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bo 07 Royal College

Third Term Test - November 2022 (2023 A/L)

පීඨ විෂය I
Biology I

09 E I

පැය දෙකයි
Two hours

• Answer all questions.

- (1) Which one is correct regarding living world ?
- 1) Living organisms does not show wide range of variations
 - 2) Photosynthesis is an example for catabolic reaction
 - 3) Cellular respiration is an example for anabolic reaction
 - 4) During growth reversible increase of dry mass occurs
 - 5) Movement of organisms occurs as result of irritability and coordination
- (2) Which one is incorrect statement regarding water?
- 1) Water molecule is a small, non polar and triangular molecule
 - 2) When the water is liquid form its H bonds are very fragile
 - 3) Four major properties of water maintain the life on earth
 - 4) Higher surface tension of water allows some organisms to survive on the surface of water
 - 5) Physical and chemical properties of water molecule provide the ability to render the vitality
- (3) Select the correct comparison of sugars and their functions.
- | | | |
|--------------|---|-------------------------|
| 1) Lactose | → | Translocation in phloem |
| 2) Sucrose | → | Stored in milk |
| 3) Glucose | → | Energy source |
| 4) Maltose | → | Stored in beetroots |
| 5) Galactose | → | Stored in sugarcane |
- (4) Which one of the following will not cause denaturation of protein?
- | | | |
|--------------------|-----------------|----------------|
| 1) Organic solvent | 2) Heavy metals | 3) Strong acid |
| 4) Low temperature | 5) Salt | |
- (5) Which one is the correct relationship between scientists and their contribution to cell theory
- | | | |
|-------------------------|---|------------------------------------|
| 1) Robert Hook | → | Discovered single cell organism |
| 2) Schleiden | → | Studied animal tissues |
| 3) Schwann | → | Studied plant tissues |
| 4) Virchow | → | Cells arise from preexisting cells |
| 5) Anton Van Leewenhoek | → | Examined cork cells |
- (6) Which one of the following is branched structural polysaccharide?
- | | | |
|----------------|------------------|-------------|
| 1) Cellulose | 2) Amylose | 3) Glycogen |
| 4) Amylopectin | 5) Hemicellulose | |

- (7) Which one is the true statement about microscope?
- 1) Transmission microscope is not used to study internal structures of cell
 - 2) Scanning microscope is used to observe the surface of the specimen
 - 3) Powerful magnets are used in light microscope to focus the light rays.
 - 4) Electron microscopes are used to observe living objects
 - 5) In light microscope heavy metals are used to stain the object.
- (8) Few statements regarding prokaryotic cells and eukaryotic cells are given below.
- A) Histones associate with DNA can be found in the region called nucleoid in prokaryotic cells
 - B) Cellulose and chitin can be found in the cell walls of eukaryotic cells.
 - C) Mitosis and meiosis occur only in eukaryotic cells.
- correct statement/s is/are
- 1) Only A
 - 2) Only B
 - 3) Only C
 - 4) A and C
 - 5) B and C
- (9) Functions of some cellular organelles are given below.
- A) Autolysis of cells.
 - B) Detoxification
 - C) Production of lysosomes
 - D) Photorespiration
 - E) Maintaining water balance.
- Cellular organelles in which the above functions are occurred respectively
- 1) SER, Vacuole, Peroxisome, Golgi apparatus, Lysosome
 - 2) Lysosome, Peroxisome, Golgi apparatus, Vacuole, SER
 - 3) Peroxisome, Golgi apparatus, SER, Vacuole, Lysosome
 - 4) Lysosome, SER, Golgi apparatus, peroxysome, Vacuole
 - 5) Lysosome, Vacuole, SER, Golgi apparatus, Peroxisome
- (10) Incorrect statement regarding meiosis is
- 1) In metaphase I homologous chromosomes get randomly arrange on the metaphase plate.
 - 2) In anaphase I sister chromatids move towards opposite poles.
 - 3) In telophase I, genetically non identical haploid two daughter nuclei are formed
 - 4) Kinetochores of sister chromatids are attached to microtubules extending from both poles in metaphase II
 - 5) In telophase II, genetically non identical haploid, four daughter nuclei are formed.
- (11) Incorrect statement regarding enzymes is,
- 1) Presence of enzymes does not alter the properties of the end products of any reaction.
 - 2) Enzymes are not being used up during the reaction.
 - 3) Enzymes are highly specific to the substrate
 - 4) Some enzymes need proteinous components to catalyse the reaction.
 - 5) Most enzymes are heat labile.
- (12) Which of the following does not use energy in ATP?
- 1) Muscle contraction
 - 2) Bioluminescence
 - 3) Movement of cilia
 - 4) Transmission of nerve impulses
 - 5) Transport water through plasma membrane

- (13) Incorrect statement regarding C_4 pathway of photosynthesis is,
 1) Chloroplasts in leaf mesophyll cells are adapted only for light reaction.
 2) Chloroplasts in bundle sheath cells contain only ps I.
 3) OAA diffuses into bundle sheath cells and converts into pyruvate.
 4) PEP carboxylase is more efficient in CO_2 fixation.
 5) PEP is regenerated from pyruvate in leaf mesophyll cells.
- (14) Incorrect statement regarding anaerobic respiration.
 1) Pyruvate is converted in to acetaldehyde during alcohol fermentation.
 2) Final electron acceptor is lactic acid during lactic acid fermentation.
 3) lactic acid fermentation is important in production of curd.
 4) Puruvate is converted in to acetaldehyde by releasing CO_2 molecule during alcohol fermentation.
 5) First step of anaerobic respiration is glycolysis.
- (15) Select the correct statement regarding the condition of earth before life
 1) Earth was formed about 4.6 million years ago.
 2) The first atmosphere was probably thick with considerable amount of oxygen
 3) The first atmosphere had nitrogen, carbon dioxide , hydrogen , sulphurdioxide, ammonia and methane
 4) First atmosphere of the earth was neutral one
 5) When earth was cooling down some hydrogen sulphide quickly escaped into the space.
- (16) An event that occurred in palaeozoic era is
 1) Radiation of reptiles
 2) Origin of mammals
 3) Major radiation of pollinating , insects
 4) Appearing soft bodies invertebrate animals
 5) Extinction of many organisms
- (17) Which of the following statements is included in Lamarck theory?
 1) The populations of a species vary in characteristic among their inheritance traits.
 2) Each species produces move offsprings
 3) Organisms acquired adaptation during their life time according to the needs of environment
 4) Resistance against disease is favourable for survival and reproduction of organisms
 5) The parts of the body that are used extensively become deteriorate.
- (18) Which of the characteristics given below is common for Domain Bacteria and Archaea?
 1) Photosynthetic
 2) Membrane lipids are unbranched hydrocarbons
 3) There are several kinds of RNA polymerase
 4) Cell wall contains peptidoglycan
 5) Circular chromosomes are present
- (19) A few characteristics of protista are given below
 a) Pellicle is present
 b) Food vacuoles are present
 c) Chloroplasts are present
 of these which characteristics can be seen in *Euglena*
 1) a only
 2) b only
 3) c only
 4) a and c only
 5) a and b only

- (20) The flowering plants are divided into two groups as monocotyledons and dicotyledons based mainly on the
- 1) Nature of root system
 - 2) Number of cotyledons in their embryo
 - 3) Number of flower parts
 - 4) Nature of vascular bundles
 - 5) Number of pores in pollen grains
- (21) A few characteristics of kingdom fungi is given below
- a) Conidia are produced in asexual reproduction
 - b) Sexual spores are exogenous
 - c) Coenocytic mycelium is present
- Select the response of fungi representing correct sequence of above characteristics
- 1) *Mucor*, Shell fungi, *Saccharomyces*
 - 2) *Aspergillus*, *Rhizopus*, *Penicillium*
 - 3) Puffballs, *Chytridium*, *Mucor*
 - 4) *Penicillium*, *Agaricus*, *Chytridium*
 - 5) *Saccharomyces*, *Rhizopus*, Shell fungi
- (22) Which of the following statements regarding phylum platyhelminthes is incorrect?
- 1) Signs of cephalization is present
 - 2) They have incomplete digestive system only with anus
 - 3) Nitrogenous excretory system consists of protonephridia
 - 4) Little complex neurons system is present
 - 5) Separate organs for excretion
- (23) Select the incorrect relationship
- 1) Characteristic of meristematic cells - Structurally and functionally undifferentiated
 - 2) Apical meristem of the root - Produce new cells both outwards and in wards
 - 3) The primary tissues of the stem - Formed due to cell division towards the stem
 - 4) Dermal tissue system - Tightly packed single cell layer
 - 5) Leaf primordia - Finger like projections along the sides of the shoot apical meristems
- (24) Incorrect statement about endodermis of plant root
- 1) Contains a suberin belt called casparian strip
 - 2) No intercellular spaces
 - 3) Blocks cortical apoplast from the vascular apoplast
 - 4) Locates interior to the pericycle
 - 5) Single cell layer
- (25) Which one of the following is correct about the secondary growth of plants?
- 1) In woody plants primary growth is followed by secondary growth
 - 2) The vascular cambium adds secondary xylem called wood
 - 3) Secondary growth occurs in the stems and roots in many gymnosperms species and dicot species.
 - 4) Vascular cambium is located outside the pith and primary xylem and outside of the cortex and phloem
 - 5) Initials which are shorter and oriented perpendicular to the axis produce vascular tissues

(26) Select the correct statement

- 1) As woody plant ages, the older layers of secondary xylem no longer transport water and minerals are called hard wood
- 2) Only the young secondary phloem functions in phloem translocation
- 3) Hardwood is the xylem of dicot angiosperm while wood of gymnosperms are named soft wood
- 4) The outer layer of the secondary xylem still transport xylem sap are known as sapwood
- 5) Xylem vessels are seen in all woody plants.

(27) Select the correct statement

- 1) The smallest leaves are only found in plant species inhabiting very cold environments.
- 2) Vertically oriented leaves capture light efficiently in low light condition.
- 3) The variation in branching pattern enable the plant to absorb maximum light in the ecological niche to occupies.
- 4) Vines rely on other objects to reach higher level to avoid the possible damaged caused by pathogens.
- 5) Phyllotaxy helps the plant to capture maximum sunlight.

(28) Which one of the following is not a different between a typical dicot leaf and monocot leaf

	Dicot leaf	Monocot leaf
1)	Mesophylls are differentiated into two distinct layers.	Mesophylls are not differentiated into two distinct layers.
2)	Spongy mesophyll cells have more chloroplasts than palisade mesophyll cells	Chloroplast are abundant in all mesophyll cells.
3)	Net like venation	Parallel venation
4)	Stomata are mainly found in the lower epidermis	Stomata are present in both lower and upper epidermis
5)	Spongy mesophylls are loosely arranged with many large air spaces.	There is no that much of large air spaces

(29) The incorrect statement regarding the factors affecting the rate of transpiration,

- 1) With the increase of light intensity the rate of transpiration increases
- 2) A rise in temperature lowers the relative humidity of the air outside the leaf which result in a steeper concentration gradient of water molecules from leaf to external atmosphere
- 3) The diffusion gradient becomes less steep in lower transpiration
- 4) Windy condition increases transpiration rate
- 5) There is a greater resistance to movement of water through the plant due to high steep water potential gradient from the soil to the atmosphere.

(30) The incorrect relationship about the modes of nutrition in plants.

- 1) Mutualism - Mycorrhizae
- 2) Commensalism - Epiphytes
- 3) Semiparasitic - *Loranthus* and host plant
- 4) Parasitic - Dodder plants and host plant
- 5) Symbiosis - *Utricularia*

- (31) The type of macro nutrients that causes following deficiency symptoms.
- Yellow and brown leaf margins
 - Weak stems
 - Poorly developed roots
- 1) Mg 2) P 3) S 4) K 5) Mo
- (32) A function of Gibberellins
- 1) Stimulates seed germination
 - 2) Promote vascular differentiation
 - 3) Promote leaf senescence
 - 4) Functions in gravitropism
 - 5) Stimulates fruit development
- (33) The incorrect relationship regarding the type of epithelial tissue and its location is,
- 1) Simple columnar epithelium : Intestinal lining
 - 2) Stratified squamous epithelium : Blood capillaries
 - 3) Pseudo stratified columnar epithelium : Trachea
 - 4) Simple cuboidal epithelium : Salivary glands
 - v) Simple squamous epithelium : Alveoli
- (34) Incorrect relationship regarding the type of cells found in connective tissues and their functions is,
- 1) Mast cells : Secrete heparin and histamine
 - 2) Macrophages : Phagocytosis
 - 3) Adipose cells : Insulate the body
 - 4) Chondrocytes : Secrete collagen fibers
 - 5) Osteoblasts : Maintain bone tissue
- (35) Which of the following is not an adaptation of animals for their feeding mechanisms?
- 1) Filter feeders have cilia in their gills.
 - 2) Presence of well adapted mouthparts in fluid feeders.
 - 3) Presence of poisonous fangs in some bulk feeders.
 - 4) Presence of proboscis in some substrate feeders.
 - 5) Presence of suckers in parasites.
- (36) Correct combination regarding the digestive enzymes, place of their secretion and the functions is,

Enzyme	Place of secretion	Function
A) Amylase	a) Pancrease	P) DNA → Nucleotides
B) Carboxypeptidase	b) Oral cavity	Q) Polysaccharides → Disaccharides
C) Nucleases	c) Small intestine	R) Small polypeptides → Amino acids
D) Phosphatases	d) Stomach	S) Smaller polypeptides → Small peptides

- 1) A , C , Q
- 4) B , c , S

- 2) B , a , R
- 5) A , d , Q

- 3) C , a , P

- (37) Correct statement regarding the regulation of digestion in man is,
 1) Stretching of stomach wall when food arrives the stomach triggers to release gastric juice.
 2) Arrival of food in the stomach triggers the release of gastrin hormone.
 3) Fatty acids and amino acids in the chyme trigger the release of cholecystokinin.
 4) Secretion of secretin is stimulated by the cholecystokinin.
 5) Only acidic nature of food reached the mouth stimulates the release of saliva.
- (38) Which of the following is not a deficiency symptom due to lack of thiamine?
 1) Skin disorders
 2) Poor coordination
 3) Reduced heart function
 4) Susceptibility to infection
 5) Tringling
- (39) Incorrect statement regarding the closed circulatory system is,
 1) Effective delivery of oxygen and nutrients to the cells of large complex animals
 2) Blood is restricted to vessels and kept apart from the interstitial fluid.
 3) Back flow of blood takes place through veins with valves.
 4) Only annelids among invertebrates have closed circulatory systems.
 5) The all animals who have closed circulatory system consist of ventral heart.
- (40) Correct relationship regarding the animal phyla and their respiratory pigments is,
 1) Annelida : Chlorocruorin , Hemoglobin
 2) Mollusca : Haemoerythrin
 3) Arthropoda : Chlorocruorin , Haemoerythrin
 4) Chordata : Myoglobin , Chlorocruorin
 5) Platyhelminthes : Haemocyanin

The instructions for the questions 41 to 50 are given below.

Summary of above instructions				
1	2	3	4	5
Only (A) (B) and (D) correct	Only (A) (C) and (D) correct	Only (A) and (B) correct	Only (C) and (D) correct	Any other response or combination of responses correct

- (41) Compound/compounds formed from one molecule of acetyl co – A in citric acid cycle is / are
 A) Two molecules of NADH
 B) One molecule of ATP
 C) One molecule of FAD
 D) Two molecules of CO₂
 E) One molecule of ADP
- (42) Select the response / responses with the correct relationship
 A) Separate sexes - Arthropoda
 B) Adults are without head and segmentation - Echinodermata
 C) Calcareous endoskeleton is present - Annelida
 D) Triploblastic with pseudocoelomic - Nematoda
 E) The nerve cord is solid and ventrally located - Platyhelminthes

- (43) Which one of the following structure / structures can be seen in at least two phyla?
 A) dorsal nerve cord B) Book lungs
 C) Gastrovascular cavity D) Haemocoel
 E) Malpighian tubules
- (44) Which one of the following feature/features unique to mammalia?
 A) Differentiated teeth B) Mammary gland
 C) Lungs D) Ventral heart
 E) Muscular diaphragm
- (45) Select the correct response / responses
 A) In some plants fruits develop from the ovary without fertilization
 B) Parthenocarpic fruits do not develop seeds
 C) Example for induced parthenocarpy is banana
 D) In some plants, seeds develop without fertilization
 E) Many grasses shows parthenogenesis.
- (46) During evolution some plant species have become touch specialists. Which one of the followings is/are touch specialists?
 A) Tendril of climbing plants B) *Mimosa pudica*
 C) Sun flower plants D) Fern
 E) Passion fruit
- (47) The correct responses / responses about preexisting chemical defence mechanism,
 A) Nicotine is a type of alkaloids
 B) Tannins are type of phenolics
 C) Azadirachtin not a terpenoids
 D) Lignin are type of lection
 E) Flavonoids are type of alkaloids.
- (48) A plant/plants produce photosynthetic gametophytes.
 A) *Pogonatum* B) *Nephrolepis*
 C) *Sellaginella* D) *Marchantia*
 E) *Cycas*
- (49) Reason / s for gastritis is / are
 A) Prolonged starvation B) Mental stress
 C) Prolonged diabetes condition D) Inadequate fibre in the diet
 E) Obesity
- (50) Blood cells with nuclei which are divided into lobes are
 A) Monocytes B) Basophill
 C) Lymphocytes D) Eosinophill
 E) Neutrophyll

