putting tick mark in respective sections of question paper.)

15) The time allotted is three hours and the maximum score is 40.

16) The general instructions to be given in the top of question paper is given.

Instructions to the candidates

1. Write the procedures and show the output of each questions.
2. Questions should be circled or tick marked in each sections.
3. Viva voce will be conducted based on the given practical questions.
4. The mark division consist of :

Part A	12
Part B	8
Part C	6
Part D	6
Practical log book	4
Viva voce	4

Appendix I : Pool of questions under Part A,B,C and D (Practical Evaluation)

Part A

(Attempt any TWO questions, 2x6= 12)

QUESTION NO. 1

Given below is a table showing the Name, Designation and Monthly Salary paid for different employees in Royal Traders for March 2017

Employee Name	Designation	Monthly Salary ₹
Kumar	CEO	80000
Anil	AO	50000
Jithesh	FM	40000
Alex	FM	15000
Arshad	MM	45000
Angel	FM	30000

Find out the following:

- The total monthly salary by Naming the concerned range as **TOTAL_SALARY**.
- The total monthly salary paid to the Finance Manager (FM) in the firm.
- The Name of employee with monthly salary of ₹40,000 by using **LOOKUP** Function

QUESTION NO-2

Binu obtained the following Scores out of 100 in his Higher Secondary Examination, March 2017.

Subjects	Scores
ENGLISH	85
MALAYALAM	96
BUSINESS STUDIES	76
ACCOUNTANCY	67
ECONOMICS	29
COMPUTER APPLICATION	45

Convert the above Scores into Grades for each subject based on the following criteria, by using **IF** function.

Scores	Grades
90-100	A+
80-89	A
70-79	B+
60-69	B
50-59	C+
40-49	C
30-39	D+
20-29	D
Below 20	E

QUESTION NO.3

Consider the following table.

	A	B	C	D	E	F	G	H	I	J
1	390	651			856	765	STOCK	192	CASH	1032
2	342	9899	658	456	765	398	155T	DRS	CRS	INVESTMENT

Answer the following questions using appropriate functions:

- How many cells contain Numbers only.
- Count the Number of cells contain any value.
- Count the Number of cells containing the value exceeding 1000.

QUESTION NO.4

From the following information create a Pivot Table to give country wise sales of the products

Sl No	Products	Sales Volume ₹	Country
1	SQUID	25000	CHINA
2	PRAWN	20000	AMERICA
3	CLOVE	30000	ENGLAND
4	SQUID	50000	CHINA
5	PRAWN	40000	AMERICA
6	CLOVE	15000	ENGLAND

QUESTION NO.5

Following table gives the details of some products.

Sl No	Products Code	Name of Product	Name of Supplier	Quantity
1	E-234	PUMP SETS	ARON PVT LTD.	23
2	E-546	WATER HEATER	ALPHA TRADERS	16
3	E-678	AIR CONDITIONER	AIR COOL LINKS	25
4	E-789	VACUUM CLEANER	READY CLEAN CO.	17

Enter the details into a text file (Notepad/Text Editor) and import the same to a spreadsheet.

QUESTION NO.6

Ms. Sajeev intends to apply for Civil Service examination this year. But the upper age limit is 32 as on 01/08/2016. Determine whether he is eligible to apply or not. Based on the cut off age. His date of birth is 06/09/1982 using appropriate spreadsheet functions.

QUESTION NO.7

A) Following are the scores obtained by some students in a competitive examination. Find out the HIGHEST, LOWEST and AVERAGE scores using appropriate function in spreadsheet.

	A	B	C	D	E	F	G	H
1	Name	ARUN	BIBIN	CINI	DENNY	EBIN	FABIN	GEO
2	Scores	150	180	410	480	260	161	515

B) From the data given below Fill the Address in F2 using CONCATENATE Function.

	A	B	C	D	E
1	Name	House Name	Place	Post	PIN
2	JAYA	DEEPAM	NEWSTREET	KOZHICODE	680534

QUESTION NO.8

A) From the following Table, find out the **BASIC PAY** of Mr. Ajith using **VLOOKUP** Function using EMPCODE 1846

EMPCODE	NAME	BASIC PAY
1512	VINU	7000
3475	AKHIL	11500
1846	AJITH	8500
5432	SONU	6000

B) From the following details, Find out the actual profit for **QUARTER II** using **HLOOKUP** Function

	QUARTER I	QUARTER II	QUARTER III	QUARTER IV
TOTAL SALES	20,000	30,000	45000	50000
TOTAL COST	15,000	18000	43000	37000
PROFIT	5000	12000	2000	13000

QUESTION NO.9

The XYZ Company Ltd. Furnishes you the list of their employees and their taxable income.

NAME	SEX	TAXABLE INCOME	TAX
SHIBU	Male	239000	
SULAIMAN	Male	475000	
SASI	Male	525000	
AJITHA	Female	425000	
HUSAIN	Male	600000	

Compute tax based on the following criteria by using appropriate function in spreadsheet.

- If Taxable Income is below 250,000 Tax is NIL
- If Taxable income is 250,000 to 500,000 Tax rate is 10%
- If Taxable Income is above 500,000 Tax rate is 20%

QUESTION NO.10

Assume that your School have only Commerce and Science batches. You are required to enter the following list of students after creating the **data validation**.

Data validation Rules are

- a) **Age** should be between 15 and 20.
- b) The **Batch** must limit to Commerce and Science.

Admission No	Name	Batch	Age
1231	AYYOOB	COMMERCE	16
1232	ARSHAD	SCIENCE	15
1233	DONA	COMMERCE	17
1234	FIDHA	COMMERCE	16
1235	FADWA	SCIENCE	15

QUESTION NO.11

List of Debtors and the amount dues from them are given below. Apply Conditional formatting to high light receivables with date that have expired on 31/01/2016. Also highlight the receivables more than ₹35000 with red colour.

Sl No	Name	Amount of receivables	31/01/2016
1	JIBY	25000	28/01/2016
2	JINU	30000	15/01/2016
3	GRACE	45000	15/01/2016
4	LUCY	37000	31/03/2016
5	BABU	32000	18/01/2016

QUESTION NO.12

A company proposes to invest 10,00,000 by installing a plant and machinery with expected cash inflow of ₹ 4,00,000, ₹ 3,50,000, ₹ 2,75,000 and ₹ 2,25,000 respectively for 4 years of its life. Find out the Net Present Value of the project using appropriate spreadsheet Function. The Normal rate of return of business is 20%.

QUESTION NO.13

Consider the following information

- Loan amount – ₹300,000
- No. of Payments – 48 months
- Annual Rate of interest – 10%
- Prepare a one variable table showing the repayment of the above loan in different number of payment such as 12 months, 24 months, 36 months, 48 months, 60 months and 72 months. Use PMT Function.

Question 14

Mr. ShyamLal took a loan of ₹200,000 from State Bank Of India, Cherukara and No. of Instalments is 84 months. Calculate the rate assuming payments ₹3300 per month using appropriate spreadsheet Function.

Part B

(Attempt any TWO questions, 2x4=8)

Question 15

The total commission earned by Mr.Vinod and Mr. Thomas for the year 2013 – 2017 are given below:

Year	Mr. Vinod	Mr. Thomas
2013	8910	6880
2014	14000	9800
2015	12000	14880
2016	15150	14300
2017	15950	13890

- Present the data in a column chart
- Change the chart type to line chart

Question 16

Draw a pie chart for the following data on vehicles registered in the motor vehicles department during 2016 – 2017 in a city.

Vehicle Type	Bus	Truck	Auto rickshaw	car	Two wheeler	Heavy Vehicle
Number of vehicles	575	5889	12345	9765	23456	65

Question 17

Draw a column chart for the following data and give a title **Marks Scored by Students**.

Marks	0-20	21-40	41-60	61-80	81-100	Total
No. of Students	113	180	350	232	125	1000

Question 18

Below are the details of various assets in a firm. Calculate depreciation under straight line method using spreadsheet software.

