

සියලුම හිමිකම් ඇවිරිණි/முழுப் பதிப்புரிமையுடையது/All Rights Reserved

දකුණු පළාත් අධ්‍යාපන දෙපාර්තමේන්තුව
தென் மாகாணக் கல்வித் திணைக்களம்
Department of Education, Southern Province

13 ශ්‍රේණිය අවසාන වාර පරීක්ෂණය - 2025 (ඔක්තෝබර්)
தரம் 13 ஆண்டிறுதிப் பரீட்சை - 2025 (ஒக்டோபர்) / Grade 13 Final Term Test - 2025 (October)

Biology II

09

S

II

මාලය
நேரம்
Time

Three hours

නම
பெயர்
Name

විභාග අංකය
அட்டைக்கூறு
Index No.

Extra reading time 10 minutes

Use extra reading time for reading the question paper to selection of questions and to organize questions while answering.

Instructions

- * This question paper consists of **10** pages and **10** questions.
- * This paper consists of two parts as A and B, and the time scheduled for both parts is three hours.
 - ☐ **Part A - Structed Essay (Page 2 – 10)**
- * Answer all the **four** questions in this question paper.
- * Your answers should be written in the space provided in the paper. Note that this space is enough to write answers and long answers are not expected.
 - ☐ **Part B - Essay (Page – 11)**
- * Answer only four questions. Use other papers for this purpose. After the deadline, attach A, B parts as one answer sheet and hand it over to the invigilator.
- * only part B of the question paper can be taken out of the examination hall.

* For invigilators use only

Part	Question no	Marks
A	01	
	02	
	03	
	04	
B	05	
	06	
	07	
	08	
	09	
	10	
Sum		
Percentage		

Final Marks

By number	
By words	

Signature

Marked by	
Checked by	

See page no. 02



Click & Visit Our Site

ALapiedu.com



Part A – Structured Essay

- Answer for all four questions on this paper itself.

(01) (A) (i) Which ability is gained to the water due to the adhesive and cohesive behavior?

.....

(ii) What is sustainable food production?

.....

.....

(iii) (a) Name a monosaccharide that is rare in nature.

.....

(b) Name **two** types of polysaccharides according to the function.

.....

.....

(iv) (a) State **two** features of saturated fats.

.....

.....

(b) Name **two** types of lipids which act as component in cell membrane.

.....

.....

(v) Write the function of following molecules.

(a) Smallest type of RNA -

.....

.....

(b) Most abundant type of RNA -

.....

.....

(vi) Write **two** other functions of organelle which is responsible for the formation of cell plate in plant cell division.

.....

.....

(B) (i) Mention three incidents that occur at the G₂ phase of cell cycle of a cell.

.....

.....

.....

(ii) State the function of each of the following proteins in cell division.

(a) Cohesin

.....

(b) Kinetochore

.....

(iii) Write **two** differences between anaphase I and II in meiosis.

.....

.....



(iv) Mention **three** different forms of energy transformed from the energy in ATP.

.....

.....

.....

(v) (a) What are enzyme inhibitors?

.....

.....

(b) Write an example for inhibitor which is bound to enzyme using covalent bonds.

.....

(vi) State the reason to observe a leaf in green colour.

.....

.....

(vii) Give reasons for higher efficiency in Nitrogen usage efficiency of C_4 plants than C_3 plants.

.....

.....

(C) (i) What is meant by primitive soup according to the bio chemical evolution?

.....

(ii) What is meant by inheritance of acquired characteristics according to the Lamark theory?

.....

.....

.....

(iii) Write the **generic** name of an organism with following features.

(a) Presence of two types of nuclei as mega and micro nuclei.

.....

(b) Dioecious, seed plant with flagellated sperms.

.....

(c) Produce a multinucleated structure which resist for drying and freezing during sexual reproduction.

.....

(iv) What are the structures used by Arthropods for respiration?

.....

.....

.....

(v) Write **four** adaptations in organisms of class Aves for flying.

.....

.....

.....

.....

(vi) Write a scientific name for endemic plant in Sri Lanka which has fruits with two wings.

.....



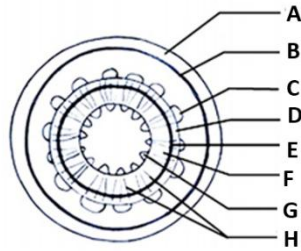
- (02) (A) (i) Name **two** types of living cells belongs to ground tissue system which present as live cells even at functional maturity.

.....

- (ii) Write **three** structural differences in cell types mentioned above (A)(i).

.....

- (iii) Following diagram shows a cross section of a growing stage of dicot woody plant.



- (a) Name the tissue denoted by B.

.....

- (b) How does the tissue B originate in plant root and stem?

Stem.....

Root

- (c) Write the relevant letters and name of the tissues that belong to the bark.

Letter

Name of the tissue

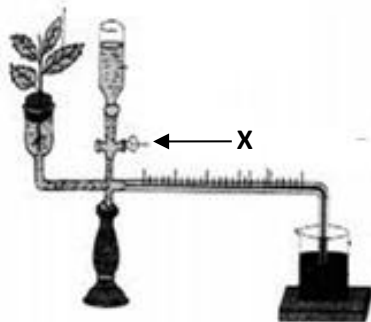
.....

.....

- (d) Write **two** main functions of the tissues denoted by H in diagram.

.....

(iv)



(a) Identify the above instrument.

.....

(b) Write **two** things to consider when installing the above apparatus.

.....

.....

(c) What is the importance of X in the apparatus?

.....

(B) (i) Name the locations where each of these epithelia are found in human body.

(a) Simple cuboidal epithelium -

(b) Stratified squamous epithelium -

(ii) (a) From which compound that the matrix of cartilage tissue is made of?

.....

(b) Name the repeating unit of mammalian compact bones.

.....

(iii) What is the main function of buffers in human saliva?

.....

(iv) Name the components in gastric juice which aid in food digestion with the type of cells which they are secreted.

Component

Secretory cell type

.....

.....

.....

.....

(v) Blood in the left ventricle of heart returns back to the right ventricle through systemic circuit. Draw an arrow diagram to show this pathway.

.....

.....

.....

(C) (i) (a) Mention the location of AV node in conduction system of human heart.

.....

(b) What is systolic pressure?

.....

.....

(c) What is the normal systolic pressure value for a healthy adult at resting?

.....



(ii) Which lung volumes should be included to the total volume of air inhaled with maximum effort?

.....

(iii) Name an antimicrobial protein which is secreted by viral infected body cells.

.....

(iv) (a) Name the excretory structure and animal group which consists of ciliated excretory cells.

Excretory structure -

Animal group -

(b) What is the substance that is selectively reabsorbed both actively and passively in ascending limb of loop of henle?

.....

(v) How do nerves organize in Echinodermites?

.....

(vi) Name the parts of the brain responsible for following functions.

(a) Regulate appetite -

(b) Coordinates large scale body movements -

(03) (A) (i) (a) What is meant by sensory adaptation?

.....

(b) What is the function performed by aqueous humor human eye?

.....

(c) How does eye accommodation occur in near vision?

.....

(ii) (a) Which part of the human ear responsible for recognition of angular movements?

.....

(b) State the location of organ of corti in human ear.

.....

(iii) (a) What are the hormones responsible for maintaining Ca level in human blood?

.....

.....

(b) What is the reason for insulin dependant diabetic?

.....



(iv) (a) What are the major hormonal changes that occur in the second trimester of pregnancy of a woman?

.....

.....

.....

(v) What is the major part of the placenta belongs to foetus? Write a function of it.

(a) **Major part** -

(b) **Function** -

(v) (a) What are the processes in temporal bone which provide auricular surfaces for muscle attachment?

.....

.....

(b) Write a main feature that the structure of thoracic vertebrae differs from the structure of typical vertebrae of human.

.....

(B) (i) What is outbreeding?

.....

(ii) (a) What is the feature of population that aids in artificial selection?

.....

(b) What is the disadvantage of using artificial selection in breeding?

.....

(iii) What is the advantage of using inbreeding in agriculture?

.....

(iv) Write examples for animals that are produced by using horses by interspecific breeding.

Mention the appropriate cross in there.

