Reg. No. : .....

Name : .....

FY 526

FIRST YEAR HIGHER SECONDARY MODEL EXAMINATION, FEBRUARY 2025

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 – B
ZOOLOGY

Maximum : 30 Scores

Time : 1 Hour

Score

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

1) Write one word for the following.

   a) Red coloured oxygen storing pigment in muscle.

   b) Inflammation of joints.

2) Protein part of the enzyme is called _____

3) An endocrine organ that degenerate with age.

4) Select the generic name and specific epithet from the given table and write the scientific name of housefly.

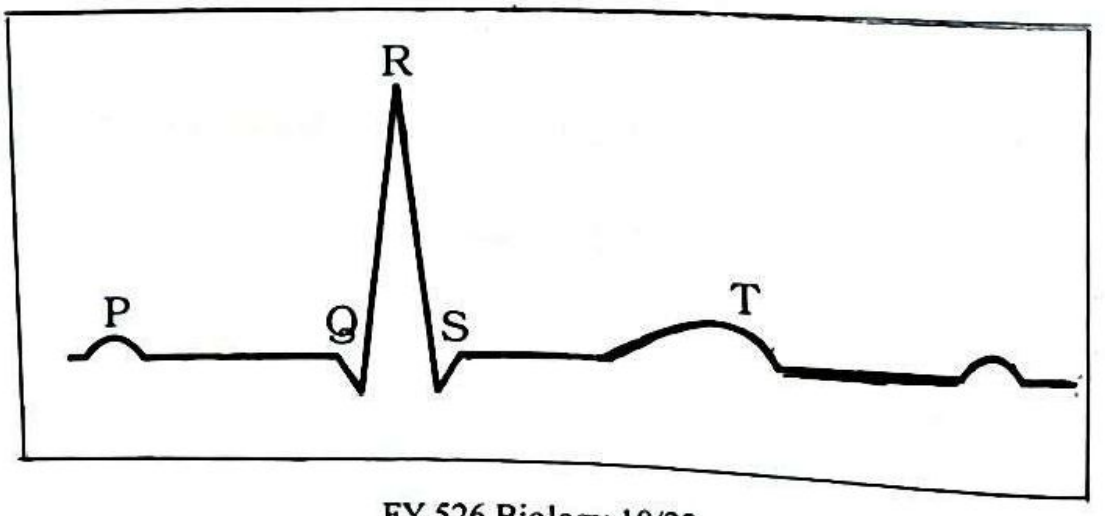
Generic Name	Specific epithet
Mangifera	domestica
Musca	indica

5) $CO_2 + H_2O \rightleftharpoons H_2CO_3$

   Name the enzyme which catalyse this reaction.

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

6) Diagrammatic representation of a standard ECG is given below.



Score

a) What does P and T wave denote ?

b) Mention the clinical significance of ECG.

7) Observe the relationship between the first pair of word and write a suitable word for the second word pair.

a) Hyperglycaemic hormone : Glucagon;

