

Roll No _____ (To be filled in by the candidate) (Academic Sessions 2020 – 2022 to 2023 – 2025)
BIOLOGY 224-1st Annual-(INTER PART – I) Time Allowed : 20 Minutes
 Q.PAPER – I (Objective Type) GROUP – I Maximum Marks : 17
PAPER CODE = 6461 LHR-1-24

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	Which one of the following group evolved during Cenozoic era :
	(A) Fishes (B) Amphibians (C) Reptiles (D) Birds
2	Keratin is an example of fibrous proteins present in :
	(A) Nail and hair (B) Blood (C) Muscle (D) Bone
3	Which one the following is essential for co-enzymes :
	(A) Carbohydrates (B) Proteins (C) Vitamins (D) Lipids
4	Which one of the following protein is present in microtubules :
	(A) Tropomyosin (B) Tubulin (C) Myosin (D) Actin
5	About 60% of adults are immune to disease :
	(A) Measles (B) Mumps (C) Influenza (D) Polio
6	Misuse of streptomycin may causes :
	(A) Fever (B) Discolouration of teeth (C) Allergy (D) Deafness
7	--- are involved in the formation of red tides :
	(A) Dinoflagellates (B) Zooflagellates (C) Diatoms (D) Euglenoids

(Turn Over)

1-8	Which one of the following is the largest group of fungi :
	(A) Deuteromycetes (B) Basidiomycetes (C) Ascomycetes (D) Zygomycetes
9	Musci are commonly called :
	(A) Liverworts (B) Hornworts (C) Mosses (D) Club mosses
10	Flame cells are the excretory cells in :
	(A) Flat-worm (B) Segmented worm (C) Round-worm (D) Pin-worm
11	Two ovaries and oviducts are functional in :
	(A) Kiwi (B) Eagle (C) Hen (D) Dog fish
12	Which one of the following is molecular formula of lactic acid :
	(A) $C_3H_4O_3$ (B) $C_3H_5O_3$ (C) $C_3H_6O_3$ (D) C_2H_5OH
13	Haem portion of haemoglobin contains :
	(A) Mg^{++} (B) Fe^{++} (C) Fe^{+++} (D) Ca^{++}
14	Pepsinogen is secreted by :
	(A) Mucous cells (B) Parietal cells (C) Zymogen cells (D) Epithelial cells
15	Which one of the disease is caused by breakdown of alveoli of lungs :
	(A) Asthma (B) Emphysema (C) Tuberculosis (D) Lung Cancer
16	How many litres of blood are present in man whose body weight is 72 kgs :
	(A) 9 (B) 8 (C) 7 (D) 6
17	If $\psi_p = 800 \text{ kPa}$ and $\psi_s = -2000 \text{ kPa}$, then ψ_w will be :
	(A) 2800 kPa (B) - 2800 kPa (C) 1200 kPa (D) - 1200 kPa

43-224-I.(Objective Type)-11750 (6461)

SECTION – I

LHR-1-24

2. Write short answers to any EIGHT (8) questions :

16

- (i) What is the unit of biological inheritance and where the information for structure and function of a cell are stored?
- (ii) How does low temperature affect the activity of an enzyme?
- (iii) If more concentration of enzymes is added beyond optimum level in a system, the rate of reaction remain unchanged, Why?
- (iv) What is ES-Complex? How it is formed?
- (v) What is a hypha? What is the advantage of having incomplete septa?
- (vi) On which basis the deuteromycetes are classified as imperfect fungi?
- (vii) Differentiate polyps and medusa.
- (viii) Why exoskeleton of echinoderm is called endoskeleton?
- (ix) What is notochord? Write its function.
- (x) List any four harms of insects.
- (xi) Define bioenergetics. Does it obey the law of thermodynamics?
- (xii) What are cytochromes? Give their function.

3. Write short answers to any EIGHT (8) questions :

16

- (i) Define biome. What is the use of biome?
- (ii) Differentiate the population and community.
- (iii) What are plastids? Name their types.
- (iv) What is the chlorella? Give its habitat.
- (v) Define thallus. Give examples of thallophytes.
- (vi) What is the commercial importance of marine algae?
- (vii) Enlist four major groups of kingdom protista.
- (viii) What is lysosome? Give its function.
- (ix) What is myoglobin? State its any one function.
- (x) Name respiratory pigment in human beings and where it is found?
- (xi) Differentiate the plasmolysis and incipient plasmolysis.
- (xii) What is the importance of transpiration?

4. Write short answers to any SIX (6) questions :

12

- (i) Write down biological classification of corn.
- (ii) Name four phases of bacterial growth curve.
- (iii) Differentiate the archegonia and antheridia.
- (iv) What is double fertilization? In which group of plants it occurs?
- (v) Lycopside are also called club mosses. Why?
- (vi) Write biological name of rice and tomato.
- (vii) What is Jaundice? Give its causes.
- (viii) How do the nematocysts help the animal in ingestion of the prey?
- (ix) Name the kinds of cells and their secretions of gastric gland.

SECTION – II

Note : Attempt any THREE questions.