22 A/L අයි [papers group]



Royal College – Colombo

Third Term test November - 2022 (2023 A/L)

Grade – 12

Biology

Part A – Structured Essay

Time – 3 hours

Name/ Index No :-

Part A - Structured Essay

(pages 2 – 11)

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

Part B – Essay (01 page)

- Answer four questions only. Use the papers supplied for this purpose. At the end of the time allotted for this paper, tie the two papers together so that **Part A** is on top of **Part B** before handing over to the Supervisor.
- You are permitted to remove **only Part B** of the question paper from Examination hall.

For Examiner's use only

Part	Question Nos.	Marks
A	1	
	2	
	3	
	4	
B	5	
	6	
	7	
	8	
Total		

Final Marks

In numbers	
In words	

Answer all Questions

1) A) i) Mention the contribution of the following scientists regarding the cell theory.

a) Rudolf Virchow :

b) Theodor Schwann :

ii) Write the three basic features, shared by all cells.

1.

2.

3.

iii) Write two structural differences between prokaryotic flagellum and eukaryotic flagellum.

1.

2.

iv) Write two structural differences between primary cell wall and secondary cell wall in plant cells.

1.

2.

v) Write the location of middle lamella and its function.

a) Location :

b) Function :

B) i) Three structures found in cells are given below.



A



B



C

a) What are represented by A, B, C structures?

A.

B.

C.

b) Write the functions of A and C.

A.

B.

c) Write the locations where A and B are found.

A.

B.

ii) a) What is meant by benign tumor?

.....
.....
.....

b) What is meant by metastasis ?

.....
.....
.....

iii) a) What is meant by enzyme inhibitor ?

.....
.....
.....

b) What is the place where non – competitive inhibitors bind with the enzyme ?

.....
.....
.....

C) i) a) What is meant by a photosystem ?

.....
.....
.....

b) Mention the main difference between two types of photosystems regarding absorption of light energy.

.....
.....
.....

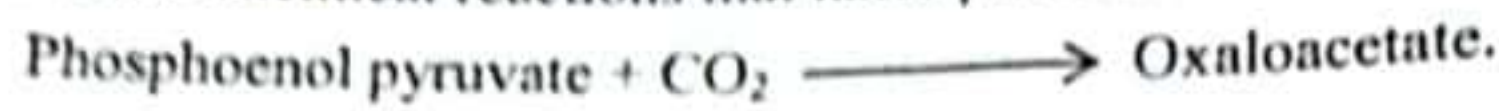
ii) a) What is the place where calvin cycle takes place ?

.....
.....
.....

b) State the steps of calvin cycle.

1.
2.
3.

iii) One of the chemical reactions that takes place in the cells is given below.



a) What is the exact location where above reaction takes place ?

.....

.....

b) What is the enzyme which catalyzes above reaction ?

.....

.....

iv) a) Mention three factors affect on rate of photosynthesis except light intensity.

1.
2.
3.

b) A student says that rate of photosynthesis decreases under high intensity of light. State whether the above statement is true or false, and give the reason for your answer.

.....

.....

2) A) i) What is presently accepted theory that explains the origin of first cell ?

.....

ii) State the major events occurred during each of following time periods.

- a) 2.7 billion years ago -
- b) 700 million years ago -
- c) 365 million years ago -

iii) State the phylum of seedless vascular plants that is evolutionarily closest to seed plants.

.....

iv) What is the reason that seeds are considered as the key adaptation seen in seed plants.

.....

.....

v) What is an ovule.?

.....

.....

B) i) What is absorptive nutrition that can be seen in kingdom fungi?

.....
.....
.....

ii) a) Write two structural features of zygosporangium.

.....
.....

b) Which type of spores are produced by zygosporangium?

.....
.....

iii) State the phyla of fungi that produce fruiting bodies and name them.

Phylum	Fruiting body
a)
b)

iv) State two phyla of fungi that consist of coenocytic mycelia.