Asset	Cost of Purchase	Installation charges	Transportation charges	Pre-operating expenses	Salvage value	Life in years
Machinery	20000	2000	4600	1200	2000	10
Furniture	40000	3500	1500	500	3000	8

Question 19

ABC Ltd. purchased a machine on 01-01-2017 for Rs. 200000 and spend Rs. 10000 for the installation. The machinery was installed on 10-01-2017. The expected salvage value is Rs. 8000, at the end of its useful life of 10 years. Calculate annual depreciation under SLN method using spreadsheet.

Question 20

A machinery was purchased on 1st April 2013 for Rs. 200000. Its estimated life is 10 years with salvage value of Rs. 20000. Accounting year is 1st April to 31st March every year. Using built-in function (Spreadsheet) calculate depreciation under the Diminishing Balance Value method for 5 years.

Question 21

The following are the details of a plant and machinery under WDV method using spreadsheet.

Name of Asset	Plant & Machinery
Date of purchase	10/07/2010
Date of installation	20/07/2010
Cost of Plant & Machinery	300000
Installation Cost	50000
Pre-operating cost	10000
Salvage Value	30000
Expected Life of Asset	8 years
1 st year end date	31-03-2011
Period	1

Question 22

Prepare payroll of the following employees

Name	Basic Pay	PF Loan
Sindhu	39500	11100
Ashly	41500	11800
Unni	41500	11300
Ranjith	54000	0
Bindu	48000	11700
Ambily	48000	11850
James	41500	12000
Thara	62000	0
Arun	33500	12000
Rahim	38000	5500

Additional Information

1. DA – 36% of Basic Pay
2. HRA – Rs.1750 for employees Basic Pay greater than Rs. 52000, for others Rs.1500.
3. TA – 400 per Employee
4. PF subscription – 10% for Gross Pay.
5. TDS – 20% for Gross Pay greater than Rs. 60000, otherwise 10%

Question 23

Mr. Binu has taken a loan of Rs. 500000 from a bank, interest @ 10% per annum . The loan is repayable over a period of 10 years in monthly installments . Prepare a loan repayment schedule by showing outstanding balances for the first year (Hint: Use PMT function)

PART C

(Attempt ONE question, 1x6=6)

Question 24

The various transactions relating to Zion Chemicals for the month of January 2016 is given below. Ascertain cash balance for the month using an accounting software.

Jan 1. Started business with cash Rs. 50000

Jan 1 : Purchased office furniture Rs. 4500

Jan 1 : Cash purchases Rs.25000

Jan 1 : Credit sales to Anand Rs 43000

Jan 2 : Salary to staff Rs. 12000

Jan 2 : Received from Anand Rs 17500

Question 25

Enter the following transactions using appropriate accounting vouchers and show the purchase and sales Ledgers of Karuna Traders Ernakulam.

01/01/2016 Started business with cash Rs. 150000

01/01/2016 Deposited in to SBI Rs 40000

01/01/2016 Purchased goods from Aruna Traders Rs. 25000

02/01/2016 Purchased goods Rs. 5000

02/01/2016 Sold goods Rs. 4000

02/01/2016 Purchased goods for Rs. 10000 and paid by cheque

02/01/2016 Sold goods on credit to Aneesh for Rs. 15000

Question 26

Enter the following transactions by using suitable accounting vouchers and display the profit and loss account and balance sheet.

01/06/2016 Commenced business with cash Rs. 17000

01/06/2016 Purchased machinery Rs. 10000

01/06/2016 Paid Rent of building Rs. 7500

01/06/2016 Cash deposited with Canara bank Rs. 20000

01/06/2016 Purchased goods for Rs. 8400

02/06/2016 Sold goods for cash Rs. 3260

02/06/2016 Sold goods on credit to Mr. Rajesh Rs. 2800

Question 27

Enter the following transactions in appropriate accounting vouchers and prepare the BRS as on 31/01/2017 for m/s Royal Stores

- 01/01/2017 Commenced business with cash Rs. 100000
- 01/01/2017 Open the bank Account with pnb Rs. 50000
- 02/01/2017 Purchased goods by check (No. 10051 Rs. 12000)
- 02/01/2017 Received check (No. 20101 from Alvin traders Rs. 15000)
- 02/01/2017 Issued a check (No. 10052 to bibin and Co. Rs. 4000)
- 02/01/2017 Withdraw from bank for office use Rs. 16000

On comparison of cash book with the passbook the following details were obtained

- a) Check No. 10051 was cashed on 02/01/2017.
- b) Check No. 10052 was cashed on 02/02/2017.
- c) Check received from Alvin Traders (Check No. 20101 was collected on 02/02/2017)

Question 28

Create the following ledgers in an accounting software and display the balance sheet as on 01/04/2017.

Items	Amount
Capital	250000
Loose tools	50000
Crediters	50000
Bank Loan	75000
Land and Buildings	1000000
Plan and Machinery	1000000
Motor vehicle	75000
Debtors	50000
Outstanding salary	3000
Cash in hand	30000

Part D

(Attempt ONE question, 1x6=6)

Question 29

Enter the following in a database table with the file name Emp_details.

EMP_ID	EMP_NAME	EMP_SEX	EMP_BASICPAY
100	ARUN	M	30000
101	NISHA	F	60000
102	ANIL	M	40000
103	ROOPA	F	80000

- Display the name of employees drawing BASICPAY greater than or equal to 60000.
- Display the name of employees begin with 'A'.

Question 30

A) Prepare a payroll of employees with the gross pay on the basis of the following database table.

EMP_ID	EMP_NAME	EMP_BASICPAY	DA	HRA
201	SUBHASH	40000		250
202	GEETHA	41500		250
203	SAJNA	48000		250
204	AKHIL	54000		250

(DA - 20% of BASICPAY)

- Display the salary details of the employees whose names ending with 'A'.

Question 31

Create a database table named TABLE_EMPLOYEE and enter the following details using a form.

EMP_ID	EMP_NAME	BP	HRA
1001	MAJEED	10000	1500
1002	ABHILASH	20000	1500
1003	SUNIL	30000	1500

Also create a query to display EMP_NAME and BP.

Question 32

From the following details calculate Total cost and profit/lost of each quarter for the year 2016-2017 by using appropriate query.

QUARTER	SALES	COST	ADM_EXP	SELLING_EXP	TOTAL_COST	PROFIT_LOSS
Q1	80000	45000	5000	2000		
Q2	60000	35000	5000	3000		
Q3	50000	30000	6000	4000		
Q4	40000	30000	7000	5000		

Question 33

Create database tables named EMPLOYEE and PAY_DETAILS with the following field names.

Table name	Fields
EMPLOYEE	EMP_ID, EMP_NAME, EMP_SEX
PAY_DETAILS	EMP_ID, BP, DA, HRA

Create relationship between these two tables.

Question 34

Create STUDENT table in database with the following fields.

Field name	Data type	Field width
STUD_NO	Text	5
STUD_NAME	Text	25
SEX	Text	1
PLACE	Text	20
CLASS	Text	10

(Hint: Classes are Science, Commerce and Humanities)

- Enter six records with imaginary details.
- Prepare of report of students from commerce class.

**COMMUNICATIVE ENGLISH
PRACTICALS**

**ASSESSING SPEAKING AND LISTENING SKILLS
(Suggested Activities)**

Scheme of Examination

Teaching speaking is a very important part of second language learning. The revised Communicative English text book for the higher secondary classes lays stress on developing listening and speaking skills providing a rich environment with collaborative activities, authentic materials and challenging tasks. So the practical exam should focus on assessing the four skills (LSRW) associated with language learning.

LISTENING (5 + 5 = 10 Score)

The students will be assessed on:

- a) **To play an audio text** (short episodes / passages / stories / news bulletin / speeches by famous personalities (not exceeding 5 min.) The Students listen to this play-back and answer questions in a sheet of paper (containing 5 questions). **Auditory Comprehension** (5 score).
Time for this exercise for the response of the students will be approximately 10 minutes.
- b) **To play a face - to - face conversation** (not exceeding 5 minutes) through a video or audio system and the students listen to this conversation with full attention and answer 5 questions in a sheet of paper. Fill in the blanks type of questions may also be given to assess the Listening skills of the students. Time to be taken by the students for this exercise will be approximately 10 minutes. (5 score).

