

## Second Term Evaluation - 2025

Grade

12

Subject

Biology

II

Time

03 hours

Name ..... Class : .....

### Instructions :-

- ★ This question paper consists of **10** questions in **11** pages.
- ★ This question paper comprises Part A and Part B . The time allotted for **both parts** is **3 hours**.

### PART A - Structured Essay

- ★ Answer all **four** questions on this paper itself.
- ★ Write your answers in the space provided for each question. Note that the space provided is sufficient for your answers and extensive answers are not expected.

### PART B - Essay

- ★ Answer **four** questions only. Use the papers supplied for this purpose. At the end of the time allotted for this paper , tie the two parts together so that Part A is on the top of Part B before handing over to the supervisor.

### For Examiner's Use only

Part	Q. No.	Marks
A	1	
	2	
	3	
	4	
B	5	
	6	
	7	
	8	
	9	
	10	
Total		
Percentage		

### Final Marks

In Numbers	
In words	

## Part A - Structured Essay

★ Answer all questions.

(01)(A) (i) Mention a characteristic possessed by living to ensure continuous existence of a species.

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(ii) Name a convoluted tubular gland of human skin for the maintenance of temperature at a constant level.

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(iii) Name two other characteristics shown by monosaccharides apart from reducing property.

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(iv) Name two structural polysaccharides found in plant cell wall.

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(v) Draw an amino acid with a central symmetrical carbon atom.

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.....

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(vi) Which bonds contribute to the folding and coiling of the primary structure of a polypeptide ?

.....

(B) (i) Name a protein that contributes to the transportation of fatty acids.

.....

(ii) Mention the basis for categorizing nitrogenous bases into purines and pyrimidines and separate the nitrogenous bases of nucleic acids.

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(iii) What is the function of the phosphate group of nucleic acids ?

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(iv) Name a microscope most suitable to observe 3 dimensional surface view.

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(v) Name the basic facts included in cell theory.

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(vi) Name the structures of prokaryotic cells used for respiration.

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(ii) Name a metabolic reaction shown only by prokaryotic organisms and never shown by eukaryotic organisms.

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(C) (i) Which type of filament forms the nuclear lamina of the nucleus ?

.....

(ii) Write two functions associated with nuclear RNA.

.....

.....

(iii) Write the organelle / organelles relevant to the following common cellular functions.

**Function**

**Organelle / Organelles**

1. Production of transport vesicles

needed for transportation within cell .....

2. Contribute to photorespiration

.....

(iv) Name a type of vacuole that aid in digestion.

.....

(v) Write two functions shown by cell wall during turgidity.

.....

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(vi) By carrying which type of signal, does the extracellular matrix of animals affect cell behaviour ?

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(vii) Write the type of cell junctions relevant to following examples.

(a) Cardiac muscles

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(b) Muscle tissue

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(c) Skin epithelium

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(viii) Write four importance of mitosis.

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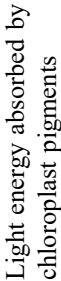
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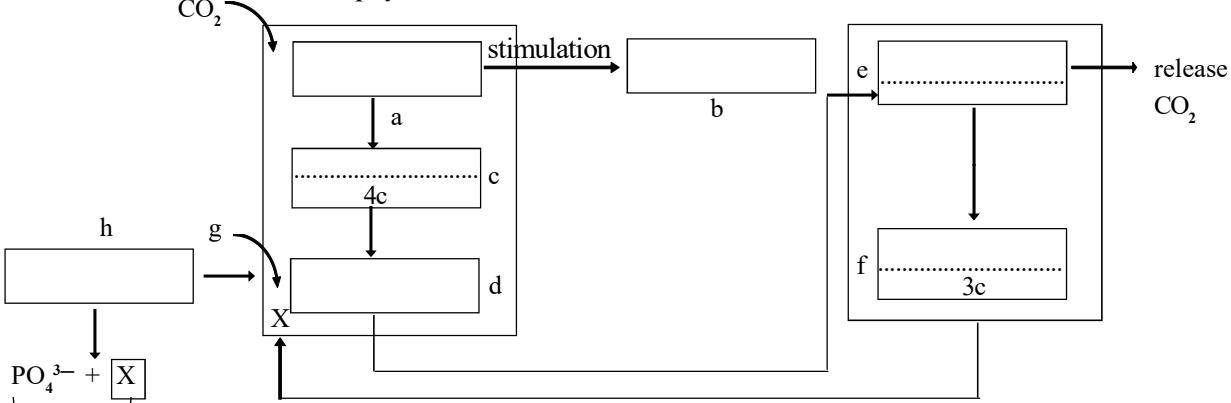
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[illegible]

X- ..... Y- .....

Z- .....

A diagram showing a plant with a curved arrow labeled  $\text{CO}_2$  pointing from the atmosphere into the plant's leaves.

