Roll No _____ (To be filled in by the candidate) **(Academic Sessions 2018 – 2020 to 2021 – 2023)**

BIOLOGY 222-(INTER PART – I) Time Allowed : 20 Minutes

Q.PAPER – I (Objective Type) GROUP – I Maximum Marks : 17

PAPER CODE = 6467

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. LHR-G1-22

1-1	Enterokinase enzyme is secreted by lining of : (A) Pancreas (B) Liver (C) Duodenum (D) Stomach
2	Corn smut is caused by : (A) Candida albicans (B) Aspergillus fumigatus (C) Penicillium notatum (D) Ustilago maydis
3	Prions are made up of : (A) Nucleic acids (B) Proteins (C) Lipids (D) Carbohydrates
4	The parasite which produces anticoagulant to prevent blood clotting is : (A) Hook worm (B) Pin worm (C) Ascaris (D) Fasciola
5	The female gametophyte of flowering plant consists of ---- cells : (A) 2 (B) 4 (C) 7 (D) 8
6	The compounds which on hydrolysis yield polyhydroxy aldehyde or ketone sub units are : (A) Carbohydrates (B) Proteins (C) Lipids (D) Nucleic acids
7	The cells which supply ATP and proteins to sieve tubes are : (A) Fibers (B) Companion cells (C) Scleriedes (D) Guard cells
8	A cube of eight cocci is called : (A) Diplococci (B) Streptococci (C) Tetrad (D) Sarcina
9	Which part of light spectrum produces more oxygen during photosynthesis : (A) Blue (B) Green (C) Yellow (D) Red
10	Pasteurization technique is widely used for preservation of : (A) Water (B) Meat (C) Milk and milk products (D) Vaccines
11	Blastopore forms anus in : (A) Echinodermata (B) Annelida (C) Nematoda (D) Mollusca
12	The raw material from which coenzymes are made : (A) Proteins (B) Nucleic acids (C) Vitamins (D) Carbohydrates
13	Smoker's cough cause : (A) Asthma (B) Emphysema (C) Cancer (D) Tuberculosis
14	Number of NADH produced by passing one pyruvate molecule through Krebs Cycle and pyruvic acid oxidation is / are : (A) 1 (B) 2 (C) 3 (D) 4
15	The weight of blood in a man of 60 kg is : (A) 5 kg (B) 10 kg (C) 15 kg (D) 20 kg
16	Tests of foraminifera are made of : (A) Potassium (B) Calcium (C) Silica (D) Iron
17	Organelle involved in the synthesis of ATP is : (A) Ribosomes (B) Nucleus (C) Centriole (D) Mitochondria

Roll No _____ (To be filled in by the candidate) **(Academic Sessions 2018 – 2020 to 2021 – 2023)**

BIOLOGY 222-(INTER PART – I) Time Allowed : 2.40 hours

PAPER – I (Essay Type) GROUP – I Maximum Marks : 68

SECTION – I

LHR-GI-22

2. Write short answers to any EIGHT (8) questions : **16**

(i) Why lipids store double amount of energy than carbohydrates?
(ii) Why inhibitors affect enzyme function? Mention with examples.
(iii) Why binding site and catalytic site are important for enzymes?
(iv) Why enzymes are affected by extreme changes in pH?
(v) Enlist six plant diseases caused by fungi.
(vi) Define nuclear mitosis in fungi.
(vii) Give four diagnostic characters of mammals.
(viii) What do you know about harmful insects?
(ix) Differentiate between polyp and medusa.
(x) Define radial and bilateral symmetry with examples.
(xi) What is compensation point? When it occurs?
(xii) How action spectrum can be obtained?

3. Write short answers to any EIGHT (8) questions : **16**

(i) Define population and give its four attributes.
(ii) What do you know about integrated disease management?
(iii) Why plasma membrane do not allow all the substances to cross it?
(iv) Which organelle of the cell engulfs the foreign objects, also give the purpose of this process?
(v) Why protists are considered as polyphyletic? Give two examples of animal like protists.
(vi) How foraminiferous have poles in their shells? By which way shell is transformed into chalk?
(vii) What do you know about amoeba?
(viii) How red algae are differentiated from green algae?
(ix) What is phylogenetic system of classification?
(x) Give characteristics of bryophytes (briefly).
(xi) Write factors which are responsible for bleeding in plants.
(xii) Define immunity and name its types.

4. Write short answers to any [illegible] questions : **12**

(i) On the basis of morphology, how viruses are classified?
(ii) What are mesosomes? Describe their functions.
(iii) Write name of four parts of digestive system of cockroach.
(iv) How our oral cavity selects food for further digestion?
(v) Differentiate between peristalsis and antiperistalsis.
(vi) What is rubisco? Give its function.
(vii) Enlist types of respiration in frog.
(viii) Differentiate between diaphragm and pleura.
(ix) What is myoglobin? How it differs from haemoglobin?

SECTION – II

Note : Attempt any THREE questions.