READING ALOUD (5 Score)

- a) Each student reads a passage aloud. While reading, the students will be assessed based on their performance in pronunciation, articulation, intonation, punctuation, pauses etc... The examiner should have to keep as many passages / exercises as required, proportionate to the number of batches. The passages / exercises should be the same for all the students of a particular batch. But it should not be repeated for other batches, there should be different passages / exercises for different batches. (5 score)

SPEAKING (15 Score)

- a) Introducing oneself / Introducing others (5 score).
- b) Short speech on simple topics on simpler themes for about 2 minutes (5 score).

(NOTE: The topics identified in the syllabus for Presentation (Speaking skills) have to be written individually one by one in separate papers or in separate cards. The students may be allowed to choose a topic through lot system. They are expected to speak on the topic chosen by them for at least 2 minutes. The selection of the topics is left to the discretion of the examiner.)

- c) Assessing the performance of the students on any of the topics given in the syllabus (5 score).

Group discussion/role play/presentation /reporting events/describing situations etc

Portfolio and Class Blog (10 Score)

Portfolio

- (1) One written product from each unit. (5 score)
- (2) Any one Project report posted on blog. (Class Blog/Personal Blog)- (5 score)

Or

Facebook/Twitter/Social media posts relevant to the topics of Communicative English textbook.

Or

Presentations (ppt or impress)

Guidelines for Higher Secondary Practical Evaluation – 2022-23

ELECTRONICS

We follow outcome focussed assessment approach in the evaluation process in the Kerala School Curriculum 2013. Term end evaluation is an important aspect of assessment. Along with term end evaluation at the end of the academic year, practical evaluation (PE) is to be conducted. A list of 13 experiments each are given below which are suitable for plus one and plus two classes. A minimum of 6 experiments each from the list are to be performed during both the years. Those performed by the students with a minimum of 12 experiments are to be considered for the final practical examination which will be conducted at the end of the second year of the course. Practical evaluation will be conducted in batches. The maximum number of students in each batch is limited to 20.

- Final practical examination will be of three hours and the maximum score will be 40.
- Any one question selected at random may be given to each student.
- Only 20 students will be permitted to attend the practical examination at a time.
- Students must attend the practical examination with a practical log book.
- Neatness in connecting equipment as per the circuit diagram, ability in observing the output , accuracy in measurement an ability in recording the data should be assessed.
- Calculation of data, sketching graph and recording final results should be assessed.
- The score distribution will be as follows.

1. Theory and principle	:	9
2. Circuit diagram	:	7
3. Setting up of circuit	:	7

4. Performing experiment	:	5
5. Measurement and recording	:	6
6. Result	:	2
7. Ascertaining the awareness relating to the particular experiment	:	4

LIST OF PRACTICAL EXPERIMENTS

First year

1. The study of the characteristic of a PN junction- forward and reverse.(use silicon and germanium)
2. The study of forward and reverse characteristics of Zener diode (repeat the experiment for two or three diodes of different break down voltages.)
3. The input and output VI characteristics of CE configuration.
4. Study of transistor switch- switch a LED on and OFF using transistor switch.
5. Study of the characteristic of LDR – resistance variation with intensity of light.
6. Study of VI characteristic of LED
7. Light detection using photodiode and phototransistors.
8. Study of half wave rectifier- measurement of ripple factor.
9. Study of centre tap full wave rectifier- measurement of ripple factor.
10. Study of bridge type full wave rectifier- measurement of ripple factor.
11. Reduction of ripple at the output of a rectifier using simple capacitor filter- repeat experiment for different value of capacitor.
12. Voltage gain measurement of a CE amplifier.
13. Study of frequency response of CE amplifier.

Second year

14. Generation of sine wave using a RC phase shift oscillator.
15. Generation of square wave using astable multivibrator.
16. Setting up of OR, AND and NOT gates and verification of truth table.
17. Familiarization of logic gate ICs.
18. Setting up of an Ex-OR gate using basic gates and verification of truth table.
19. Implementation of half adder and full adder using logic gates.
20. Design and set up of an op-amp inverting and non inverting amplifier.
21. Study of clipping circuits- simple clipper and biased clipper- positive and negative
22. Study of clamper circuits- simple clamper and biased clamper- positive and negative.
23. Study of integrator and differentiator circuits.
24. Study of zener diode voltage regulation.
25. Familiarization of voltage regulator ICs.
26. Setting up of LPF and HPF using circuits and study of their frequency response.

HOME SCIENCE

DETAILS OF PRACTICAL EVALUATION

GUIDELINES FOR PRACTICAL EVALUATION

1. The practical evaluation shall be for 3 hours duration out of 40 scores.
2. The experiments conducted during first year and second year will be evaluated together at the end of second year.
3. Any note book can be used as a practical log with index.
4. The students should submit the practical log at the time of practical evaluation.
5. All the experiments assigned for the first year should be conducted in the first year itself.
6. All the experiments should be conducted and it should be recorded in the practical log.
7. The same practical log can be used to record the experiments conducted during the second year.
8. The practical log should be evaluated and can be considered for CE.
9. The practical log may include the corrections of the teacher and remarks.
10. Viva voce should be conducted and questions related to the experiments only should be asked.
11. All the experiments conducted should have an aim, procedure and result.
12. For the preparation of value scale primary colours only should be used.

13. The students should bring only red, yellow, blue, black, white colours for practical evaluation.
14. Water colour / poster colour alone should be used.
15. The students should draw the value scale and it should be coloured.
16. The prang colour wheel should be in a circle and should be done with primary colours only.
17. The designs for colour schemes should be drawn by the students.
18. The colour schemes should be done only with primary colours.
19. Dish selected for preparation should be very simple, made from locally available and low cost food materials.
20. To calculate the nutritive of the prepared dish, use standard nutritive value tables.

Higher Secondary Practical syllabus

HSE(I)

1. Prepare a prang colour wheel using primary colours.
2. Prepare a value scale.
3. Illustrate monochromatic colour scheme.
4. Illustrate analogous colour scheme.
5. Illustrate complimentary colour scheme.
6. Illustrate split complimentary colour scheme
7. Illustrate double complimentary colour scheme
8. Illustrate triad colour scheme
9. Detect the adulterant present in the following food stuff
 - a) Milk
 - b) Channa dal
 - c) Tea leaves

SCHEME OF WORK

Term	Month Planned	Chapter	Practicals	No. of period
I term			Nil	
II term			Nil	
III term	January	11. Colour	1. Prepare a prang colour wheel using primary colours. 2. Prepare a value scale. 3. Illustrate monochromatic colour scheme. 4. Illustrate analogous colour scheme. 5. Illustrate complimentary colour scheme. 6. Illustrate split complimentary colour scheme 7. Illustrate double complimentary colour scheme 8. Illustrate triad colour scheme	Theory 18 Practical-4
III term	February	12.Consumer Education	Detect the adulterant present in the following food stuff a)Milk b)Channa dal c)Tea leaves	Theory 19 Practical-1

Higher Secondary Practical Syllabus

HSE (II)

- Plan and prepare a dish each for the following nutrients and calculate the nutritive value of the prepared dish
 - Carbohydrates
 - Protein
 - Iron
 - Calcium
 - Vitamin A
 - Vitamin C

