Class No. : .....

Name : .....

FY 1026

FIRST YEAR HIGHER SECONDARY SECOND TERMINAL EXAMINATION, DECEMBER 2022

Part – III

BIOLOGY

(Part – A Botany and Part – B Zoology)

Maximum : 60 Scores

Time : 2 Hours

Cool-off Time : 15 Minutes

General Instructions to Candidates :

- *There is a 'Cool off time' of 15 minutes in addition to the writing time. Further, there is a '10 minutes' preparatory time at the end of the Botany examination and before the commencement of Zoology examination.*
- *Use the 'Cool off time' to get familiar with questions and to plan your answers.*
- *Read questions carefully before answering.*
- *Write answer to the specific number of questions as instructed.*
- *Calculations, figures and graphs should be shown in the answer sheet itself.*
- *Malayalam version of the questions is also provided.*
- *Give equations wherever necessary.*
- *Electronic devices except non programmable calculators are not allowed in the Examination Hall.*

വിദ്യാർത്ഥികൾക്കുള്ള പൊതുനിർദ്ദേശങ്ങൾ :

- നിർദ്ദിഷ്ട സമയത്തിന് പുറമെ 15 മിനിറ്റ് 'കൂൾ ഓഫ് ടൈം' ഉണ്ടായിരിക്കും കൂടാതെ ബോട്ടണി പരീക്ഷയ്ക്കുശേഷം സുവോളജി പരീക്ഷ തുടങ്ങുന്നതിന് മുമ്പ് '10 മിനിറ്റ്' തയ്യാറെടുപ്പുകൾ നടത്തുന്നതിനായി നൽകുന്നതാണ്.
- 'കൂൾ ഓഫ് ടൈം' ചോദ്യങ്ങൾ പരിചയപ്പെടാനും ഉത്തരങ്ങൾ ആസൂത്രണം ചെയ്യാനും ഉപയോഗിക്കുക.
- ഉത്തരങ്ങൾ എഴുതുന്നതിന് മുമ്പ് ചോദ്യങ്ങൾ ശ്രദ്ധാപൂർവ്വം വായിക്കണം.
- എല്ലാ വിഭാഗത്തിലും നിർദ്ദേശിക്കപ്പെട്ട എണ്ണം ചോദ്യങ്ങൾക്ക് മാത്രമേ ഉത്തരം എഴുതേണ്ടതുള്ളൂ.
- കണക്ക് കൂട്ടലുകൾ, ചിത്രങ്ങൾ, ഗ്രാഫുകൾ, എന്നിവ ഉത്തരപേപ്പറിൽ തന്നെ ഉണ്ടായിരിക്കണം.
- .ചോദ്യങ്ങൾ മലയാളത്തിലും നൽകിയിട്ടുണ്ട്.
- ആവശ്യമുള്ള സ്ഥലത്ത് സമവാക്യങ്ങൾ കൊടുക്കണം.
- പ്രോഗ്രാമുകൾ ചെയ്യാനാകാത്ത കാൽക്കുലേറ്ററുകൾ ഒഴികെയുള്ള ഒരു ഇലക്ട്രോണിക് ഉപകരണവും പരീക്ഷാഹാളിൽ ഉപയോഗിക്കുവാൻ പാടില്ല.

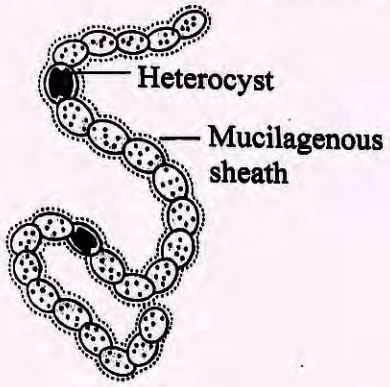
PART – A
BOTANY
Maximum : 30 Scores

Time : 1 Hour

Score

I. Answer any 3 questions from 1 – 5. Each carries 1 score. **(3×1=3)**

1) Observe the figure given below and identify the blue green algae.



2) Green, multicellular asexual buds of liverworts are called _____

a) Gemmae

b) Antherozoid

c) Zoospore

d) Conidia

3) The ground tissue of leaf is called _____

a) Guard cell

b) Subsidiary cell

c) Mesophyll

d) Epidermis

4) Several ribosome attach to a single mRNA and form a chain called _____

5) What are bulliform cells ?

