

FIRST YEAR HIGHER SECONDARY EXAMINATION, MARCH 2026**Part – III****Time : 2 Hours****BIOLOGY****Cool-off time : 15 Minutes****(Botany & Zoology) Preparatory Time : 10 Minutes****Maximum : 60 Scores****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.
- Read the instructions carefully.
- 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 ബോട്ടനി പരീക്ഷയ്ക്കുശേഷം സുവോളജി പരീക്ഷ തുടങ്ങുന്നതിനുമുമ്പ് '10 മിനിറ്റ്' തയ്യാറെടുപ്പുകൾ നടത്തുന്നതിനായി നൽകുന്നതാണ്.
- ചോദ്യങ്ങൾ പരിചയപ്പെടാനും ഉത്തരങ്ങൾ ആസൂത്രണം ചെയ്യാനും 'കൂൾ ഓഫ് ടൈം' ഉപയോഗിക്കുക.
- ഉത്തരങ്ങൾ എഴുതുന്നതിനു മുമ്പ് ചോദ്യങ്ങൾ ശ്രദ്ധാപൂർവ്വം വായിക്കണം.
- നിർദ്ദേശങ്ങൾ മുഴുവനും ശ്രദ്ധാപൂർവ്വം വായിക്കണം.
- കണക്ക് കുട്ടലുകൾ, ചിത്രങ്ങൾ, ഗ്രാഫുകൾ, എന്നിവ ഉത്തരപേപ്പറിൽ തന്നെ ഉണ്ടായിരിക്കണം.
- ചോദ്യങ്ങൾ മലയാളത്തിലും നൽകിയിട്ടുണ്ട്.
- ആവശ്യമുള്ള സ്ഥലത്ത് സമവാക്യങ്ങൾ കൊടുക്കണം.
- പ്രോഗ്രാമുകൾ ചെയ്യാനാകാത്ത കാൽക്കുലേറ്ററുകൾ ഒഴികെയുള്ള ഒരു ഇലക്ട്രോണിക് ഉപകരണവും പരീക്ഷാഹാളിൽ ഉപയോഗിക്കുവാൻ പാടില്ല.

PART – B
ZOOLOGY

(Maximum : 30 Scores)

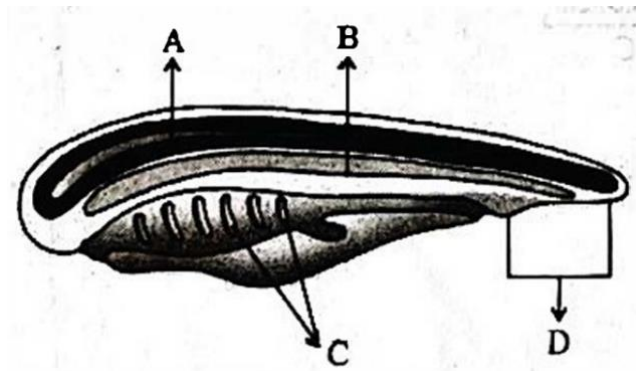
Time : 1 Hour

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

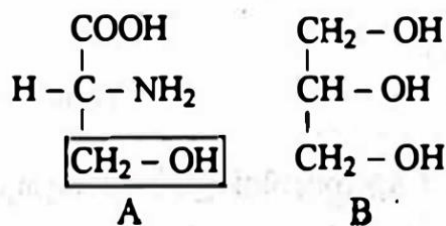
1. Arrange the following taxonomic categories in ascending order :
Genus, Family, Order, Class, Species, Phylum, Kingdom
2. When the inhibitor closely resembles the substrate in its molecular structure and inhibits the activity of the enzyme, it is known as _____.
3. Volume of air remaining in the lungs even after a forcible expiration is called _____.
4. Name the joint between the adjacent vertebrae in the vertebral column which permits limited movements.
5. A complex disorder which is associated with loss of glucose through urine, it is successfully treated with insulin therapy. Name the disease.

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

6. Observe the given figure and label A, B, C and D.

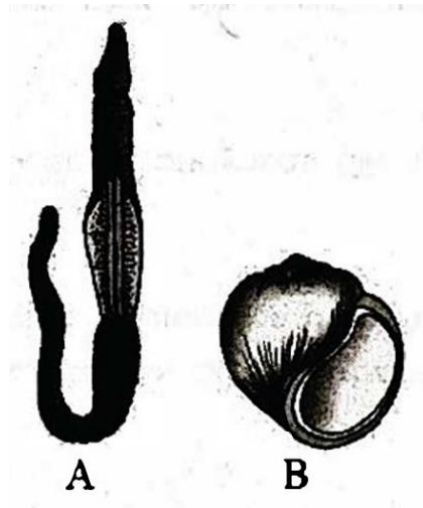


7. Identify the given biomolecules A and B.

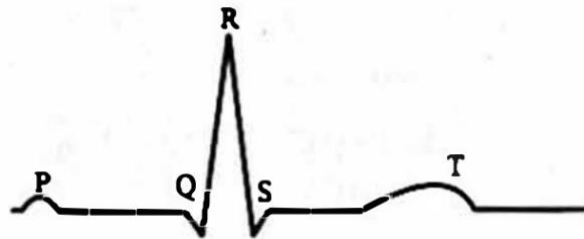


8. Differentiate aestivation and hibernation.
9. Nature of enzyme action is given below.
$$\text{E} + \text{S} \rightleftharpoons \text{ES} \rightarrow \text{EP} \rightarrow \text{E} + \text{P}$$
 - (a) Expand ES and EP.
 - (b) Write any two factors that affect enzyme action.