2. Prepare separate dishes involving the following
 - Germination
 - Fermentation
 - Combination
3. Plan a day's menu for the following categories, prepare a dish from the planned meal and calculate the nutritive value (carbohydrate, protein and iron) of the prepared dish.
 - A pregnant woman (Sedentary)
 - Lactating mother (sedentary 0-6 months)
 - Adolescent Boy/Girl (16-18 years)
4. Plan a day's menu for the following disease conditions, prepare a dish from the planned menu and calculate the nutritive value (carbohydrate, protein and iron) of the prepared dish.
 - Diarrhoea
 - Fever
 - Anaemia
 - Obesity
5. Qualitative analysis of nutrient. (glucose/fructose/lactose/protein/iron/calcium)
6. Quantitative analysis of nutrients (Estimation of vitamin C in lime juice/lactose in milk)
7. Identification of fibres-cotton, silk, wool and nylon (visual inspection, burning test and microscopic test)
8. Collection of samples, identification and preparation (using coloured papers) of basic weaves (plain, twill and satin)
9. Collection and identification of knitted fabrics, felt fabrics and bonded fabrics
10. Preparation of samples -tie and dye, batik printing
11. Preparation of samples-block printing using vegetables
12. Prepare a poster on a given theme. (Theme should be based on Home science plus 1 and plus II syllabus)

SCHEME OF WORK

Term	Month Planned	Chapter	Practicals	No. of period
I Term	June	1. Basic Nutrition	1. Plan and prepare a dish each for the following nutrients and calculate the nutritive value of the prepared dish <ul style="list-style-type: none"> • Carbohydrates • Protein • Iron • Calcium • Vitamin A • Vitamin C 2. Qualitative analysis of nutrient. (glucose/fructose/lactose/protein/iron/calcium) 3. Quantitative analysis of nutrients (Estimation of vitamin C in lime juice/lactose in milk)	Theory:21 Practical:4
I Term	June	2. A Guide to Healthy Living	Prepare separate dishes involving the following <ul style="list-style-type: none"> • Germination • Fermentation • Combination 	Theory:6 Practical:2
I Term	July	3. Nutrition for self & family	Plan a day's menu for the following categories, prepare a dish from the planned meal and calculate the nutritive value (carbohydrate, protein and iron) of the prepared dish. <ul style="list-style-type: none"> • A pregnant woman (Sedentary) • Lactating mother (sedentary 0-6 months) • Adolescent Boy/Girl (16-18 years) 	Theory:14 Practical:2

I Term	July - August	4. Diet therapy	Plan a day's menu for the following disease conditions, prepare a dish from the planned menu and calculate the nutritive value (carbohydrate, protein and iron) of the prepared dish. <ul style="list-style-type: none"> • Diarrhoea • Fever • Anaemia • Obesity 	Thory:17 Practical:2
II Term	August-September	6.Introduction to fibre science	Identification of fibres-cotton, silk, wool and nylon (visual inspection burning test and microscopic test)	Thory:18 Practical:2
II Term	October-November	8. Fabric construction	1. Collection of samples, identification and preparation (using coloured papers) of basic weaves(plain, twill and satin) 2. Collection and identification of knitted fabrics, felt fabrics and bonded fabrics	Thory:17 Practical:6
II Term	November	10.Finishing with colour: Dyeing and Printing	1) Preparation of samples -tie and dye, batik printing 2) Preparation of samples-block printing using vegetables	Theory:19 Practical:6
III Term	December	12 Communication in HomeScience Extension.	Prepare a poster on a given theme. (Theme should be based on Home science plus 1 and plus II syllabus)	Theory:14 Practical:2

SCHEME FOR PRACTICAL EVALUATION

Time :3 Hrs

Score:40

PART-A

Answer any two questions from part-A

(8x2=16)

1. Prepare a prang colour wheel using primary colours.
2. Plan and prepare a dish and calculate the nutritive value of the prepared dish Carbohydrates/Protein/Iron/Calcium/Vitamin A/Vitamin C.
3. Plan a day's menu for a pregnant woman(Sedentary)/ Lactating mother (sedentary 0-6 months) /Adolescent Boy/ Girl(16-18 years) and prepare a dish from the planned meal and calculate the nutritive value (carbohydrate/protein / iron) of the prepared dish.
4. Plan a day's menu for diarrhoea/fever/anaemia/obesity and prepare a dish from the planned menu and calculate the nutritive value(carbohydrate / protein / iron) of the prepared dish.
5. Identify the given weave and prepare a sample of it. (using coloured papers)
6. Estimate vitamin C in lime juice/lactose in milk.

PART -B**Answer any two questions from part-B (5x2=10)**

1. Prepare a poster on a given theme.
2. Prepare a sample of tie and dye/vegetable block printing/batik printing.
3. Prepare a value scale.
4. Prepare a dish involving germination/fermentation/combination.
5. Illustrate monochromatic/analogous/complimentary/split/double/triad colour harmonies.

PART-C**Answer any two questions from part - C (3x2=6)**

1. Identify the weave of the given sample.
2. Identify the given fibre
3. Detect the adulterant present in the given sample.
4. Identify the nutrient in the given sample.

PART- D**Practical Record (8)****Total 40**

(Note:Scheme for practical evaluation should not be changed at any circumstances)

GUIDE LINES FOR PRACTICAL EVALUATION (PE) IN GEOLOGY

The practical evaluation at class XI& XII is meant for evaluating the ability of the learner to identify various mineral and rock specimens. Through this evaluation, the learner is expected to examine and identify:

- 1) Mineral specimens with the help of their salient physical properties.
- 2) Rock specimens based on their texture and mineralogy.
- 3) Metallic and non-metallic mineral specimens with the help of their chief diagnostic properties.

I. Content areas for PE at class XII

Unit: 1 (Mineralogy-Rock forming minerals)

Megascope identification of the following mineral specimens

- | | |
|---------------------|-------------------|
| 1. Talc | 2. Biotite (Mica) |
| 3. Muscovite (Mica) | 4. Calcite |
| 5. Fluorite | 6. Apatite |
| 7. Feldspar | 8. Quartz |
| 9. Garnet | 10. Corundum |

Unit: 2 (Petrology)

Megascope identification of the following rock specimens

A. Igneous rocks

- | | |
|------------|--------------|
| 1. Granite | 2. Pegmatite |
| 3. Basalt | 4. Dolerite |
| 5. Gabbro | 6. Basalt |

B. Sedimentary rocks

- | | |
|--------------|-----------------|
| 1. Sandstone | 2. Conglomerate |
| 3. Shale | 4. Limestone |

C. Metamorphic rocks

- | | |
|-----------|----------------|
| 1. Slate | 2. Schist |
| 3. Gneiss | 4. Charnockite |

Unit: 3 (Economic Geology)

A. Megascopic identification of the following ore/metallic minerals

- | | |
|----------------|--------------|
| 1. Hematite | 2. Magnetite |
| 3. Chalcoprite | 4. Bauxite |
| 5. Pyrolusite | 6. Galena |

B. Megascopic identification of the following non-metallic/ industrial minerals

- | | |
|--------------|-----------|
| 1. Asbestos | 2. Gypsum |
| 3. Graphite | 4. Baryte |
| 5. Magnesite | 6. Clay |

II. Practical evaluation (PE)-guide lines

1. The practical evaluation is conducted at the end of the first year course as an internal examination.
2. Practical evaluation at the end of the second year of the course shall also be conducted by an external examiner.
3. The learner shall keep with him/her a single entry practical log book containing his/her observations and the teacher's comments.
4. The evaluation done by the teacher is recorded in practical log book.
4. The first year log book can be used for recording practical works done in the second year also.
5. The practical log book will be evaluated by the external examiner during the PE conducted at the end of the second year

6. No separate viva voce shall be conducted for PE. It may be conducted based on the items given for practical work while the examination is going on.

III. Scheme of work for PE

Maximum scores for PE are 40 (both first year & second year)

Total time is 3 hours

The distribution pattern of mineral specimens, intended to be given for practical evaluation is provided herewith.

i). Four specimens from Unit I (mineralogy),

The specimens of rock forming minerals specified in the content area shall be provided.

Scores assigned to each item is 4.

Total = 16 scores (4x4 = 16 scores).

ii). Three specimens from Unit II (Petrology)

The three rock specimens, each from igneous, sedimentary and metamorphic groups of rocks shall be provided from Petrology.

Score assigned to each item is 4.

Total = 12 scores from this unit (4x3 = 12 scores).

iii). Two specimens from Unit III (Economic Geology) shall be given.

