MODEL PAPER OF BIOLOGY FOR CLASS-11

Objective Type

Paper: BIOLOGY

Time Allowed: 20 Minutes **Max. Marks: 17**

Q-1: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct; fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question.

1	According to Carl Woese's system, which of the following is NOT a domain?	
	A) Archaea	B) Bacteria
	C) Protista	D) Eukarya
2	A marine biologist observes a sessile, cylindrical Cnidarian attached to a rock reproducing asexually. Which body form is it?	
	A) Medusa	B) Larva
	C) Polyp	D) Ephyrans
3	During sporulation, what happens to the DNA of the vegetative cell?	
	A) It doubles	B) It disintegrates
	C) It remains intact	D) It forms RNA
4	Which property of the lipid bilayer makes it impermeable to sugars and polar amino acids?	
	A) Hydrophilic interior	B) Hydrophobic interior
	C) Presence of glycoproteins	D) Presence of cholesterol only
5	If a cell has high concentration of lipids, what property of water will influence their arrangement?	
	A) Heat of vaporization	B) Hydrophobic exclusion
	C) Specific heat capacity	D) Hydrogen bonding in proteins
6	If a DNA strand has the sequence 5'-AGCT-3', what is its complementary strand sequence?	
	A) 3'-TCGA-5'	B) 5'-TCGA-3'
	C) 3'-AGCT-5'	D) 5'-AGCT-3'
7	The enzymes catalyse non-hydrolytic addition or removal of groups from substrate:	
	A) Hydrolases	B) Lyases
	C) Isomerase	D) Transferases
8	How does ATP synthase produce ATP during light-dependent reactions?	
	A) By hydrolysing glucose	B) By using light directly
	C) By chemiosmosis	D) By splitting NADPH

9	In first step of citric acid cycle Acetyl Co enzyme reacts with oxaloacetate to form	
	A) Pyruvate	B) Fumarate
	C) Isocitrate	D) