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 – A
BOTANY

Maximum : 30 Scores

Time : 1 Hour

Score

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

1) Viruses are covered by a protein coat, what is its name ?

2) In most of the higher plants, the growing apical bud inhibit the growth of lateral buds. This phenomenon is called _____

3) In which stage of Mitosis, chromatids are separated and moving to opposite poles ?

a) Prophase b) Metaphase

c) Anaphase d) Telophase

4) The fusion between one large non-motile female gamete and a small motile male gamete is called _____

5) Observe the relation between the first pair and fill in the blanks.

Outer layer of seed coat : Testa

Inner layer of seed coat : _____

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

6) Plants can get along without respiratory organs. Write two peculiarities that helps plants to do so.

7) Write two characteristics features of the vascular bundle of Dicot stem.

8) Match the following.

A	B
a) Anabaena	i) Pellicle
b) Gonyaulax	ii) Heterocyst
c) Euglena	iii) Plasmodium
d) Slime moulds	iv) Red tide

Score

9) a) Who discovered ribosomes ?

b) Which are the chemical components of Ribosomes ?

10) Write the peculiarities of cells seen at the Meristematic phase of growth.

11) A chromatographic separation of leaf pigments shows that, leaf consist 4 pigments. Write the name and colour of each pigment.

12) The spread of living Pteridophytes is limited and restricted to narrow geographical regions. Why ?

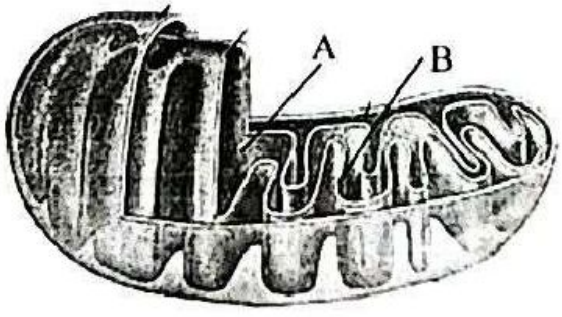
13) Characteristic features of Dorsi-ventral leaf and iso-bilateral leaves are given below.

Arrange them in appropriate columns.

- Mesophyll is not differentiated.
- Stomata are distributed more at the abaxial epidermis.
- Stomata are equally distributed on both surfaces.
- Mesophyll is differentiated into Palisade and Spongy layers.

14) a) Observe the diagram of Mitochondria and label the parts marked as A and B.

b) What is the role of Mitochondria in a cell ?



Score

15) According to Chemi-osmotic hypothesis, proton gradient formed in a membrane is required for the synthesis of ATP.

Write two reasons for the development of proton gradient in thylakoid of Chloroplast.

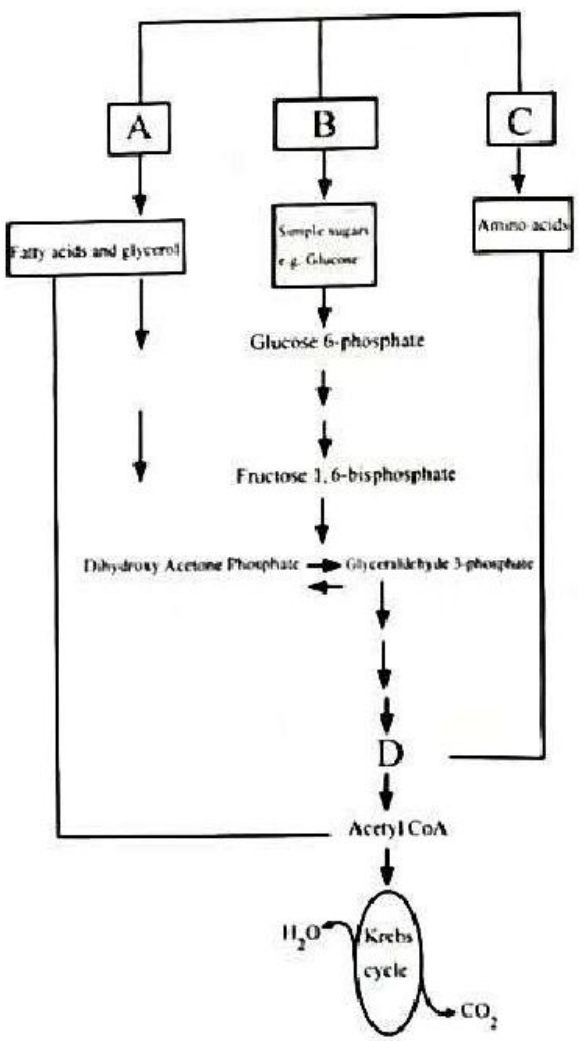
16) a) What is respiratory climatic ?

b) Which plant hormone is responsible for this ?

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

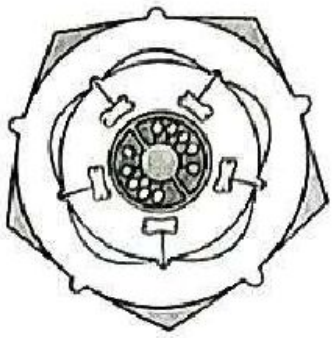
17) a) It is better to consider respiratory pathway as an amphibolic pathway rather than as a catabolic one. Why ?

b) Observe the amphibolic pathway given below and write the name of compounds marked as A, B, C and D.



Score

18) Observe the given floral diagram of solanacea and answer the following questions.



a) Identify the aestivation of corolla.

b) In this diagram petals are seen attached to Stamens. Write the name of this condition.

c) Write two features of gynoecium.

19) a) Write the name of substage of Prophase I in which the following events takes place.

i) Synapsis

ii) Terminalisation of Chiasma.

b) Name the enzyme that catalyse crossing over.

c) What is the significance of crossing over ?

20) Write three differences between Cyclic and Non-cyclic photophosphorylation.