The two specimens, each from metallic (ore) and non-metallic (industrial) minerals can be given from this unit.

Score assigned to each item is 4.

Total = 8 scores from the unit 3 (4x2 = 8 scores).

iv). A maximum of 4 scores for the single entry practical log book and viva voce.

IV. Scoring key for PE

Identification of mineral specimens

Analysis of physical properties and identification of given mineral specimens: 4 scores each

The scores are distributed as follows:

- i). Identification of chief diagnostic properties of a specimen- 2 scores each
- ii). Ability to diagnose all other physical properties-1 score each
- iii). Identification and nomenclature-1 score each

Identification of rock specimens

- i). Identification of textures/ structures of a rock specimen- 1 scores each
- ii). Description of mineralogy- 2 scores each
- iii). Identification and nomenclature- 1 score each shall be given.

Guidelines for Higher Secondary Practical Evaluation 2022-23

PSYCHOLOGY (Class XII)

Psychology being a vibrant science has immense scope for application in every fields of human endeavour. At higher secondary level, students are familiarised with the basic concepts and theories of psychology. In almost every units in Psychology practicals and activities can be integrated for meaningful assimilation of Psychological concepts and theories. Teacher can administer as many as practicals as possible from the slot for practical work.

Experiments plays a crucial role in the proper assimilation of concepts in Psychology. Along with the term end evaluation at the end of the academic year, practical evaluation (PE) is also to be conducted. The skill in performing experiments is to be assessed through PE. The following guidelines are to be followed while conducting PE during the academic year 2022-23.

- Sufficient number of schedules, inventories or tests in printed form must be provided to students individually to conduct practical work.
- Practical log book should contain all the necessary recordings related to the experiment done.
- A minimum of Two practical works from first year have to be carried out from the following list.

Memory Span
Distraction of attention
Levels of aspiration
Knowledge of results
Problem solving

- A minimum of Four practical works from second year have to be carried out from the following list.

Intelligence Test
Aptitude Test
Personality Test
Self-concept Test
Adjustment Scale
Anxiety Scale

Slot for Practical Work

Standard XI

Unit No	Unit Name	Practical
1	What is Psychology	Observation Interview
2	Methods of enquiry in Psychology	Survey Case study
4	Human development	Suggestibility
5	Sensory, Attentional and Perceptual Processes	Span of Attention Distraction of Attention
6	Learning	Maze Learning Bilateral Transfer Knowledge of Result on Performance
7	Human Memory	Memory Span
8	Thinking	Problem Solving Concept Formation
9	Motivation and Emotion	Level of Aspiration

Standard XII

Unit No	Unit Name	Practical
1	Variations in Psychological attributes	Intelligence Test Aptitude Test Vocational Interest Inventory
2	Self and Personality	Personality Test
3	Meeting life challenges	Adjustment Scale
4	Psychological disorders	Anxiety Scale
6	Attitude and social cognition	Attitude Scale

Evaluation weightage for Practical Examination

First Year	10 Score
Second Year	30 Score
Total	40 Score

Detailed Score Distribution for Practical Evaluation

Experiment from Class XI topics	10 Scores
Writing Introduction, Procedure, Result, Discussion, Conclusion etc.	12 Scores
Administration of Test	8 Scores
Practical Log Book	4 Scores
Viva voce	6 Scores
Total	40 Scores

- The viva voce should be done for ascertaining the awareness of concepts related to practical. It should not create tension to the students. It should be a casual interaction with the students through simple questions related to practicals only to check whether he/she has clarity in the given work.




PRACTICAL EVALUATION



Social Work Lab

The scientific and professional characteristics of social work make it imperative to have 'practical' a dynamic component of its learning strategy. The theoretical inputs regarding social dynamism, various social work methods, therapeutic strategies, etc. will be exposed to the learner in live situations. Due weightages are given in the distribution of scores while evaluating the learner.

Guidelines

- Social awareness and community sensitization must be part of practical learning.
 - Organization and agencies chosen for exposure visit and study must be socially acceptable and 50% of it must be professionally managed.
 - Due care must be given to familiarize various methods of social work through the selection of such agencies.
 - Action or extension programme chosen must provide room for learners to plan, organize and implement the activities.
 - The staff guide must facilitate the conduct of the exposure visits concurrently or together as a block.
 - Except the exposure visits, any one of the component of the field work should be done during the first year.
 - The learners must be oriented in writing practical records, case study reports, and other relevant end products.
 - Resource mobilization and budgeting for the practical projects must be in consultation with the class PTA on a democratic basis.
- 

- An exposure visit itinerancy must be prepared involving the learners and this must be given to the parents. The consent of the parents must be obtained in writing. Agencies of visit, place of stay etc. must be mentioned in the consent letter.
- The presence of lady teachers must be ensured while taking the students for exposure visit. Mother PTA representatives can also be included in the absence of lady teachers.
- Students in groups should be involved in planning, organizing, implementing and evaluating the field exposure programme.
- End products like field visit records, action programme report, resource map, case study report, photographs etc. must be made for each corresponding programme and this must be made available for evaluation.

Components of Social Work Lab

A. Exposure Visit

A minimum of four exposure visits should be conducted. This visits can be to social welfare agencies, communities, correctional institutions, social action centres, etc. Of these four visits, two must be centres where professionally qualified social workers are employed. The learners should be facilitated to gain inputs on the history, objectives, programmes, organizational structure, methods of social work used and challenges of the agencies.

The end product of this practical component will be a record of the report of each corresponding visits. Each report should contain a minimum of four pages and should not exceed seven pages. The score for exposure visits is 20.

b. Micro Research or Case Study

Learners in convenient groups should be facilitated to undertake a small research work or a case study. This must be on any socially relevant issues like alcoholism, use of tobacco, mobile misuse, erroneous, study habits etc. Through this practical component, the students should be familiarized on the various essential steps of

scientific research methodology and sensitized on a socially relevant issue which demands social work intervention.

The product of this practical component will be a study report not exceeding ten pages compressing the title, subjective, methodology, data analysis and interpretation. The case study report must contain the profile of the case, problems, diagnosis and suggestions. It should not exceed seven pages. The score for micro research or case study is 5.

c. Extension or Action Programme

Extension, today is recognized as the third dimension of education. In social work education, extension provides ample opportunities to the learner to relate with the immediate community and intervene in socially relevant issues. The students can organize any action programme or extension activity like prominent day observations (environment day, geriatric day, poverty day, population day, human rights day, etc.) or organize community linked programme of issues like environment protection, water literacy, hygiene, organic farming, self-help groups etc. the students should be helped to given experience in planning, organizing, implementing and evaluating the programme.

The product of the component will be a report on the process and programme. It should not exceed five pages. The score is 5.

d. Social Group work

The students are facilitated to form various groups to fulfil certain developmental needs of the school/class. (Eg. Organise a career exhibition, health programme, waste management, etc.). The teacher facilitates the learner to identify suitable issues, help them to form group according to their interest, plan, organize and evaluate activities. Through this the learners are helped to observe the stages of group formation and the dynamics involved in its functioning. The product of this component is a report containing the process and dynamics of group formation and programme implementation. The report should not exceed five pages. The score is 5.

Evaluation of Practical Work

Viva voce and rapid appraisal tests are the tools for practical evaluation. This will be conducted by an external examiner with the support of the staff guide. Each learner will be personally interviewed by the external examiner. The learner should be facilitated to express his/her understanding on the scientific knowledge base of social work and the experience gained through other practical components.

The rapid appraisal test will help the external examiner to assess the knowledge, experience and skill gained by the learner. Besides, short objective type questions, the external examiner can assess the experience and skill gained by the learner through various other strategies . The learners can be asked to prepare resource maps, developmental projects, venn diagrams, problem trees, etc.

Though viva voce and rapid appraisal tests are practical evaluation tools, the range in individual performance levels (clarity, assertiveness, communication, ...) should be measured providing a maximum score of 5.