Score

II. Answer any 9 questions from 6 – 16. Each carries 2 scores. **(9×2=18)**

6) a) Define prions.

b) Name a disease caused by prions.

7) Majority of pteridophytes are homosporous. But there are some exceptions.

a) What is heterospory ?

b) Name two pteridophytes which show heterospory.

8) Cell wall deposits of diatoms are called diatomaceous earth.

a) Write two uses of it.

b) Name the group in which diatoms belong to.

9) Match the following :

A		B	
a.	Red Algae	i.	Prothallus
b.	Bryophyte	ii.	Floridian starch
c.	Pteridophytes	iii.	Mycorrhiza
d.	Gymnosperm	iv.	Protonema

10) The fruit is a characteristic feature of flowering plants.

a) Fruits of coconut and mango are called _____

b) What are parthenocarpic fruits ?

11) a) Mitochondria are called as the 'power house' of cell. Why ?

b) Name the infoldings of inner membrane of mitochondria.

Score

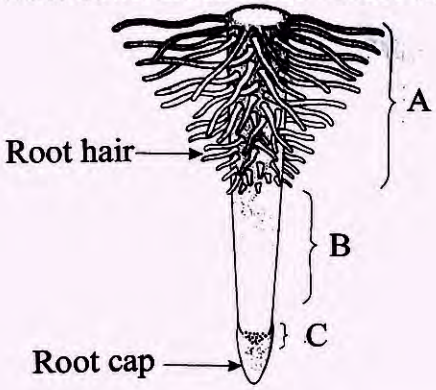
12) Given below are the characteristic features of Bryophytes and Gymnosperms. Arrange them in corresponding columns.

- Lack true roots, stem or leaves.
- Naked seeded plants.
- Sporophyll form compact strobili or cones.
- Depend on water for sexual reproduction.

Bryophytes	Gymnosperms
•	•
•	•

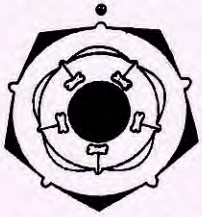
13) a) Observe the diagram and label the regions of root tip marked as A, B, C.

b) Write down the function of root cap.



14) The anatomy of dicot leaf and monocot leaf show many differences. Mention any two differences.

15) Floral diagram of family of an angiosperm plant is given below.



a) Identify the family.

b) Write any two floral character of this family.

Score

16) Differentiate between the following :

Smooth Endoplasmic Reticulum and Rough Endoplasmic Reticulum.

III. Answer any 3 questions from 17 – 20. Each carries 3 scores. (3×3=9)

17) a) Define Inflorescence.

b) Differentiate Racemose and Cymose inflorescence.

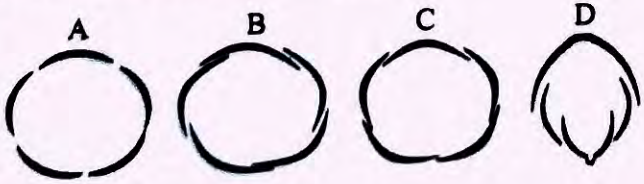
18) Identify the types of vascular bundles labelled as A and B.
Write any two features of each vascular bundle.

19) Based on the position of centromere, chromosomes can be classified into four types.

a) Name the four types of chromosomes.

b) What is a satellite ?

20) Observe the diagram given below.



a) Define aestivation.

b) Identify type of aestivation labelled as A, B, C and D.

PART – B

ZOOLOGY

Maximum : 30 Scores

Time : 1 Hour

Score

I. Answer any 3 questions from 1 – 5. Each carries 1 score. **(3×1=3)**

1) Select the scientific name of house fly from the following.

A) Mangifera indica

B) Triticum aestivum

C) Panthera tigris

D) Musca domestica

2) Identify the correct sequence of taxonomical categories.

A) Species → Order → Genus → Class → Family → Phylum → Kingdom

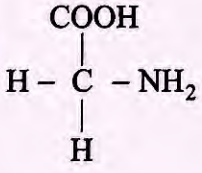
B) Species → Genus → Phylum → Class → Order → Kingdom → Family

C) Species → Genus → Family → Order → Class → Phylum → Kingdom

D) Species → Class → Family → Genus → Order → Phylum → Kingdom

3) Name the animal which is commonly called "Portuguese man of war".