.....
.....

v) Name two types of exospores present in kingdom fungi.

.....
.....

C) i) State three structural features that can be seen only in phylum cnidaria.

.....
.....

ii) Name the excretory structures of following phyla.

- a) Platyhelminthes -
- b) Arthropoda -

iii) State one function of each of following structures.

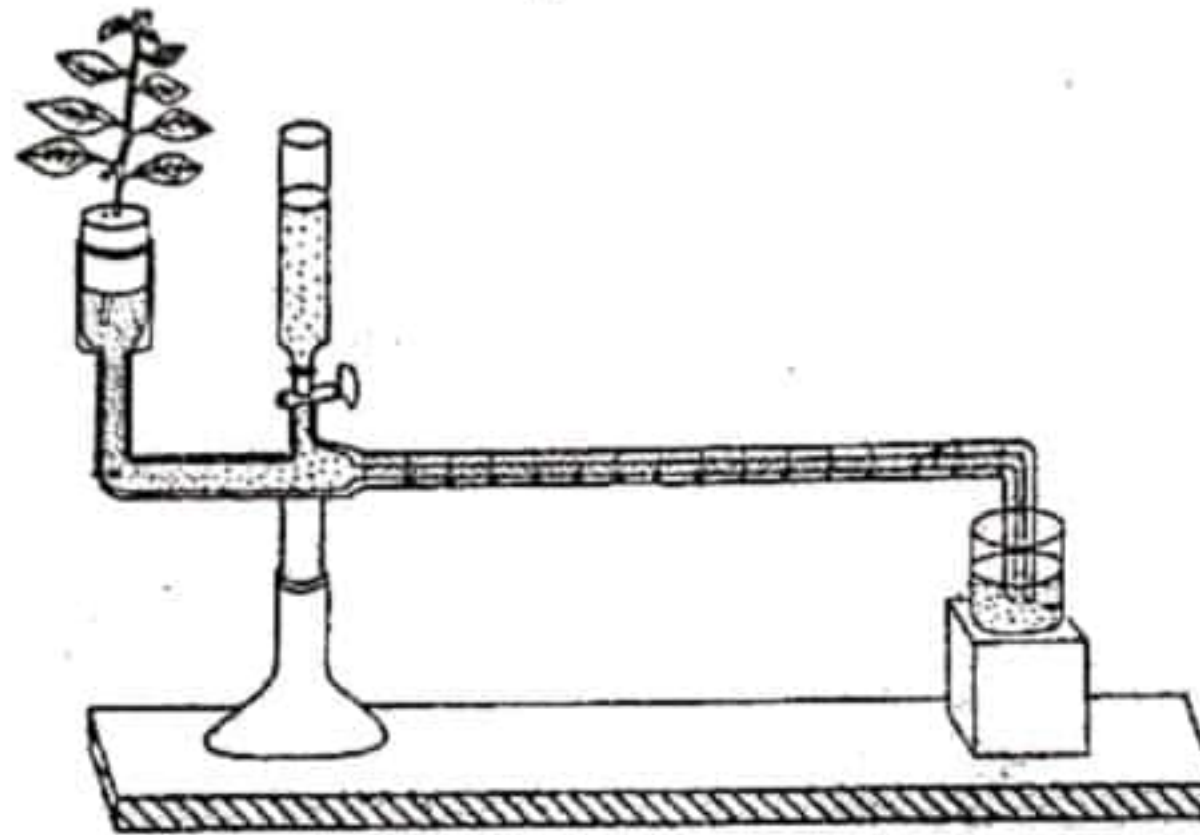
- a) Parapodia -
- b) Setae -
- c) Mantal -
- b) Tubefeet -

iv) complete the following dichotomous key using appropriate numbers and names to distinguish the animals given below.

- Spider, *Hydra*, Skate, Earthworm, Sand dollar, Squid

- | | | |
|-------------------------------------|---|-------|
| 1) Radial symmetry is present | - | ..... |
| Radial symmetry is absent | - | ..... |
| 2) Water vascular system is present | - | ..... |
| Water vascular system is absent | - | ..... |
| 3) Endoskeleton is present | - | ..... |
| Endoskeleton is absent | - | ..... |
| 4) Body is covered with scale | - | ..... |
| Body is not covered with scales | - | ..... |
| 5) Book lungs are present | - | ..... |
| Book lungs are absent | - | ..... |

- (3) A) Following diagram is an instrumental setup prepared by a student to measure the transpiration of a branch of *Hibiscus* plant.