Guidelines for Practical Evaluation - Statistics

The subject statistics has a wide range of practical application in all walks of life. Use of proper data and its analysis are very important. In the present scenario of outcome based approach, the learning activities should go hand in hand with the related practical situations. Now a day's almost all data analysis can be successfully done using computers.

The guidelines for conducting practical examination for higher secondary STATISTICS are given below in detail.

There will be Practical Evaluation only for second year students, but the portions from first year also included in examination. Teachers can conduct lab works in first year itself (if needed), but the final assessment will be done only at the end of second year.

Maximum Score : 40

Maximum time allowed: 3 hrs.

Topics for PE

1.	Diagrams and graphs	Simple Bar diagram, Multiple bar diagram, Sub divided bar diagram, Percentage bar diagram, pie diagram, Histogram, Scatter diagram, Control charts using line charts(SQC).
2.	Descriptive statistics	Construction of frequency table, Mean, median, mode, quartiles, skewness, kurtosis. Normal probability, Poisson probability, binomial probability
3.	Correlation and Regression	Karl Pearson's coefficient of correlation, Regression equations, Forecasting using Regression equations, Trend line fitting (straight line), Estimation of trend values, moving averages.
4	Testing of Hypothesis	Z test - two sample for means, F test – ANOVA one variable, Chi square test for independence.

Evaluation Process

The question paper contains four sections related to the topics given above which will be supplied by DHSE to the external examiner. Each section carries 4 questions. External examiner can prepare question paper consists of four questions. External examiner should ensure that there is one question from each section. Change of question paper may be allowed with a penalty of 2 scores for each change.

Each question carries 8 scores.	8x4 = 32 scores
Record work.	4 scores
Content awareness/Viva voce	4 scores
	<hr/>
Total	40 scores

Score distribution for each question:

1. Identifying the questions	1
2. Data entry	2
3. Selecting appropriate statistical tool	2
4. Processing the data	2
5. Interpretation of the result/conclusion	1

Total Scores	8
---------------------------	----------

*** All the problems should be done using computer

For practical examination

- Computerized procedure
- Output of the problem
- Inference

Contents of Record

*Different types of problems from the PE topics cited above.

1 Diagrams and graphs

Simple Bar diagram	- one problem
Multiple bar diagram	- one problem
Sub divided bar diagram	- one problem
Percentage bar diagram	- one problem
Pie diagram	- one problem
Histogram	- one problem
Scatter diagram	- one problem
Control charts	- one problem

8 problems

2 Descriptive statistics

Construction of frequency table	- one problem
Mean, median, mode, quartiles, skewness, kurtosis.	- one problem
Normal probability	- one problem
Poisson probability	- one problem
Binomial probability	- one problem

5 problems

3 Correlation and Regression

Karl Pearson's coefficient of correlation	- one problem
Regression equations	- Two problems (Yon X and XonY)
Forecasting using Regression equations	- one problem
Trend line fitting (straight line)	- one problem
Estimation of trend values	- one problem
Moving averages	- two problems (odd,even cases)

8 problems

4 Testing of Hypothesis

Z test - two samples for means	- two problems (Population SD known & unknown)
F test – ANOVA one variable	- two problems (Row and Column)
Chi square test for independence	- one problem

5 problems

Total 26 problems

Structure of Record:

- Aim : The objective of the problem.
- Principle : Theory of the problem.
- Computational procedure : The PATH for solving the problem using computer.
- Data analysis : Computer printout or manual write up.
- Inference : Interpretation / conclusion.

Reference

Statistics made simple do it yourself on PC, by K.V.S.Sarma, Prentice- Hall of India Pvt. Ltd.
Any book related to these areas.

Gandhian Studies

Guidelines for Practicals

Based on the directions from the new curriculum revision committee, from this year onwards, a new systematic approach has been adopted for practical in Gandhian Studies. According to this scheme, there are two options and teachers have the right to choose any one:

Option 1 - Any 7 crafts from the listed 6 categories + Field visit

or

Option 2 - Any 10 crafts from the listed 6 categories

The crafts can be selected only from the listed items. No other crafts are allowed. From the given 6 categories one item from each category is compulsory. The additional crafts can be selected from any given category. If field visit is not included, additional 3 crafts are compulsory.

The 6 categories are

Category 1

- Screen printing
- Textile printing
- Vegetable printing
- Glass painting
- Fabric painting

Category 2

- Food processing (on the spot cooking)
- Bio-pesticide
- Mushroom cultivation
- Fresh flower arrangement
- Flower bouquet

Category 3

- Products using natural fibers (bag, mat etc.)
- Coir products
- Bamboo products
- Badminton /volley ball net making
- Coconut shell products

Category 4

- Metal engraving/wood carving
- Pot designing
- Embroidery
- Plaster of Paris products

- Products using waste materials

Category 5

- Agarbathy making
- Soap making (toilet or washing)
- Chalk making
- Candle making
- Umbrella making

Category 6

- Book binding (calico binding/stitch binding)
- Folding file+ Office file+ Plain cover/ office file + writing board
- Paper bag (two types)
- Beads work or Ornaments (set of ornaments)
- Interior decoration items (wall hangers, bunch of flowers, flower vases etc.)

All the works should be recorded systematically in the record book. Submit the duly signed record book for external evaluation.

Format of record book

Page 1 - Certificate

Page 2 - Index

Page 3 – Recording of craft (one by one)

Craft 1

Date

Name of the craft with category number

Aims and objectives

Materials required

Procedure

Time required

Cost of production

Skills achieved

Utility of the product

Marketing strategy

Signature of teacher

Craft 2

.....

Craft 3

.....

Craft 4

.....

Craft 5

.....

Craft 6

.....

Craft 7

.....

Field visit report or Craft 8, 9 & 10 –

Field visit report format

Certificate from the Institution visited with date

Report - Name of the Institution

Introduction

History & background of the institution

Aims & objectives of the institution

Area of operation and funding

Administrative structure

Activities of the institution

Analysis of activities in the light of Gandhian ideas

Observation and conclusion

Procedure of certain craft items

1. Screen printing

Screen printing is the method of printing designs on plastic, cloth, pen, paper, metal, ceramic and glass.

Materials required: - Frame with a screen, exposing frame, squeegee, exposing box, table, vessels, enamel tray, palette knife, stove, old newspaper, bleaching powder, waste, soap, paint (various colours) and DTP.

Method: Fix mesh on the frame. Mesh is widely available in numbers from 8 to 16. Accurate screen will only be available on the cloth with equivalent strand. Then take DTP of the required matter on butter paper. The printer and the 5 star film should be laid together. Then put the exposing frame on it. Print should bring on the film by exposing it on the sunlight. Wash the film in the liquid consisting of hydrogen peroxide and hot water with a ratio of 1:3. Again wash it in fresh water and affix it on the frame. Put the frame on the intended surface meant for printing. Pull it with the squeegee filled with ink.

2. Vegetable printing

Materials required: Fabric paints, brush (No-3), vegetables (potato, onions, ladies finger, carrot etc), cloth (minimum ½ meter)

Method: - Cut the vegetables in suitable shapes. Apply paint upon the sliced vegetables by using brush. Apply it on the cloth in desirable pattern. Allow it for drying.

3. Glass painting

Materials required: Glass piece, Glass paints, White glue (fevicol tube), buds, designs

Method :- Design of the picture meant for adorning the glass should be laid down below the glass. Then draw the outline by using white glue. After drying apply the black colour on it. Colour the inner part using desirable colours. Let it for drying. After this we can frame it.

4. Fabric painting

Materials required: fabric paint, medium cloth (50 cm), brush 0 to 6, frame, paint tray, glass, water, waste cloth, oil paper, carbon paper (yellow) and designs.

Method:- Draw the design on the cloth by using carbon paper. Put the cloth on the frame. Apply the suitable fabric paints by using brush on the framed cloth. If you paint the outlines only, then use brush no 6. Let it dry.

5. Coconut shell products

Materials required: Coconut shell, fevicol, axo blade, varnish, sandpaper.

Methods: We can make various items like cups, flower vase, spatula etc. by using coconut shell.