5. (a) The environment of Pakistan is deteriorating day by day, suggest various measures to conserve it. 4
   (b) Write down any eight functions of blood. 4

6. (a) What are polysaccharides? Give details of some biologically important polysaccharides. 4
   (b) Describe economic gains due to fungi. 4

7. (a) How bacteria are classified on the basis of nutrients and energy trapping methods? 4
   (b) How plants applied their different features to live successfully on land? 4

8. (a) What is nomenclature, describe its importance with the help of examples? 4
   (b) Draw the outlines of Kreb's Cycle. 4

9. (a) What do you know about endoplasmic reticulum? Explain with diagram. 4
   (b) Food poisoning and obesity are diseases related to nutrition. Discuss. 4

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BIOLOGY 222-(INTER PART – I) Time Allowed : 20 Minutes

Q.PAPER – I (Objective Type) GROUP – II Maximum Marks : 17

PAPER CODE = 6462

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. LHR-G2-22

1-1	The study of distribution of animals in nature is called :			
	(A) Wildlife	(B) Zoogeography	(C) Geography	(D) Biodiversity
2	Fats and oil have specific gravity of about :			
	(A) 0.8	(B) 8	(C) 0.08	(D) 0.008
3	Co-enzyme is closely related to :			
	(A) Vitamins	(B) Water	(C) Minerals	(D) Lipids
4	The number of nuclear pores in undifferentiated cells (such as eggs) are :			
	(A) 3000	(B) 40,000	(C) 5000	(D) 30,000
5	Prions are made up of :			
	(A) Lipid	(B) DNA	(C) Protein	(D) RNA
6	Choose the smallest bacteria :			
	(A) E.Coli	(B) Mycoplasma	(C) Spirochetes	(D) Staphylococci
7	Example of apicomplexans is :			
	(A) Amoeba	(B) Paramecium	(C) Bacteria	(D) Plasmodium
8	Histoplasmosis is a disease of :			
	(A) Liver	(B) Skin	(C) Lung	(D) Brain
9	Clitoria ternatea is used against :			
	(A) Dog bite	(B) Scorpion bite	(C) Snake bite	(D) Wasp bite
10	The largest invertebrate is :			
	(A) Earthworm	(B) Giant squid	(C) Ascaris	(D) Star fish
11	Which one of the following does not belong to phylum platyhelminthes :			
	(A) Crab	(B) Planaria	(C) Liver fluke	(D) Tape worm
12	How many CO_2 molecules are produced from complete breakdown of one pyruvate :			
	(A) 2	(B) 4	(C) 6	(D) 3
13	Chlorophyll molecule contains following except :			
	(A) Magnesium	(B) Iron	(C) Porphyrin ring	(D) Phytol
14	A plant requires nitrogen and sulphur for its :			
	(A) DNA replication	(B) Cell wall	(C) Enzymes	(D) Starch
15	How much air can hold fully inflated lungs :			
	(A) 4 litres	(B) 4.5 litres	(C) 5 litres	(D) 5.5 litres
16	Closed circulatory system is present in animals except :			
	(A) Squid	(B) Spiders	(C) Octopus	(D) Fish
17	Following are organic nutrients present in the blood except :			
	(A) Glucose	(B) Fats	(C) Amino acids	(D) Sodium chloride

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BIOLOGY 222-(INTER PART – I) Time Allowed : 2.40 hours

PAPER – I (Essay Type) GROUP – II Maximum Marks : 68

SECTION – I

2. Write short answers to any EIGHT (8) questions : 16

(i) Which role is played by cellulose digesting enzymes in plant eating animals, discuss briefly.
(ii) At constant temperature and pH, how rate of reaction can be doubled?
(iii) In which way inhibitors stop catalytic activity of the enzymes? Give one example.
(iv) Why enzymes remain unaltered after the formation of products?
(v) How rust is differentiated from smut?
(vi) What is parasexuality in fungi?
(vii) Name the phylum of these animals, octopus, tape worm, leech and dolphin.
(viii) Give two differences between protostomes and deuterostomes.
(ix) What do you know about pseudocoelomates?
(x) Define polymorphism, also give an example.
(xi) Differentiate between photosystem-I and photosystem-II.
(xii) Write name of four stages of cellular respiration.

3. Write short answers to any EIGHT (8) questions : 16

(i) Compare radiotherapy and gene therapy to control diseases.
(ii) Differentiate between embryonic and organism cloning.
(iii) How cell membrane is differentially permeable membrane? Justify it.
(iv) What is the factory of synthesis of protein and ribosomes?
(v) Basically kingdom protista is defined by exclusion, how?
(vi) How slime moulds adopt unfavourable and favourable conditions?
(vii) Why phytophthora infestans is infamous in human history?
(viii) What type of pigments are found in rhodophyta and chlorophyta?
(ix) Define double fertilization. Give its importance.
(x) Write scientific names of potato and amaltas.
(xi) Describe apoplast pathway.
(xii) What are granulocytes?

4. Write short answers to any SIX (6) questions : 12

(i) Write down contributions of E-Chatton.
(ii) Shortly write down the structure of bacteria.
(iii) Write down the role of nitrogen and phosphorus in plant growth.
(iv) Write few lines on filter feeders.
(v) Differentiate cardiac and pyloric sphincter with reference to their function.
(vi) Write down CO_2 concentration in arterial and venous blood.
(vii) What is the role of partial pressure of O_2 during shock?
(viii) Write short note on asthma.
(ix) How rubisco is converted into serine?

SECTION – II

Note : Attempt any THREE questions.

5. (a) Give the details of biological conservation and protection of environment. 4
   (b) What is immunity? Discuss its major types. 4
6. (a) What is RNA? Describe its different types. 4
   (b) Discuss the economic gains due to fungi. 4
7. (a) Cell membrane and nuclear material of bacteria differ from that of eukaryotic cell. Explain. 4
   (b) How the life cycle of an angiospermic plant differs from a gymnospermic plant? 4
8. (a) Illustrate the life cycle of bacteriophage diagrammatically. 4
   (b) Give in detail the carbon fixation and reduction phase of Calvin Cycle. 4
9. (a) Discuss structure and chemical composition of cell wall. 4
   (b) Explain the process of digestion in oral cavity of man. 4