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Shantinagar,  
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**CIRCULAR**

Sub: HSE- Practical evaluation- Zoology- guidelines , scheme and model question paper for 2014-15 - reg.

Ref: Minutes of the curriculum sub committee meeting for Higher Secondary Course held on 11<sup>th</sup> November 2014 at SCERT.

The General Guidelines and Scheme of Zoology Practical Evaluation(PE) class XI and XII for 2014-15 and Model Question Paper as approved by the Curriculum Sub Committee held on 11<sup>th</sup> November 2014 at the SCERT is published herewith. The Principals of all Higher Secondary Schools are directed to follow the Guidelines and Scheme while conducting the Practical Evaluation of Zoology.

**Sd/**  
JOINT DIRECTOR(ACADEMIC)

## **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 of one and a half hours duration 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 1<sup>1</sup>/<sub>2</sub> 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 & 1<sup>1</sup>/2 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 is 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, Hinge Joint, Pivot Joint, 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 -  $\frac{1}{2}$  Score

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

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

Write one identifying character/one economic importance/one adaptation

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

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

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

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

Sketch and Labelling-  $\frac{1}{2}$  Score

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

[SCORE-1]

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

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

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

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

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

6. Draw the digestive system of cockroach. Label four parts. [SCORE-1<sup>1</sup>/<sub>2</sub>]

OR

Draw the mouth parts of cockroach. Label four parts

Diagram-1 Score

Label -<sup>1</sup>/<sub>2</sub>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-1<sup>1</sup>/<sub>2</sub>]

Experiment -<sup>1</sup>/<sub>2</sub> Score

Procedure -<sup>1</sup>/<sub>2</sub> Score

Result -<sup>1</sup>/<sub>2</sub> 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 - <sup>1</sup>/<sub>2</sub> Score

Labelling - <sup>1</sup>/<sub>2</sub>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 - 1 Score

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