5. (a) How genetically identical organisms can be produced by cloning? 2,2
(b) In what ways respiration in birds is the most efficient. 2,2
6. (a) What is RNA? Describe three types of RNAs. 1,3
(b) State various features of fungi that adapt them to terrestrial mode of life. 4
7. (a) The structure and functions of peroxisomes and glyoxysomes are different. How? 2,2
(b) Describe the digestion in cockroach. Also draw labelled diagram of digestive system. 2,2
8. (a) Write a detailed note on hepatitis? Explaining its causes and different types. 2,2
(b) Explain structure of arteries and capillaries. How these are involved in exchange of material? 2,2
9. (a) Discuss nutrition in bacteria. 4
(b) Draw and discuss non-cyclic photophosphorylation. 4

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	Which one of the following is not well defined in plants than animals : (A) Tissue (B) Organs (C) Cells (D) Organelles
2	The type of monosaccharide rare in nature is : (A) Triose (B) Pentose (C) Tetrose (D) Hexose
3	The region in the active site of an enzyme that recognizes the proper substrate is : (A) Binding site (B) Catalytic site (C) Prosthetic group (D) Inhibitor
4	The cells which produce new cells for growth and development of the plant are : (A) Chlorenchymatous cells (B) Meristematic cells (C) Parenchymatous cells (D) Sclerenchymatous cells
5	An ancient disease caused by enveloped DNA virus is : (A) Small pox (B) Poliomyelitis (C) Influenza (D) Measles
6	When death rate becomes equal to newly formed bacteria is : (A) Lag phase (B) Log phase (C) Stationary phase (D) Decline phase
7	Which one of the following have a shell of interlocking cellulose plates impregnated with silica: (A) Dinoflagellates (B) Diatoms (C) Kelps (D) Red algae

(Turn Over)

1-8	Most of the visible part of the following organism consist of fungus : (A) Mycorrhizae (B) Lichen (C) Plant (D) Algae
9	The reproductive structure having two wings in the life-cycle of pinus is : (A) Ovule (B) Microsporophyll (C) Megasporophyll (D) Pollen grain
10	Coelenterate that exist only in polyp form is : (A) Hydra (B) Obelia (C) Aurelia (D) Physalia
11	The organ of excretion in arthropods is : (A) Nephridia (B) Malpighian tubules (C) Booklungs (D) Kidney
12	What is the location of ETC and chemiosmosis in animal cell : (A) Lysosomes (B) Mitochondria (C) Stroma (D) Granum
13	Who hypothesized that plants split water as a source of hydrogen, releasing oxygen as a by-product : (A) Calvin (B) Hans Krebs (C) Van Niel (D) T.W. Engelmann
14	The loss of appetite due to the fear of becoming obese is known as : (A) Dyspepsia (B) Obesity (C) Bulimia nervosa (D) Anorexia nervosa
15	The single circuit heart does not pump blood directly to all body parts in : (A) Salamandar (B) Crow (C) Monkey (D) Shark
16	Guttation is loss of water through water secreting glands. What is the name of these glands : (A) Lenticels (B) Stomata (C) Hydathodes (D) Imbibition
17	The main body cavity in cockroach is known as : (A) Haemocoel (B) Coelom (C) Pseudocoel (D) Pericardium

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BIOLOGY 224-1st Annual-(INTER PART – I) Time Allowed : 2.40 hours
PAPER – I (Essay Type) GROUP – II Maximum Marks : 68

SECTION – I

LHR-2-24

2. Write short answers to any EIGHT (8) questions :

16

- (i) Define specific heat capacity of water. What is the value of specific heat of vaporization of water?
- (ii) Define enzyme. What is the function of binding site of the enzyme?
- (iii) Distinguish between reversible and irreversible inhibitors of enzymes.
- (iv) How the low and high temperatures respectively effect an enzyme activity?
- (v) Name soil dwelling carnivorous fungus. How does it feed on soil nematodes?
- (vi) Define bioremediation. What is the role of lichens during ecological succession?
- (vii) Why annelids and arthropods are considered having same origin?
- (viii) What is the economic importance of mollusca?
- (ix) Differentiate the ostia and osculum.
- (x) Define regeneration. Name the phylum in which regeneration is common.
- (xi) State the location of chloroplasts inside the leaf. Give their number per square millimeter of leaf surface also.
- (xii) Differentiate the external and cellular respiration.

3. Write short answers to any EIGHT (8) questions :

16

- (i) What is biological control? Write one example.
- (ii) Differentiate terms biotechnology and molecular biology.
- (iii) Give chemical composition of primary and secondary cell wall.
- (iv) Write down two salient features of cell theory.
- (v) What are trichonymphas?
- (vi) Give important features of red algae (any two).
- (vii) What is the role of pellicle in ciliates?
- (viii) How chalk was and is formed by foraminiferans?
- (ix) What is respiratory distress syndrome?
- (x) Write down two properties of respiratory surfaces in animals.
- (xi) Differentiate terms imbibition and guttation.
- (xii) What is incipient plasmolysis?

4. Write short answers to any SIX (6) questions :

12

- (i) Differentiate the capsids and capsomeres.
- (ii) Compare nucleus with nucleoid.
- (iii) Name two living genera of Psilopsida.
- (iv) How would you compare microphylls and megaphylls?
- (v) What is prothallus? Give an example.
- (vi) What do you know about an embryo sac?
- (vii) What are deficiency symptoms of potassium and nitrogen in plants?
- (viii) How the predator-prey interaction helps in maintaining ecosystem stable?
- (ix) What is the difference between carnivores and omnivores?

SECTION – II

Note : Attempt any THREE questions.

5. (a) What is biological organization, explain it at organ and system level. 1,3
(b) Describe respiration in birds. 4
6. (a) Give first two levels of protein organization. 4
(b) Discuss different methods of asexual reproduction in fungi. 4
7. (a) Differentiate the prokaryotic and eukaryotic cells. 2,2
(b) Write detailed note on digestion in cockroach. 4
8. (a) Discuss four viral diseases. 4
(b) Describe lymphatic system. 4
9. (a) Describe different methods of nutrition in bacteria. 2,2
(b) Describe Z-scheme of non-cyclic phosphorylation. 4