

Roll No _____ (To be filled in by the candidate) (Academic Sessions 2017 – 2019 to 2020 – 2022)

BIOLOGY

221-(INTER PART – I)

Time Allowed : 20 Minutes

Q.PAPER – I (Objective Type)

GROUP – I

Maximum Marks : 17

PAPER CODE = 6465 LMR-91-21

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	A respiratory pigment of blue in color called haemocyanin is present in animals of which phylum : (A) Porifera (B) Coelentrata (C) Mollusca (D) Arthropoda
2	In bacteria when the division is in three planes it will produce which arrangement : (A) Streptococcus (B) Tetrad (C) Sarcina (D) Diplococcus
3	As a result of energy conversion during light dependant reaction, reducing and assimilatory power is formed in the form of : (A) NADP (B) ADP (C) NAD (D) NADPH ₂ and ATP
4	Water makes how much percent of total cell weight in bacterial cell : (A) 40% (B) 50% (C) 60% (D) 70%
5	In myocardial infarction, which organ is affected : (A) Lungs (B) Eye (C) Kidney (D) Heart
6	Nuclear fusion in basidium is followed by : (A) Meiosis (B) Mitosis (C) Budding (D) Binary fission
7	One micrometer (μm) is equal to : (A) 1×10^{-6} of a meter (B) 1×10^{-7} of a meter (C) 1×10^{-8} of a meter (D) 1×10^{-9} of a meter
8	Zoogeography is study of distribution of what in nature : (A) Animals (B) Plants (C) Trees (D) Zoos
9	Shark liver oil is used in medicine as a source of vitamins : (A) A and B (B) A and C (C) A and D (D) A and E
10	Oxygen diffuses how many times more quickly in air than in water : (A) 8 times (B) 80 times (C) 800 times (D) 8000 times
11	Which is included in non-vascular plants : (A) Hornworts (B) Whisk ferns (C) Club mosses (D) Horse tails
12	The major cell infected by HIV is : (A) B-lymphocytes (B) Neutrophils (C) Helper T-lymphocytes (D) Basophils
13	It is a third mechanism to defend the body against the foreign invaders is : (A) Skin (B) Mucous membranes (C) Phagocytes (D) Immune system
14	Trypanosoma is transmitted by the bite of infected : (A) Mosquito (B) Dragon fly (C) House fly (D) Tsetse fly
15	An activated enzyme consisting of polypeptide chain and a cofactor is known as : (A) Holoenzyme (B) Apoenzyme (C) Alloenzyme (D) Co-enzyme
16	Which of the following is related to phytol : (A) $C_{20}H_{39}$ (B) $C_{39}H_{20}$ (C) $C_{22}H_{40}$ (D) $C_{40}H_{22}$
17	Incomplete or imperfect digestion is called : (A) Ulcer (B) Obesity (C) Dyspepsia (D) Botulism

SECTION – I LHR-G1-21

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

- (i) Write down the functions of proteins.
- (ii) Define co-factor and activator.
- (iii) What do you mean by lock and key method?
- (iv) Differentiate between competitive and non-competitive inhibitors.
- (v) Differentiate between septate and non-septate hyphae.
- (vi) How fungi is economically helpful in food industry?
- (vii) Differentiate between proterostomia and deuterostomia.
- (viii) How locomotion takes place in annelids?
- (ix) Define metamorphosis.
- (x) How mammals have evolved from reptilian ancestors?
- (xi) What is Rubisco? Write down its functions.
- (xii) Write down the molecular formulae for chlorophyll “ a ” and “ b ”.

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

- (i) Define biotechnology.
- (ii) Define hydroponic culture technique.
- (iii) What is cell fractionation technique?
- (iv) Differentiate between microtubule and microfilament.
- (v) What are amoebae? Give example.
- (vi) What are kelps?
- (vii) Give characteristics of red algae.
- (viii) Define slime molds.
- (ix) Define bryophytes.
- (x) What is double fertilization?
- (xi) Differentiate between granulocytes and agranulocytes.
- (xii) What are blue babies?

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

- (i) Define binomial nomenclature. Give two examples.
- (ii) Write down about the structure of plasmid in bacteria.
- (iii) Write about three important ingredients of saliva.
- (iv) Define symbiotic nutrition.
- (v) How trapping and decomposition of insects occur in pitcher plant?
- (vi) Write two properties of respiratory surfaces in animals.
- (vii) Define larynx.
- (viii) Differentiate between diaphragm and pleura.
- (ix) What is asthma?

SECTION – II

Note : Attempt any THREE questions.