- i) Name this instrument

.....

- ii) Cutting of this branch and fixing it to the instrument for the experiment are done under water. What is the reason for it?

.....

- iii) What is the process that should be followed to insert an air bubble into capillary tube to measure the rate of transpiration?

.....

- iv) What is the assumption that should be made to measure the rate of transpiration?

.....

- v) a) Calculate the rate of transpiration if the cross section of the capillary tube is 1mm^2 and distance that air bubble moved in still air is 15 mm within 10 minutes.

.....

- b) What will be the distance if this setup is taken to a hill top and the distance of air bubble traveled in 10 minutes is measured. What is the reason for that?

.....

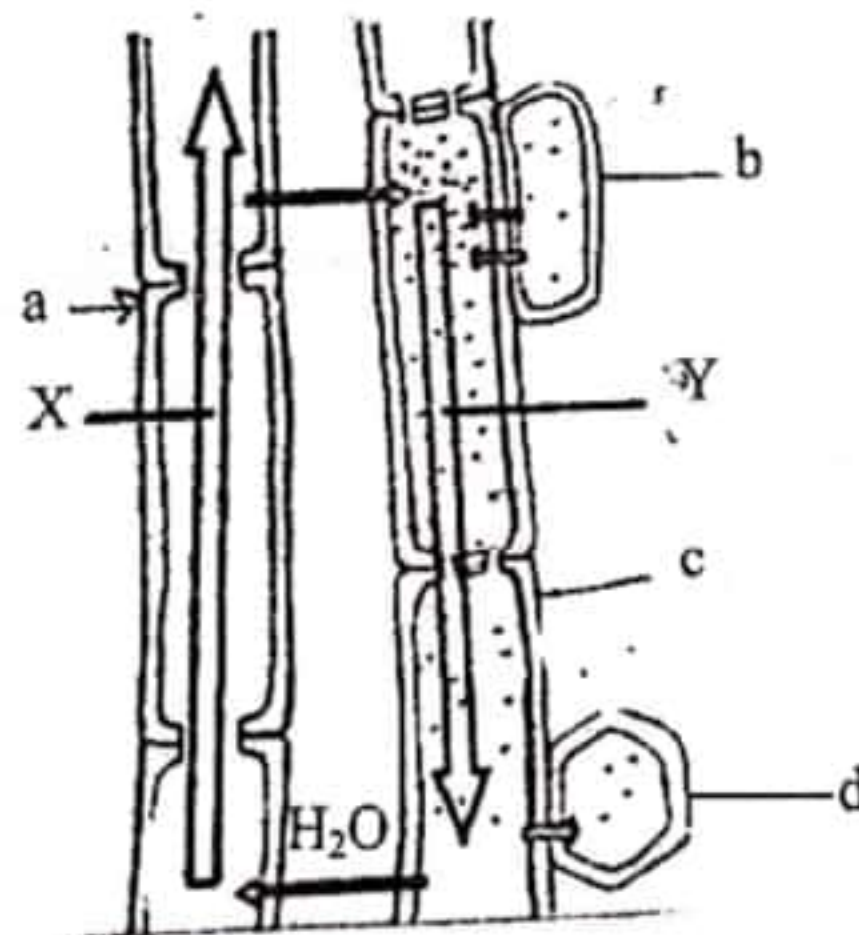
- vi) a) Write four differences between transpiration and gutation.

.....

- b) Write three significance of transpiration to terrestrial plants.

.....

B) Following diagram shows the way that phloem translocation occurs in a plant.



- i) Name cells denoted by a – d.

a) b)
 c) d)

- ii) What is the organic compound that enters to c from b?

.....

iii) Write relevant cells for followings.

a) Source

b) Sink

iv) What is the specialized cell that contributes to enter food actively from b to c.

v) Write hypothesis which are used to explain the processes denoted by X and Y.

X

Y

vi) Write the steps of the hypothesis taken place in the process Y.

.....
.....
.....
.....
.....
.....
.....

C) i) Write two structural and functional adaptations of the dicot leaf for efficient photosynthesis.

Structural 1.

2.

Functional 1.

2.

ii) Draw the detailed diagrams of lower epidermal peels of monocot and dicot plant leaves seen under the light microscope.

