

HIGHER SECONDARY PRACTICAL EXAMINATION, 2021

BIOLOGY

(Special scheme and question paper due to Covid pandemic)

BOTANY

1. **A. Dicot stem, Monocot stem, Monocot root**

Preparations-2, Diagram-1, Labelling-  $\frac{1}{2}$  (at least two main parts), Identification- $\frac{1}{2}$ , Reason-1 (two features for stem/root and other two for dicot/monocot)

*(Note: practice taking sections of any two specimens (a root and a stem) from Dicot stem/Monocot stem and Monocot root.*

2. **B. Vegetative propagules**

Bulb, Offset, Rhizome, Runner, Sucker, Tuber Name of propagule - 1, which part modified-1, Labelling – 1 (atleast two parts). *(Note: any 4 propagules should be provided)*

3. **C. Photograph of Bioreactor, Bt cotton, Cloning vector (identification- $\frac{1}{2}$ , any one reason for its identification- $\frac{1}{2}$ ).**

*(Note: i. Microscopic slides and macroscopic specimens are omitted*

*ii. Mitosis – identification of stage is omitted)*

4. **D. Physiological experiments (as per syllabus)**

Aim of experiment - $\frac{1}{2}$ , diagram- $\frac{1}{2}$ , labeling- $\frac{1}{2}$ .

*(Note: at least 4 experiments should be provided)*

5. **E. Single flower and L.S of flower** (should be mounted on a dissection microscope) belonging to Fabaceae and Solanaceae and should be provided for each batch to construct the floral formula-1 $\frac{1}{2}$ .

*(Note: family Liliaceae is omitted)*

6. **F. Lichen, Cuscuta/Loranthus, Epiphyte** (identification of interaction-1 description-1).

*(Note: Any two interactions shall be provided)*

7. **G. Identify the microscopic slide of C.S. of anther**

Diagram-1 (diagrammatic sketch of four lobed anther C.S/cellular diagram of a single lobe) labelling-1 mark (any two parts).

*(Note: Taking section of C.S. of anther is omitted)*

8. Ask informally simple questions related to the physiological experiments done-1.

**9. Practical diary-3.**

\* Issue individual materials for Q.no.1A

\* Give separate answer sheet for answering spot at sight, the material C, D and collect the answer sheet immediately after answering.

**HIGHER SECONDARY PRACTICAL EXAMINATION, 2021 –BOTANY**  
**(Question Paper)**

HSE-II

Time: 1½ Hrs

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 5

Preparation	- 2	
Labelled diagram	- 1½	
Identification	- ½	
Reason	- 1	
  
2. Observe the given specimen **B**. Score 3
  - (a) Name the vegetative propagule - 1
  - (b) Which plant part is modified - 1
  - (c) Draw a neat labelled diagram - 1
  
3. Identify the material **C** at sight by giving reasons. Score 1

Identification	- ½	
Reason	- ½	
  
4. Write the aim of the experiment **D**. Draw and label the parts. Score 1½

Aim	- ½	
Labelled diagram	- 1	
  
5. Construct the floral formula of the given flower **E** Score 1½
  
6. Write down the ecological interaction of the specimen **F** Score 2
  
7. Identify the microscopic slide, **G**. Draw diagram and label any two parts. Score 2

Diagram	- 1	
Labelling	- 1	
  
8. Ascertaining the awareness of concepts related to the experiment (Viva-Voce) Score 1
  
9. Practical diary Score 3

**HIGHER SECONDARY PRACTICAL EXAMINATION, 2021- ZOOLOGY**

**(Special Scheme and question paper due to Covid pandemic)**

HSE-II

Time: 1½ Hrs

Total score: 20

1. Identify the given **invertebrate animal**. **Score 1**  
Write one identifying character/one economic importance/ one adaptation.  
**Specify any 5 (Hydra, Liverfluke, Ascaris, Leech, Earthworm, Silkworm, Honeybee, Pila, Starfish)**  
Identification - ½ score  
One Value Point -½ score  
Time - 4 min
2. Identify the given **vertebrate animal**. **Score 1**  
Write one identifying character/ one economic importance/ one adaptation  
**Specify any 3 (Shark, Frog, Calotes, Pigeon, Rabbit)**  
Identification - ½ score  
One Value Point -½score  
Time - 4 min
3. Identify the given model or Name the marked part. Write one physiological function. **Score 1**  
**(Heart, Brain, Kidney, Ear, Eye)**  
Identification - ½ score  
Function - ½ score  
Time - 4 min
4. Identify the type of joint. Write one peculiarity. **Score 1**  
**(Pivot Joint, Ball & Socket joint,Hinge Joint)**  
Identification - ½ score  
Peculiarity - ½ score  
Time - 4 min
5. Draw the digestive system of cockroach. Label three parts. **Score 4**  