4) Identify the given molecule.



5) Identify the respiratory organs of insects and earthworms from the following list.

Lungs, Tracheal System, Cuticle, Gills

Score

II. Answer any 9 questions from 6 – 16. Each carries 2 scores. (9×2=18)

6) Expand the following :

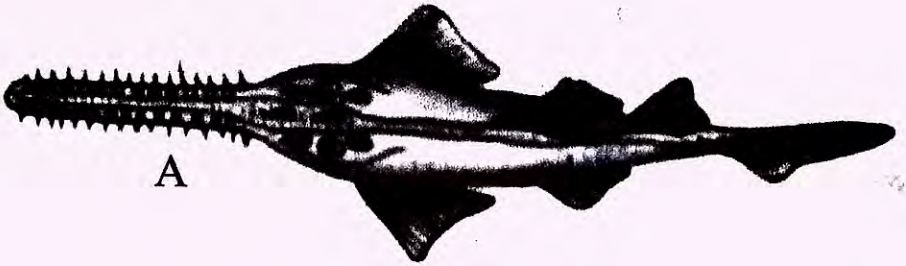
A) ICZN

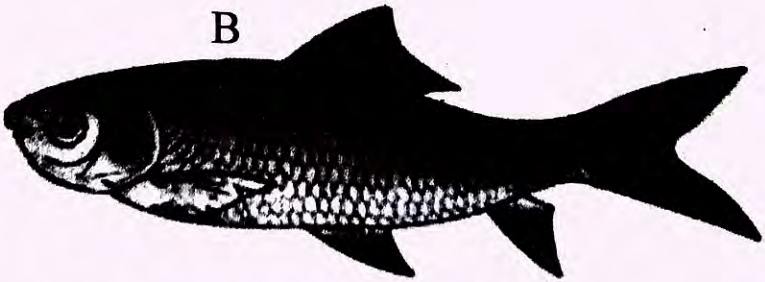
B) ICBN.

7) Match the following :

Radula	–	Hemichordata
Comb plates	–	Platyhelminthes
Flame cell	–	Ctenophora
Proboscis gland	–	Mollusca

8) Observe the pictures of animals given.





a) Identify the class in which A and B belongs.

b) Write any two differences between the classes of A and B.

Score

9) Name of few animals are given.

Hippocampus, Trygon, Equus, Penguin

A) Classify them as Poikilothermous and Homoiothermous animals.

B) Write one difference between Poikilothermous and Homoiothermous animals.

10) Grasshopper and Prawn are classified under phylum Arthropoda. Why ? Give two reasons.

11) Observe the given picture.

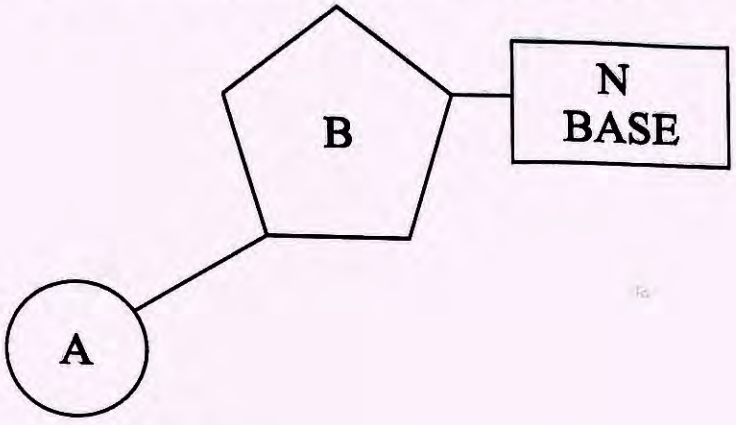
A) Identify the structure.

B) Name the phylum which possess this structure.

C) Write its function.

Score

12) Diagrammatic representation of a nucleotide is given.



a) Identify A and B.

b) The part 'B' is different in RNA and DNA. Do you agree with this statement ? Justify.

13) Observe the representation of following enzymatic reactions and identify the class of enzyme that catalyses it.

A) S reduced + S′ oxidised → S oxidised + S′ reduced

B) $S - G + S' \rightarrow S + S'G$

C) $\begin{matrix} X & Y \\ | & | \\ C - C \end{matrix} \rightarrow X - Y + C = C$

D) Joining of C – O, C – S, C – N,

14) Two polymers are given.