.....
.....
.....
.....
.....
.....
.....

iii) Write three factors affecting stomatal action.

.....
.....
.....

iv) What is the role of ABA in stomatal closure in drought?

.....
.....
.....

v) Write three ways of gaseous exchange taken place in plants.

.....
.....
.....

(4) A) i) a) State two types of fibers found in the matrix of connective tissue and write the function of each.

Fibers

Function

1.
2.

b) Write two unique structural features of muscle tissue found in the wall of the stomach.

.....
.....

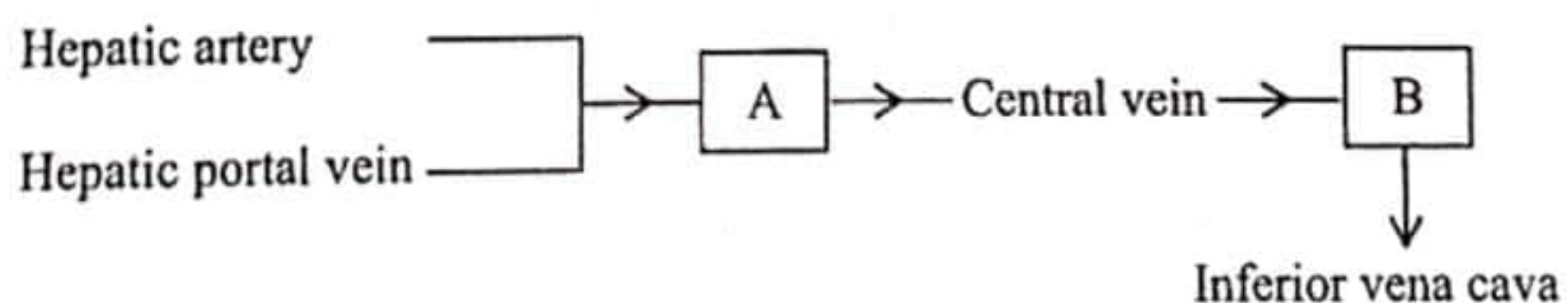
ii) Write three ways how the stomach lining is protected from self digestion.

.....
.....
.....

iii) a) What is the functional unit of human liver?

.....

b) Following flow chart shows how blood travels inside the human liver. State what are represented by A and B.



A:

B:

c) What is the most abundant organelle found in the hepatocytes?

.....

B) i) a) What is meant by "balanced diet"?

.....

b) State the vitamin or vitamins responsible for the following functions.

1. Act as antioxidant :

2. Aid in absorption and used of calcium ions and phosphorous ions.

ii) a) What is meant by energy budget?

.....

b) How are the energy budgets useful for animals?

.....

iii) State two differences between the blood circulatory systems found in grass hoppers and those in earth worms.

.....

.....

iv) a) What is meant by single circulation?

.....

b) Why is double circulation more effective than the single circulation?

.....

v) a) Name the lymphatic ducts which the lymph is drained into veins.

.....

b) A function done by the lymphatic system is related to a function done by the liver. Mention that function done by the lymphatic system.

.....

c) i) a) Write the reason why cardiac muscles are said to be myogenic.

.....

b) What is the exact location of the SA node

.....

ii) Write the ways how venous blood returns to the chambers of the heart.

.....

.....

.....

iii) What is referred to as a stroke?

.....

iv) Write the ways how CO_2 is carried by the blood.

.....

.....

.....

v) Write two adaptations of red blood cells for their efficient function.

.....

.....

vi) Write the type of vitamin and mineral that contribute for blood clotting.

Vitamin :

Mineral :

22 A/L අයි [papers group]



Royal College – Colombo
Third Term test November - 2022 (2023 A/L)
Grade – 12
Biology

Part B – Essay

Answer all questions.

(Each question carries 150 marks)

- (5) a) Describe the significant features of seedless vascular plants
b) Explain the differences between Chondrichthyes and Osteichthyes.
- (6) a) Briefly explain the alternation of generation.
b) Describe the life cycle of a plant that possesses naked seeds.
- (7) a) Describe the entry of water into vacuolated cell across the cell membrane.
b) Briefly explain transmembrane route.
- (8) Write short notes on followings.
a) Factors affecting on the rate of enzymatic reaction.
b) The external structure of the human heart
c) Histological structure of human pancreas.

22 A/L අයි [papers group]



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- Past Papers
 - Model Papers
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