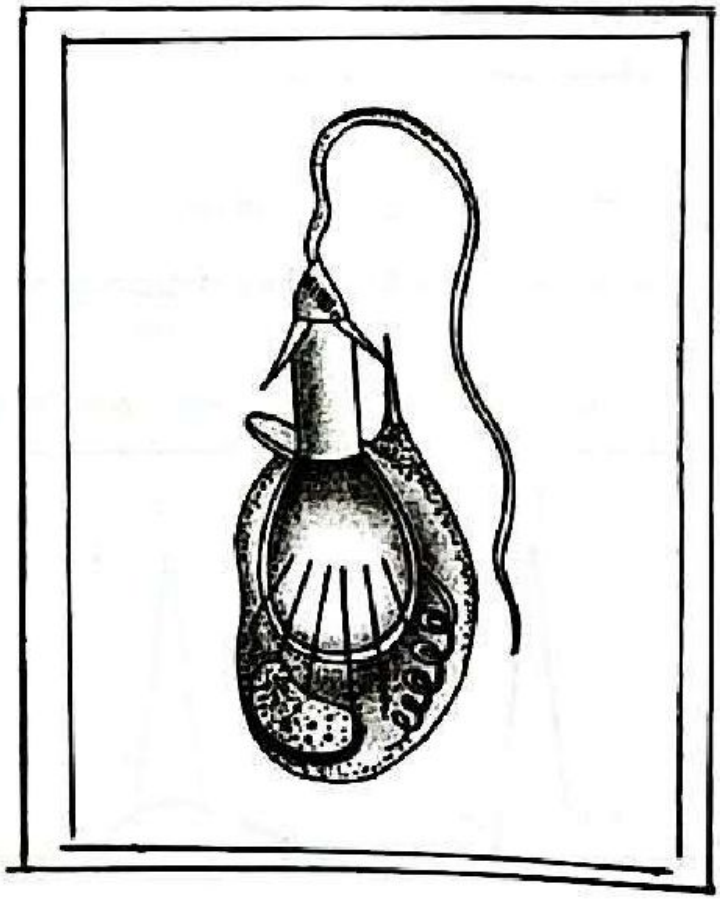
Hypoglycaemic hormone : _____

b) Hyposecretion of growth hormone : Dwarfism

Hypersecretion of growth hormone : _____

8) a) Identify the cell.

b) Mention any 2 functions.



Score

9) Co-factors are essential for enzyme activity.

a) Name any two co-factors.

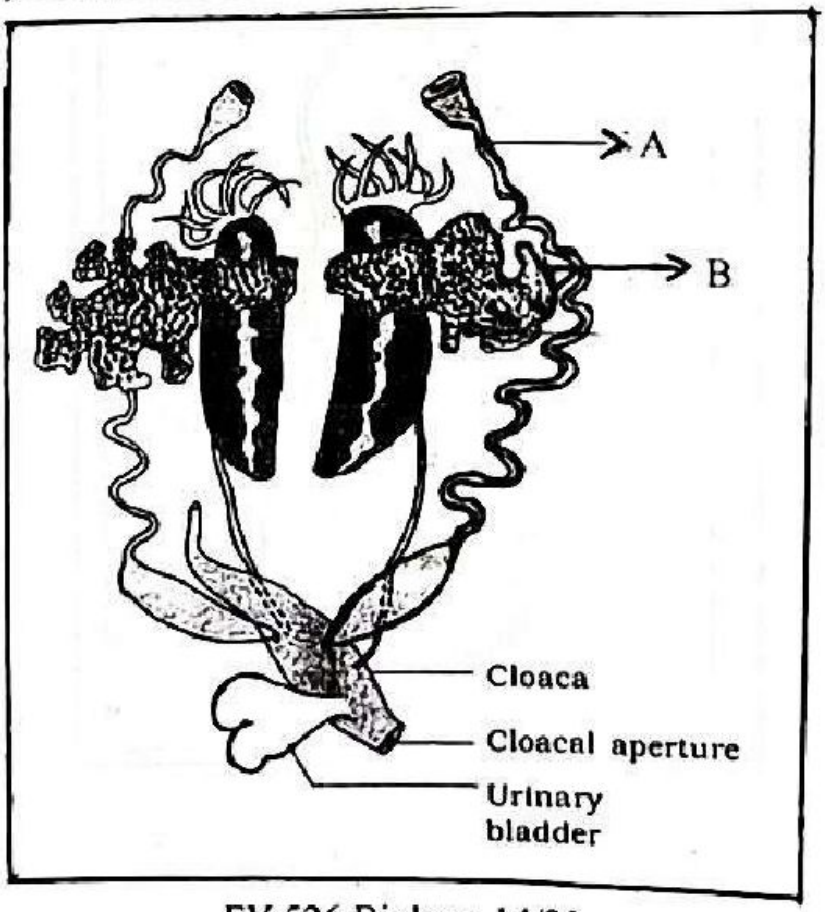
b) What happens to the catalytic activity of enzyme when co-factor is removed from it ?

10) Match the following.

Column A	Column B
Platyhelminthes	Gills
Annelida	Malpighian tubules
Arthropoda	Flame cells
Mollusca	Nephridia
	Lungs

11) a) Identify the diagram.

b) Label the parts marked as A and B.



Score

12) Complete the table using the hints given.

(Transferase, Ligase, Oxidoreductase, Lyase, Isomerase)

A	B
..... (a)	Catalyse oxidoreduction between two substrates S and S′
..... (b)	Catalyse the transfer of a group G (other than H) between S and S′
..... (c)	Catalyse interconversion of isomers
..... (d)	Catalyse the linking together of two compounds

13) Name the following.

a) Accumulation of urea in blood.

b) Stones or crystallised salts formed in Kidney.

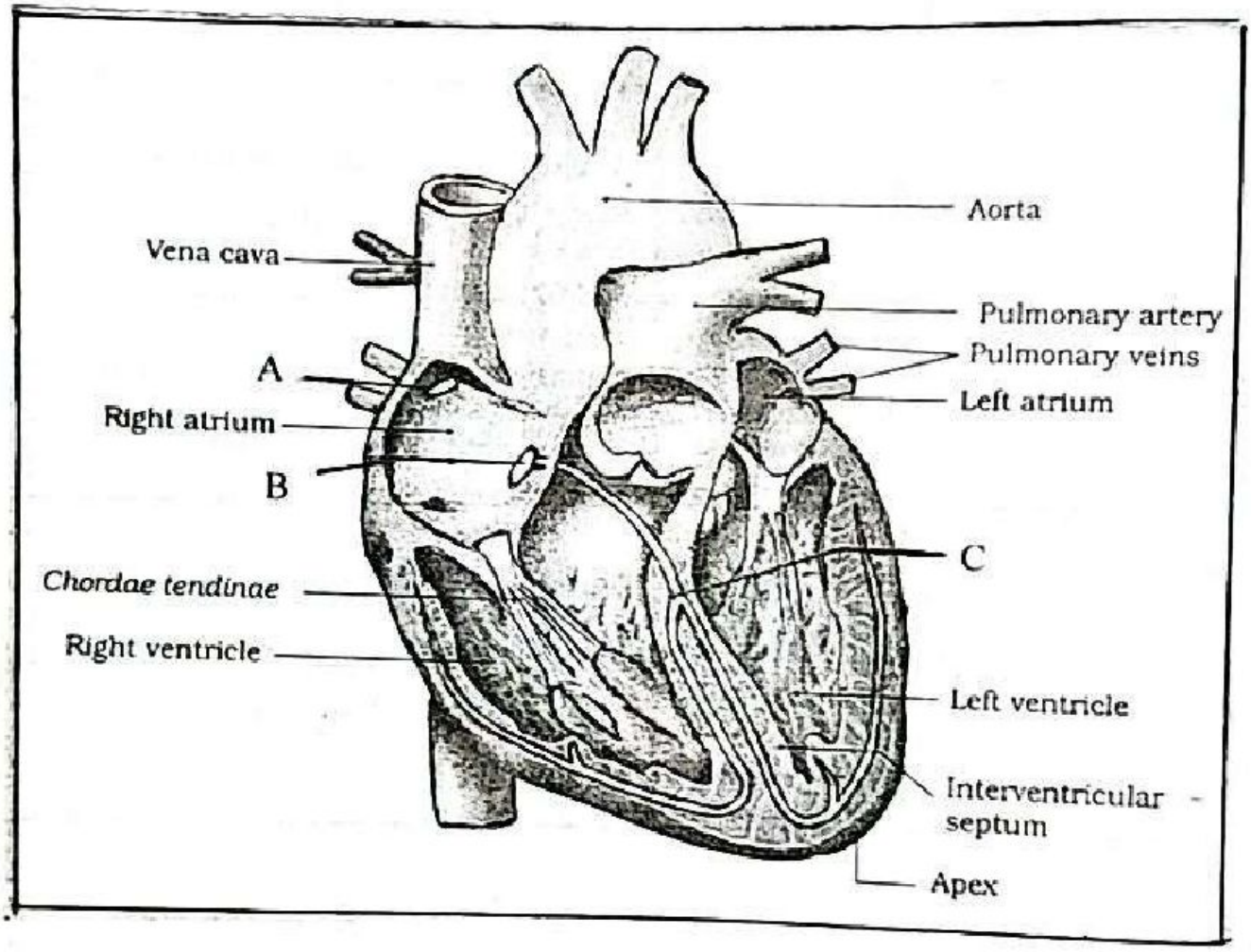
c) Inflammation of glomeruli.

d) Process used to remove urea from those patients, whose Kidneys do not function properly.

Score

14) The functioning of heart is regulated and maintained by nodal tissue and conducting system.

a) Identify any three components/parts of the conducting system of human heart from the diagram. (Hint : Parts marked as A, B and C)



b) Which is the nodal tissue that initiate heart beat ?

15) Special features of four different phyla are given. Identify the phylum.

a) Body bears eight external rows of ciliated comb plates.

b) Chitinous exoskeleton with jointed appendages.

c) Presence of water vascular system.

d) Has a file like rasping organ for feeding.

Score

16) Contraction of a muscle Fibre takes place by the sliding of thin Filaments over the thick Filaments.

a) Which theory explains the process of muscle contraction ?

b) Name two contractile proteins seen in muscles.