A) GLUCOSE — GLUCOSE — GLUCOSE — GLUCOSE

B) AMINO-ACIDS — AMINO-ACIDS — AMINO-ACIDS — AMINO-ACIDS

How does monomers are linked in each polymer ? (Name the bond.)

Score

15) Identify the following tissues.

A) Stores fat

B) Connect muscle to bone

C) Fluid connective tissue

D) Connect two bones

16) Pick out correct term from the given table and complete the following.

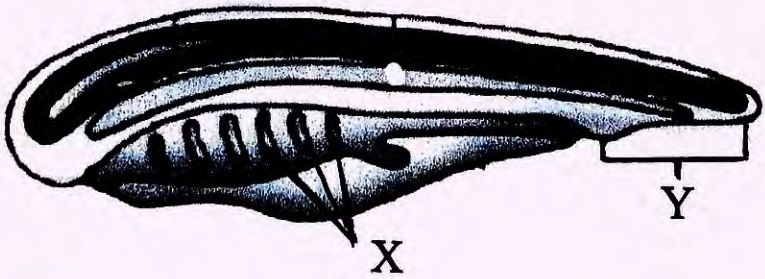
Colon, Stomach, Rectum, Jejunum, Ileum

HUMAN INTESTINE

- Small intestine
  - Duodenum
  - a _____
  - b _____
- Large intestine
  - Caecum
  - c _____
  - d _____

III. Answer any three questions from 17 – 20. Each carries 3 scores. **(3×3=9)**

17) A hypothetical animal with chordate characters are given below.

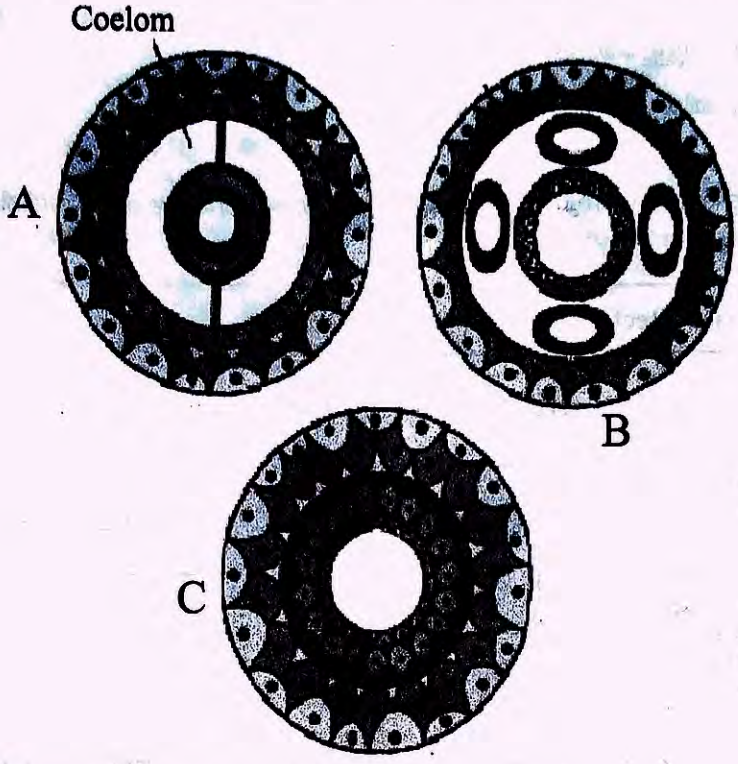


A) Identify the parts 'X' and 'Y'.

B) Write the differences between chordates and non-chordates.

Score

18) Diagrammatic sectional view of body cavities (Coelom) are given below.



a) Identify B and C.

b) Write the difference in the body cavities of A and B.

19) Mechanism of enzyme action is represented by the following equation.

$$E + S \rightarrow ES \rightarrow EP \rightarrow E + P$$

A) 'E' is enzyme. What is 'S' and 'P' ?

B) Write any two factors that affect enzyme action.

C) What happens to the enzyme at the completion of reaction ?

Score

20) Some proteins and their functions are given. Match them suitably.

A PROTEINS	B FUNCTIONS
Collagen	Hormone
Trypsin	Sensory reception
Insulin	Fights infectious agents
Antibody	Enable glucose transport into cells
Receptor	Intercellular ground substances
GLUT-4	Enzyme