5. (a) What is biological method? Discuss it under following headings :
(i) Theory (ii) Law 4
(b) Write a note on types of immunity. 4
6. (a) Describe secondary and tertiary structure of protein. 4
(b) Write a note on ascomycetes. Also give importance of yeast. 4
7. (a) Describe physical and chemical methods to control bacteria. 4
(b) Describe land adaptations in bryophytes. 4
8. (a) Write notes on smallpox and polio. 4
(b) Draw and describe the Calvin Cycle. 4
9. (a) What are plastids? Give their three types and explain only chloroplast in detail. 4
(b) Discuss nutrition in insectivorous plants. (Any two) 4

Roll No _____ (To be filled in by the candidate) (Academic Sessions 2017 – 2019 to 2020 – 2022)
BIOLOGY 221-(INTER PART – I) Time Allowed : 20 Minutes
 Q.PAPER – I (Objective Type) GROUP – II Maximum Marks : 17

PAPER CODE = 6466 **LHR-62-21**

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	Mammals have evolved from reptilian ancestors called :
	(A) Cotylosaurs (B) Echidna (C) Opossum (D) Archaeopteryx
2	Mesosomes are internal extensions of the :
	(A) Cell membrane (B) Cell wall (C) Capsule (D) Slime
3	Calvin cycle is also known as :
	(A) C ₃ pathway (B) C ₄ pathway (C) C ₅ pathway (D) C ₆ pathway
4	The heterogenous group of compounds related to fatty acids is called :
	(A) Lipids (B) Carbohydrates (C) Proteins (D) Water
5	Single circuit heart is found in :
	(A) Amphibians (B) Reptiles (C) Aves (D) Fishes
6	Lovastatin is fungal product which lowers blood :
	(A) Sugar (B) Cholesterol (C) Urea (D) Calcium
7	The process of taking in solid material by cell membrane is called :
	(A) Pinocytosis (B) Exocytosis (C) Phagocytosis (D) Autophagy
8	The reasoning that moves from general to specific is called :
	(A) Inductive (B) Deductive (C) Scientific (D) None of these
9	Which one of the following is placental mammal :
	(A) Echidna (B) Kangaroo (C) Bat (D) Kingfisher
10	Respiratory pigment present in muscles is called :
	(A) Myoglobin (B) Haemoglobin (C) Haemocyanin (D) Globulin
11	All seed producing plants are called :
	(A) Bryophytes (B) Anthrophytes (C) Pteridophytes (D) Spermatophytes
12	Solanum tuberosum is the scientific name of :
	(A) Onion (B) Tomato (C) Potato (D) Garlic
13	The pathway involving system of adjacent cell walls throughout plant root is called :
	(A) Symplast (B) Apoplast (C) Plasmodesmata (D) Vacuolar
14	Algae differ from plants in that sex organs in algae are :
	(A) Multicellular (B) Acellular (C) Unicellular (D) None of these
15	Enzymes involved in photosynthesis are found in :
	(A) Lysosomes (B) Chloroplast (C) Leucoplast (D) Vacuoles
16	Chlorophyll "a" is :
	(A) Yellow green (B) Blue green (C) Orange green (D) Red green
17	The first part of small intestine is called :
	(A) Rectum (B) Ileum (C) Jejunum (D) Duodenum

Roll No _____ (To be filled in by the candidate) (Academic Sessions 2017 – 2019 to 2020 – 2022)

BIOLOGY 221-(INTER PART – I)

Time Allowed : 2.40 hours

PAPER – I (Essay Type)

GROUP – II

Maximum Marks : 68

SECTION – I *MM-42-21*

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

16

- (i) What is chemical definition of carbohydrates? Give its general formulae.
- (ii) Define reversible inhibitors. Name its two types.
- (iii) Write the induce-fit-model of enzyme action.
- (iv) Write the function of penicillin and lovastatin.
- (v) Name the fruiting body of Fungi, Ascomycota and Basidiomycota.
- (vi) Describe co-factor and co-enzyme.
- (vii) Define term protandrous and gemmule.
- (viii) What is archaeopteryx? Give its two characters.
- (ix) Name two super classes of vertebrates. Give example.
- (x) Write any four characters of class osteichthyes (Bony fish).
- (xi) What is Cytochrome? Give its role.
- (xii) Define chemiosmosis.

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

16

- (i) What is inductive reasoning, give one example?
- (ii) Write briefly about hydroponic culture technique.
- (iii) Why the plasma membrane is a differentially permeable membrane?
- (iv) Differentiate between microtubules and microfilaments.
- (v) Write two characters of Zooflagellates.
- (vi) Write the functions of micronucleus and macronucleus in ciliates.
- (vii) Write two characters of euglenoids.
- (viii) How does conjugation occur in ciliates?
- (ix) What is heterospory?
- (x) Define double fertilization, in which plants it occur.
- (xi) What is apoplast pathway?
- (xii) Define imbibition in plants.

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

12

- (i) Define binomial system of nomenclature.
- (ii) What are microaerophilic bacteria? Give one example.
- (iii) What are leguminous plants?
- (iv) Differentiate between intracellular and extra cellular digestion.
- (v) What is antiperistalsis?
- (vi) How aquatic plants obtain their oxygen?
- (vii) What is a larynx?
- (viii) What is diaphragm?
- (ix) What is the main cause of lungs cancer?

SECTION – II

Note : Attempt any **THREE** questions.

5. (a) How biology has helped in increasing food production? 4
- (b) Explain various functions of blood in human. 4
6. (a) Write short note on lipids. 4
- (b) Give detail of taxonomic status of fungi. 4
7. (a) Describe characteristics of cyanobacteria. 4
- (b) Elaborate evolution of seed habit in plants. 4
8. (a) Describe infection cycle of HIV. 4
- (b) Draw and explain glycolysis in detail. 4
9. (a) Write a note on structure and function of plastids. 4
- (b) Write about food poisoning and obesity. 4