Clean the shell neatly and polish it with a sand paper. Cut the shell using axo blade into required shapes. Use fevicol for fixing various pieces into the required shapes. Put varnish on it and allow for drying.

6. Pot designing

Materials required: Clay pot, enamel paint-black, sand paper, varnish, clay, white glue, fabric paints, brush, emulsion paints etc.

Method: Polish the pot by using sand paper. Apply the emulsion paint on it. Again polish it with sand paper and apply the enamel paint. (It can be done without applying the paint). Make different shapes (flowers, stem and leafs, fruits, etc) by using clay. Fix it on the pot by using glue. Let it dry. Apply desirable colours on the shapes. Allow to dry. Apply varnish on it.

7. Plaster of Paris Product

Materials required: Plaster of paris, fevicol, mould etc.

Method: Mix plaster of paris and fevicol in the appropriate way. Put it over the mould. Allow to dry. Remove it from the mould. Apply suitable colours for better finishing.

8. Agarbathi making

Materials required: Charcoal dust-8kg, Wood carving powder- 38kg, kulamav powder – 8kg, perfume, agarbathi stick, sieve, water.

Method: Filter the powders using a sieve. Mix the powders well. Pour some water and perfume into the mixture and knead it like chappathi mavu. Fix the mix over the stick. Allow to dry.

9. Chalk making

Materials required: plaster of paris, water, lubricant oil, mould.

Method: Mix plaster of Paris with water. After applying oil on the mould, pour the prepared mixture into the mould. After setting, remove it from the mould and dry it in sunlight.

10. Candle making

Materials required: Wax, stove, vessel, cup, thread, mould, knife, oil, water and a large vessel.

Method: Light the stove and put an aluminum vessel on it. Put wax into the vessel and allow it to melt. Open the mould and apply oil on it. Then put the thread on it. Close the mould. Pour the melted wax on it. Dip the mould into the water in a large vessel. Allow to cool completely. Take the mould from the water and remove the candles with the help of a knife.

11. Umbrella making

Materials required: Parts of an umbrella- umbrella stick, umbrella cloth, metal bars, cap, washer, handle, thread and needle, metal thread (winding wire).

Method: Assemble the metal bar and stick together. Stitch the umbrella cloth on it. Fix the washer and cap on the top. Put the handle. Stitch the strap to hold together the umbrella cloth.

12. Book binding 200 pages

Materials required: paper , calico, card board (bind), fancy paper, binding paste or gum , thread, needle, knife, scale

Method: Cut the paper according to the double size of the type of book preferred. Divide them into 4 equal parts. Fold each part and press strongly. Set the folded

paper in such a way that the folded sides come together. Mark two points equidistant from both edges. Put another mark on the middle. Make a small hole on each marking. Using thread and needle to stitch the bundle together strongly. Cut the bind into the required size. Fix this over the stitched book with the help of calico and paper. Graft fancy paper over the bind. Put some gum over the inner side and fix the first page on the bind.

13. Folding file / Office file

Materials required: chart paper, brown paper, string, eyelet, punch, tag, scale, etc.

Method: - folding file - Fold the chart paper in the order 1" 2" and affix it. The inner part should be folded as the ½ manner. Then fix the 2 eyelets on the middle part with 4 or 5 inch distance and put a tag on it.

Office file

Materials required: card board, calico, gum, brown paper, white cotton ribbon, knife.

Method: The cardboard should be cut with proper length and width in the shape of a rectangle. Cut the calico into the required size and graft it on the side of the board. Fix the ribbon at the middle edges. Graft the middle part with brown paper and mark as the covered part comes on the front. Then make a folding with brown paper and calico and tie the ribbon on it.

14. Plain cover

Materials required: brown paper, gum, scale, pencil, paper cutter.

Method: Take a brown paper of 12" length and 9" width and blend it together. Then fold it. Do not make any folders in the frontal area. Then fold as marking ½ on the lower part. Cut away the piece inside and graft it. Again fold the upper part by marking it as 1". Cut away the portion inside and shape the side.

15. Writing board

Materials required: solid card board, calico, colour paper, gum, knife, scale, etc.

Method:- Cut the cardboard with 1meter length and 1 meter width.(you can increase or decrease the size of board according to your choice). The side should be affixed with calico and colour paper should be affixed on the upper and lower areas.

16. Paper bag

Materials required: paper, gum, knife, scale, tag, eyelet and punch, iron hammer etc.

Method:- Measurements – 24" x 18" and 10" x 8".

Take a paper with the measurement of 24" length and 18" width and affix the lengthy portions each other. Fold as the affixed side comes in the front. Fold 1" mark from both sides. Then fold as the folded inside part should come in the outer

part and the outer comes in the inside. Mark the portion as 2" and fold it. Affix the angle folded. Again mark the upper portion as 1" and fold it. Put the tag by fixing eyelet.

17. Beads works / ornament making

Materials required: beads, needle, knife, thread, cutter, player etc.

Method:- You can make bangles, ear rings and necklaces according to your imagination.

18. Fresh flower arrangement

Material required: different type of flowers, stems and leaves, flower arranging bases, scissors, thread, cello tape etc.

Method:- We can make bouquets with fresh flowers according to our imagination. Flowers can be arranged on vehicles, auditoriums, halls, and stages according to the needs.

19. Embroidery

Materials required:- cloth, thread, scissors, ribbon, needle, frame etc.

Method:- This is the method of stitching beautiful designs by hand. You can take any cloth of your choice. But be cautious while stitching the thread, it should match with cloth meant for stitching. It is better to use a thread which may not make any damage in the colour. After drawing the design put the cloth on a frame and you can do your embroidery work on it.

There are various types of stitches in the hand embroidery. 1. Running stitch – it is mainly used for stitching the outline of the leaves and flowers and also the stem of the plants. 2. Back stitch – same as the above. 3. Stem stitch – it is meant for stitching the stem of a plant. 4. Bullion stitch – meant for stitching rose flower. 5. Chain stitch – can be used in any type of design. 6. Satin stitch – meant for stitching the petals and leaves of the flowers.

20. Food products – Jam making

Material required: pineapple, induction stove, citric acid, sugar, permitted food colour, essence, spoon, mixer, measuring jar etc.

Method:- After peeling, the pineapple should be juiced in the mixer. Heat it by adding the same amount of sugar and stir it well. Then pour some citric acid till it boils well. When it reaches the stage of leaving off from the vessel, add colour and essence with it and stir it well. After cooling pack it in bottles.

21. Bio-pesticides

A. Tobacco decoction

Materials required: tobacco, water, ordinary bar soap.

Method of preparation: Steep 500 gm of tobacco in 4.5 litres of water for 24 hours. Dissolve 120 gm of ordinary bar soap separately in 0.5 litre of water. Add the soap solution to the tobacco extract and stir vigorously. Add 5 litres of water to this stock solution and spray.

B. Neem oil & Garlic emulsion

Materials required: Neem oil 200ml, Garlic 200gm, ordinary bar soap 50gm.

Method of preparation: Slice the bar soap and dissolve in 500ml lukewarm water. Grind the garlic pearls. Mix it with 300 ml water and strain to prepare garlic extract. Pour 500 ml soap solution into 200 ml neem oil slowly and stir vigorously to get a good emulsion. Mix the garlic extract in the emulsion. Dilute this 1 litre stock solution by adding 9 litres of water to get 10 litres of 2% emulsion.

22. Toilet soap making

Materials required: Coconut oil 500ml, caustic soda, stone/talcum powder, colour, perfume, water, measuring jar, 2 plastic bowls, spoon, small jar.

Method of preparation: Dissolve caustic soda in 300 ml water and keep it for six hours. Put the colour in to the small jar and mix it in 10 ml oil. Pour the remaining oil into the plastic bowl and add the stone/talcum powder. Stir well till the powder dissolves completely. Add colour and stir well. Then pour caustic soda solution and perfume. Stir well till the mixture becomes thick. Grease the mould and transfer the mixture to the mould. Let it for setting. After 24 hours remove the soap from the mould.