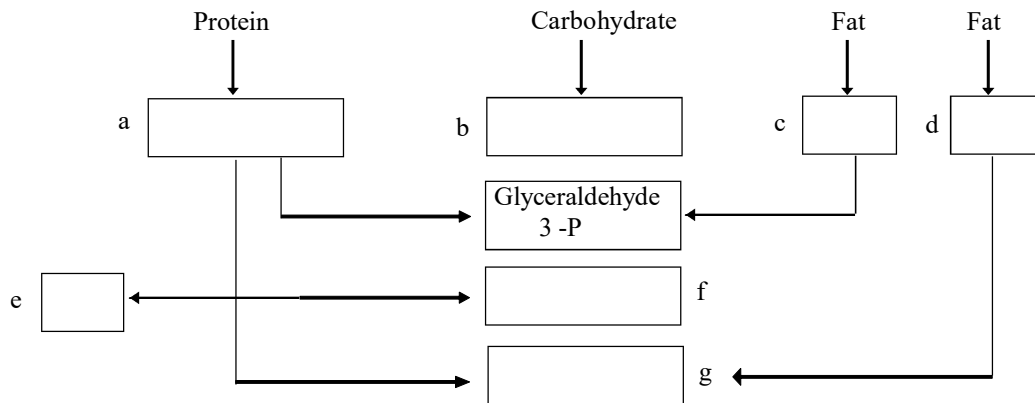


- (B) (i) Write two similarities and differences seen between ethyl alcohol fermentation and lactic acid fermentation.

Similarity .....

Difference .....

- (ii) Fill in the blanks of the following chart related to respiratory substrates.



- (C) (i) Mention the eras relevant to following events.

- (a) Radiation of mammals , birds

and pollinating insects.

- (b) Dinosaurs evolved , radiated.

- (c) Appearance of 1<sup>st</sup> seed plants

- (d) Radiation of most present

day mammalian orders

- (e) Diversification of vascular plants

- (ii) Write 3 differences between microphylls and megaphylls.

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 .....  
 .....

- (iii) Following indicates several characteristics seen in phyla of kingdom Fungi. Write the phylum to which each characteristic belong.

- (a) Mycelium is coenocytic and aseptate , septa

found only where reproductive cells are formed

- (b) Motile flagellated spores for reproduction

- (c) Dikaryotic fungal hyphae is dominant in

life cycle

- (d) Produce conidia and ascospores

- (iv) Introduce the following terms.

Diploblastic

Triploblastic

Coelome

(03)(A) (i) Write five external characteristics seen in phylum Annelida.

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(ii) What is meant by cloaca ?

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(iii) Draw the homocercal and heterocercal caudal fin.

(iv) What is meant by nictitating membrane ?

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(v) Write a genus of an amphibian without limbs.

.....

(vi) Write two functions of reptilian scales.

.....

(B) (i) Name three unicellular structures found in plant epidermis.

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(ii) Name three characteristics seen on surface (external) of sclereids.

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(iii) Write how the size of leaf is formed in plants growing in rain forests and dry cold environments to capture light .

.....

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(iv) Write the mechanism of opening of stomata.

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(C) (i) Introduce the following short distance transportation methods.

- (a) Diffusion .....
- .....
- (b) Osmosis .....
- .....
- (c) Imbibition .....
- (d) Facilitated diffusion .....
- .....

(ii) Name the radial transportation pathways.

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(04)(A) (i) Explain phloem translocation mechanism using water potential concept

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(ii) Write the steps to find the water potential of potato from supplied potato strips.

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(iii) Name three special adaptations shown by plants for cross pollination.

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(iv) Name a floral part that does not directly participate in reproduction.

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(B) (i) Name an animal phyla where true coelome act as a hydrostatic skeleton for the 1<sup>st</sup> time.

.....

(ii) By which name the digestive compartment lined by endoderm is called ?

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(iii) Write a structural difference between gastro vascular cavity of Cnidaria and Platyhelminthes

.....

(iv) Write the importance of seed having a seed coat and storage food.

.....

(v) Name post fertilization changes.

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(vi) Name the parts of bark.

.....

(C) (i) What is the main difference between softwood and hardwood ?

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(ii) Write how following elements are absorbed in to a plant.

N - .....	P - .....
C - .....	B - .....
O - .....	Mo- .....

(iii) What is the water potential of pure water ?

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(iv) Introduce hypotonic and hypertonic solutions.

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### Part B - Essay

★ Answer Four questions only.

- (05) (a) Mention the global importance of photosynthesis.  
 (b) What is meant by action spectrum and absorption spectrum ?  
 (c) Explain the Carbon fixation process of  $C_4$  plants.
- (06) (a) Mention characteristic features of enzymes.  
 (b) What are the factors affecting enzymatic reactions ?  
 (c) Explain the mechanisms that regulate enzymatic activity within living cells.
- (07) (a) Describe the primary structure of dicot root including the functions of each tissue of the root.  
 (b) Explain the upward movement of water and minerals in a plant.
- (08) (a) What is meant by transpiration ?  
 (b) Explain  $K^+$  influx hypothesis.  
 (c) Explain how you arrange potometer to measure the rate of transpiration of a shoot at school laboratory.
- (09) (a) Explain the diversity of plant nutritional processes.  
 (b) Briefly explain sexual reproduction of terrestrial plants.  
 (c) Explain the pollination of flowers.
- (10) Write short notes.  
 (a) Glycolysis.  
 (b) Binomial nomenclature  
 (c) Characteristic features Kingdom fungi