Example

Cross

(a)

(b)

(v) Plants with red colored petals and black seeded is crossed with a white colored petaled and brown seeded plant. All the F_1 plants are with red petals and black seeds. Those F_1 plants crossed with white petaled brown seeded plants again.

Mention the genotypes of following plants.

(a) Parental plants

(b) Plants of F_1 generation

(c) Plants of F_2 generation



(C) (i) (a) What is genetic modification?

.....

(b) Due to which ability of a cell that a genetically modified cell can regenerate in to a plant.

.....

(c) From which organism that the toxic protein is obtained when production of genetically modified pesticide tolerant plants?

.....

(ii) (a) What is metagenomics?

.....

.....

(b) Mention **two** fields which apply metagenomics.

.....

.....

(iv) What are the steps in thermal cycle of PCR?

.....

.....

.....

(04) (A) (i) Name the soil bacterium and relevant plasmid used for delivering DNA into cells.

(a) **Soil bacterium**

(b) **Plasmid**

(ii) (a) What is a niche?

.....

(b) State **two** factors include into a niche.

.....

.....

(iii) Write an example for abiotic – abiotic interactions found in an ecosystem.

.....

(iv) Shortest food chains are more efficient in environmentally. Give the reasons.

.....

(v) (a) Name **two** types of plant groups found in mangrove ecosystem, with examples.

Plant group

Example

.....

.....

.....

.....



(b) Name an abundant plant species found in salt marshes.

.....

(vi) (a) State **two** threats to bio diversity.

.....

.....

(b) Give an example for plant and animal which is threatened due to over-exploitation.

Plant

Animal

(B) (i) (a) What is the major difference found in between mycoplasma and phytoplasma?

.....

(b) What is the symmetry of tobacco massaic virus?

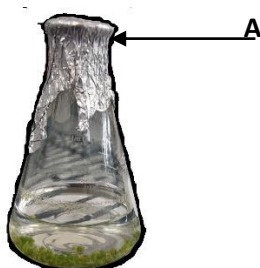
.....

(ii) What is the most appropriate method for sterilization of followings.

(a) **Water** -

(b) **Aqueous culture media with blood serum** -

(iii) A culture media prepared for sterilization in autoclave is given below.



(a) How to prepare A covering?

.....

.....

(b) What are the reasons for preparation of covering as above?

.....

.....

(c) Mention a suitable method to be followed when using a screwed cap glass bottle instead of above flask.

.....

(iv) (a) Write **two** steps in industrial waste water treatment plant.

.....

.....

(b) How much of organic matter is oxidized in the step that use biological processes?

.....

(v) Write **three** adverse effects of discharging large amount of waste water directly in to natural water bodies.

.....

.....

.....

(C) (i) What are the reasons for following problems when maintaining an aquarium in household?

(a) **Turning water into green frequently**

.....

(b) **Brown algae encrustations on the side glasses of the aquarium**

.....

(ii) State an advantageous environmental effect due to ornamental fish culture.

.....

(iii) (a) What are the **two** importances in tissue culture technique?

.....

.....

(b) Name a commercially available medium for tissue culture.

.....

(iv) Write **two** principles in food preservation.

.....

.....

(v) Name a bacterium which can produce endo-toxin to control dengue carriers.

.....

(vi) Give a reason to consider ES cells are pluripotent?

.....

.....

(vii) Name a bacterium whose genome project is completed except human genome project.

.....



Click & Visit Our Site

ALapiedu.com



Part B - Essay

- **Answer only for four questions.**

- (05) (a) Describe the process of energy production in Yeast cell under oxygen deficit environment
(b) Describe the structure of human lungs.
- (06) (a) Describe the effect of light on plant spacing.
(b) Describe plant responses for gravity by using an accepted model.
- (07) (a) Describe passive immunity types that can develop in human body
(b) Describe the main types of skeletons found in animal kingdom.
- (08) (a) Describe gross structure of human cerebrum.
(b) Briefly describe the fate of newly synthesized polypeptide in a cell.
- (09) (a) Compare two forest types included into tropical forest biome.
(b) Describe the process of viral replication.
- (10) Write short notes on,
(a) Reproduction of Zygomycota
(b) Common Human Mendelian characters
(c) Uses of nanotechnology in medical field



Click & Visit Our Site

ALapiedu.com