23. Mushroom cultivation / Oyster mushroom

Materials required: Seed, polythene cover, hay etc.

Method: While we hear about mushroom, the image into our mind is, about the mushroom that are grown with various colours and shapes in our premises on decayed tree stumps in our compound. Since time immemorial human beings have been using mushrooms as a food product. Now mushroom cultivation has developed into a state of getting mushrooms at any time and place compared to its availability only during the rainy seasons in the earlier days. As a result of the relentless perseverance of scientists and the farmers, mushroom cultivation has become easy and profitable.

Oyster mushroom cultivation is the most appropriate one for Kerala as compared to the other ones. It is suitable for any type of weather and is now available in Kerala. Mushroom cultivation will be a positive remedy to the unemployment and malnutrition in our society.

Agriculture method of oyster mushroom is very simple and less expensive. But training and experience is a minimum requirement for the successful cultivation.

The core factor of this cultivation is nothing but the availability of proper seeds and equipment. The seeds should be brought only from trusted sources or it should be made yourself.

Cultivating mushrooms in polythene cover is the suitable way. Usually hay is used as the medium for cultivation. It can also be done in the saw-dust of rubber wood. Approximately 150-200 gage polythene covers should be used for cultivation. Cover will be ready for the cultivation if you put 10 or 12 holes somewhere in the cover with a perimeter of 30 cm and a length of 60 cm.

Hay making – Hay can be used either by slicing it into small pieces (5 to 10 cm) or scrolls like wisp with an approximately 30 cm diameter and weight 500 grm. The hay should sink in the water for getting soaked up to 16-18 hours. After pouring out the water the wet hay should be boiled in water 30-45 minutes. The boiled hay after getting cool is ripe enough for sowing the seed.

Likewise the saw-dust of rubber wood can also be prepared. Put the saw dust in a gunny bag made of jute fiber into the water for getting soaked, it will be easy to heap it up. The saw dust should be left for soaking up to 18-20 hours.

Sowing method – The hay prepared as mentioned above, should put into covers which are already prepared by filling it layer by layer and then sow the seed. It is enough to sow the seed through the side of the inner part while layering each hay seed. 3-5 layers can be filled in each bed (approximately 1kg hay). The upper portion of the filled cover should be tied together. The covers should be placed in a dark room with lesser air movement. The mushroom strings will grow better in the hay layers inside the cover when it reaches 12-15 days. Then the cover should place somewhere, where we could get enough air, cooling and light.

Watering – The bed after cutting the cover should be made wet in the morning and evening after one day according to the need. It will be better to give the heat of a tube light upto 2or 3 days. The mushrooms will be sprout within 2 or 3 days and the sprouted mushrooms will be ripe enough to pluck within this period.

Harvesting – Ripened mushroom should be plucked without causing any damage to the bed. Mushrooms should be plucked without letting its roots to remain in the bed. Clean the plucked mushrooms immediately. Fill the cleaned mushrooms in poly propellin covers(approximately 200 grms) and seal it. If the sealed mushroom packets are kept in a cool environment it will remain without any damage up to 8-10 days.

The beds which have once undergone the harvest should keep dry for a day and continue the watering accordingly. The second crop will be ready for harvest within 6-7 days. If you nurture the bed with the same care, it will automatically get ready for the third harvest. Once the harvesting is over you can change the bed into fertilizers.

Diseases and insects affecting the mushrooms – There are various insects which affect the growth of the mushrooms. Bees belonging to various creeds destroy the mushroom - medium and the mushroom itself. Bees get into the holes inside and lay eggs on the plastic cover which is wrapped in the bed. Attacks from the bees increase the growth of the bacteria and consequently lead to the decay of the bed.

Insects control – Mix 10 ml gingelly oil with 1 liter water and spray on the bed. It is better to spray after 4 o'clock. Here we can save water by avoiding spraying in the evening. Likewise continue the same for 3 days. If the bodintre has gone 30% decayed, spray the sodium carbonite on the areas having green marks. It need not to be watered up to 48 hours. If it has gone 70%, the bed should be destroyed. Bury the cover after sowing sodium carbonite where the green colours are seen on the opened cover. If there is any bad smell on the span run directions, then destroy the bed immediately itself.

After each harvesting, the bed should be dissolved into 2 grms of bleaching powder and 10 liters of water and spray it in the morning and evening. It will help to kill the insects.

Plan and construction of mushroom hall – The length and width of the mushroom hall can be changed according to the need. The hut should be constructed in the east-west direction to maintain the heat inside by avoiding sunlight. There should be less light and more air movement in the mushroom hall. It is better to prefer leaf thatched hut on the plain regions and asbestos huts in the higher region where there is comparatively lower heat.

The roof can have approximately 4 meters height. It is easy to maintain heat by constructing a fake roof of 2.5 meter height from the ground. The hut should be covered around and it should have a door and a window. You can put net on the window to avoid the attack from insects and other beings. Hanging gunny bag made of jute fiber inside the hut and watering the ground and sides 2 times a day will help to maintain moisture inside the hut.

Precautions –

- Fix net on each window and door for preventing the insects and bees
- The workers engaged in the mushroom cultivation should wash their hands and legs with dettol.
- The beds once used for cultivation should not be left inattentively around the mushroom hall.
- Destroy the small bushes around the mushroom hut.

PRACTICAL EVALUATION

JOURNALISM

The practical evaluation in the subject Journalism is done at the last term of second year higher secondary course. However out of forty marks twenty marks is given for first year syllabus and the remaining twenty is given for the second year.

The following are the core areas and topics for practical evaluation.

First Year

News Reporting

- Analysis of Five Ws and one H in a news story.
- Lead writing based on Five Ws and H (*for example monsoon havoc*)
- A hard news story writing.
- A soft news story writing
- Cover a major cultural function on the campus. (*praveshanotsvam, club inauguration, youth festival etc.*)
- Cover a sports event on the campus or outside. (*for example school sports meet*)
- Cover a development news related to campus life of your locality.
- Report an environmental problem in your locality. Write a news based on it.

News Editing

- Headline writing
- Electronic editing of a story
- Rewriting a story
- Design of different types of headlines
- Electronic layout of a newspaper page-modular layout

Photo Editing

- Scaling on a software
- Cropping on a software

Production work

- Campus newspaper/magazine

Scrap book or Practical Record

Scrap book should include all the items mentioned in the first year text book. It should also reflect student's understanding of various concepts in Journalism.

Second Year

Production work

- Magazine
- Radio programme
- TV Documentary
- Blog
- User manual
- Corporate communication tool

Photographs

- Taking photographs of various shots

Anchoring or Compering

- Presentation of a radio news bulletin
- Compering a radio programme
- Presentation of a live report

Creative writing

- Feature
- Film review
- Ad copy

Scrap book or Practical Record

Scrap book should include all the items mentioned in the second year text book. It should also reflect student's understanding of various concepts in journalism.

PLUS ONE

PRACTICAL MUSIC

UNIT I

PRELIMINARY LESSONS I

(a) Sapta Svaras

(b) Varisas :- Sarali Varisas, Mandra-Madhya-Tara Sthayi varisas, Janta varisas
(5 Nos), Dhattu varisa (1 No) in three degrees of speed

UNIT II

PRELIMINARY LESSONS II

Alankaras

Sapta tala Alankaras in the following ragas

(a) Mayamalavagaula

(b) Sankarabharanam

UNIT III

MUSICAL FORMS - 1

Gita in the following ragas

1. Malahari

2. Mohanam

3. Kalyani

PLUS TWO

PRACTICAL MUSIC

**UNIT VIII
MUSICAL FORMS-1**

1. Any one Jatisvaram
 - (a) Sankarabharanam
 - (b) Mohanam
2. Svarajati - Bilahari

**UNIT IX
MUSICAL FORMS-2**

Varnam in the following ragas

1. Mohanam
2. Hamsadvani

**UNIT X
SIMPLE KRITIS**

Any two Kritis in the following ragas

1. Chakravakam
2. Kalyani
3. Bagesri