OR

Draw the mouth parts of cockroach. Label three parts  
Diagram - 1 score  
Label three parts -  $1 \times 3 = 3$  score  
Time - 15 min

6. Two samples A & B are given. Identify the samples with glucose. **Score 2**  
 OR  
 Two urine samples A & B are given. Identify the urine of diabetic patient from the samples  
 Experiment -1 score  
 Procedure - $\frac{1}{2}$  score  
 Result - $\frac{1}{2}$  score  
 Time -15 min
7. Two samples A & B are given. Identify the samples with protein/starch. **Score 2**  
 Experiment -1 score  
 Procedure - $\frac{1}{2}$  score  
 Result - $\frac{1}{2}$  score  
 Time -15 min
8. Identify the pathogen, name the disease caused by it and write one symptom. **Score 2**  
**(Plasmodium, Entamoeba, Ascaris)**  
 Identification - $\frac{1}{2}$  score  
 Disease - $\frac{1}{2}$  score  
 Symptom -1 score  
 Time -4 min
9. Identify the picture related to embryology. Sketch and label one part. **Score 2**  
**(T.S. of Testis/Ovary/Blastula of human)**  
 Identification - $\frac{1}{2}$  score  
 Sketch and labelling - $1+\frac{1}{2} = 1\frac{1}{2}$  score  
 Time -7 min
10. Viva-voce (Ask informally simple questions related to Physiological experiments) **Score 1**  
 Time-1 min
11. Practical diary **Score 3**

**Note: The following items are omitted**

- Identification of 1 analogous and 1 homologous organ
- Experiments related to bile salt/ Urea
- Action of salivary Amylase on starch
- Slide preparation of Cheek Epithelium
- Preparation of blood smear on slide
- Identification of slide of given tissue

# HIGHER SECONDARY PRACTICAL EXAMINATION, 2021- ZOOLOGY

## (Question Paper)

HSE-II

Time: 1½ Hrs

Total score: 20

### Instruction

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

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 min

2. Identify the given vertebrate animal.

Write one identifying character/ one economic importance/ one adaptation Score 1

Identification - ½ score

One Value Point -½ score

Time - 4 min

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

Score 1

Identification - ½ score

Function - ½ score

Time - 4 min

4. Identify the type of joint. Write one peculiarity. Score 1
- |                |           |
|----------------|-----------|
| Identification | - ½ score |
| Peculiarity    | - ½ score |
| Time           | - 4 min   |

5. Draw the digestive system of cockroach. Label three parts Score 4

OR

Draw the mouth parts of cockroach. Label three parts

- |                   |                 |
|-------------------|-----------------|
| Diagram           | - 1 score       |
| Label three parts | - 1×3 = 3 score |
| Time              | - 15 min        |
6. Two samples A & B are given. Identify the samples with glucose. Score 2

OR

Two urine samples A & B are given. Identify the urine of diabetic patient from the samples

- |            |          |
|------------|----------|
| Experiment | -1 score |
| Procedure  | -½ score |
| Result     | -½ score |
| Time       | -15 min  |

7. Two samples A & B are given. Identify the samples with protein/starch. Score 2

- |            |          |
|------------|----------|
| Experiment | -1 score |
| Procedure  | -½ score |
| Result     | -½ score |
| Time       | -15 min  |

8. Identify the pathogen, name the disease caused by it and write one symptom Score 2

- |                |          |
|----------------|----------|
| Identification | -½ score |
| Disease        | -½ score |
| Symptom        | -1 score |
| Time           | -4 min   |

9. Identify the picture related to embryology. Sketch and label one part. Score 2
- Identification -½ score
- Sketch and labelling -1+½ = 1½ score
- Time -7 min
10. Viva-voce (Ask informally simple questions related to Physiological experiments)
- Time -1 min Score 1
11. Practical diary Score 3