10. Observe the given figure.

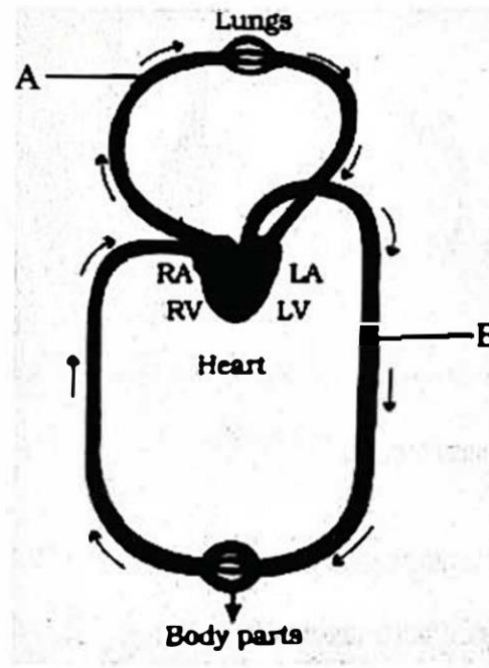


- (a) Write the name of organisms A and B.
 - (b) Identify the phyla of these organisms.
11. Write suitable terms for the following :
- (a) Bones are hollow with air cavities.
 - (b) The property of a living organism to emit light.
 - (c) Sexes are not separate.
 - (d) Warm-blooded organisms.
12. Diagrammatic representation of standard ECG is given below.



- (a) What does P-wave, QRS complex and T-wave indicates ?
 - (b) Name the machine used to obtain this graph.
13. Based on location, muscles are classified into three.
- (a) Name the three types of muscles found in human body.
 - (b) The endoplasmic reticulum of a muscle cell is known as _____.

14. Schematic plan of human double circulation is given below.

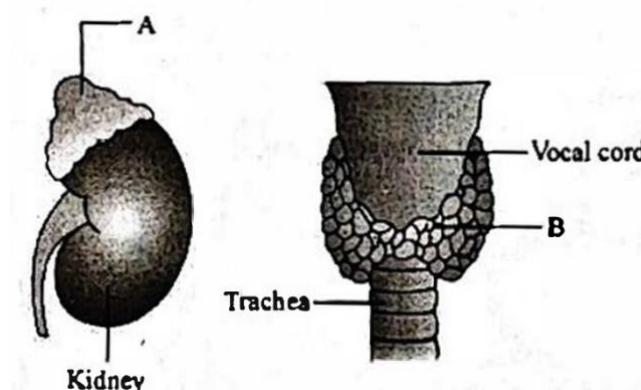


- Identify the blood vessels A and B from the diagram.
- Name the blood vessel which carry oxygenated blood from the lungs to heart.

15. Match the following :

A	B
Renal calculi	Kidney transplantation
Uremia	Stone or Insoluble mass of crystalised salts formed within the kidney
Renal failure	Inflammation of glomeruli of kidney
Glomerulonephritis	Accumulation of urea in blood.

16. Observe the diagram.



Identify the endocrine glands A and B.

III. Answer any 3 questions from 17 to 20. Each carries 3 scores.

(3 × 3 = 9)

17. Name the part of brain which control following activities :

- Body temperature, urge for eating and drinking.

- (b) Sensory association, memory and communication.
- (c) Respiration, cardiovascular reflexes, and gastric secretions.
18. (a) Accumulation of urea in blood may lead to kidney failure in some patients. Name the process to remove urea from blood.
- (b) Write any two processes involved in urine formation.
- (c) Mammals have the ability to produce a concentrated urine. Name the mechanism that maintain the concentration gradient in the medullary interstitium.
19. (a) Some changes taking place during inspiration and expiration is given below. Find out A and B.

INSPIRATION	EXPIRATION
Diaphragm and intercostal muscles contract	A
Ribs and sternum lift up	Ribs and sternum Return to normal position
Volume of thoracic cavity and lungs increase	Volume of thoracic cavity and lungs decrease
B	Intra pulmonary Pressure increase

- (b) Blood transport CO_2 from tissues to lungs by various means. Mention any two methods of carbon dioxide transport.
20. Observe the diagram and answer the following :



- (a) The above two organisms A and B belong to same phylum. Name the phylum.
- (b) Write any one example of economically important insect of this phylum.
- (c) Write any four special characters of this phylum.