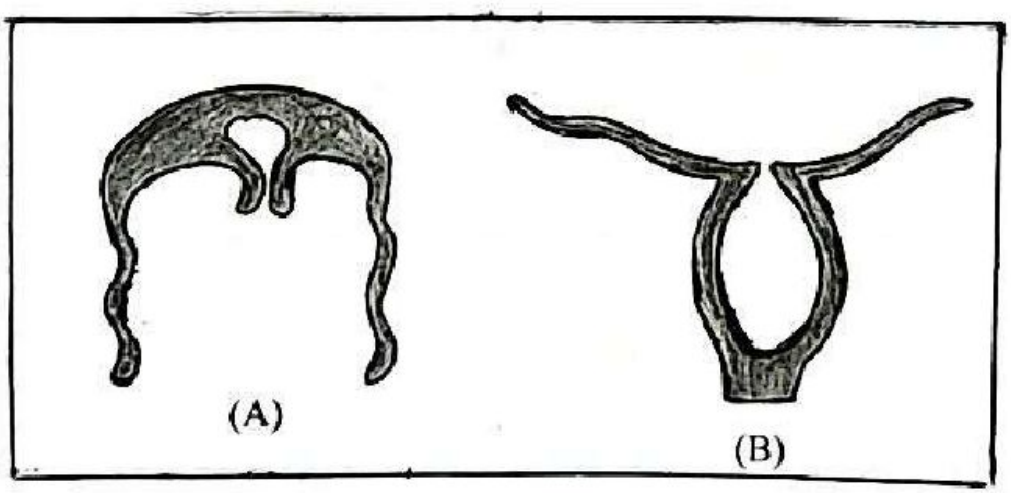
III. Answer any three questions from 17 to 20. Each carries 3 scores. **(3×3=9)**

17) Synapse is the junction between two neurons.

a) Which are the two types of synapse ?

b) How do they differ from each other ?

18) Some cnidarians exhibit two body forms as shown in Figure.

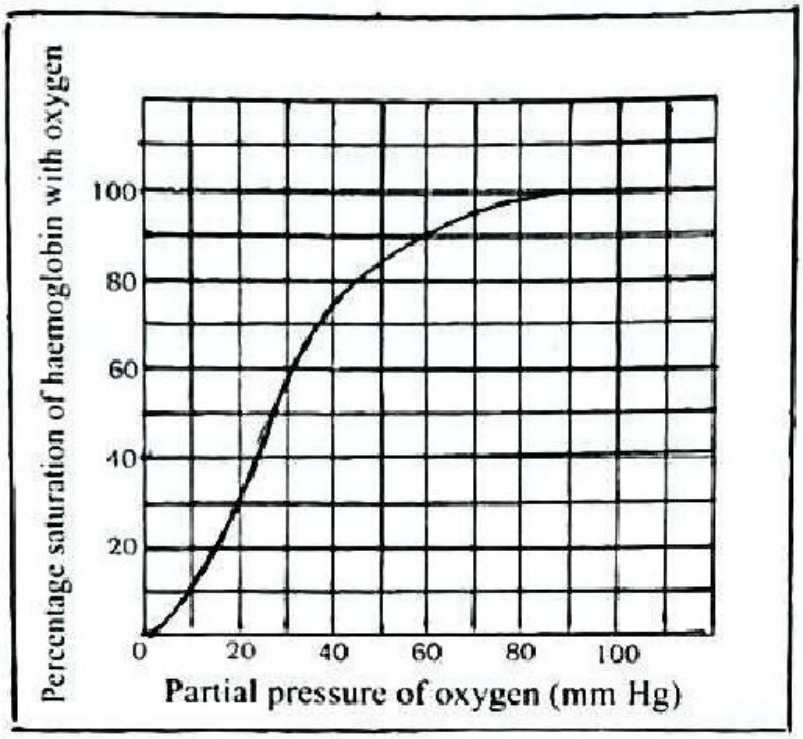


a) Name the body forms 'A' and 'B'.

b) Write any two differences between them.

Score

19) a) Observe the graph and identify the sigmoid curve.



b) Mention the factors which favour the formation of oxyhaemoglobin in alveoli.

c) How many O_2 molecules can a haemoglobin molecule carry ?

20) Given below is the picture of a renal corpuscle.

a) Name the parts marked as A, B and C.

b) Write the three main steps/processes in urine formation.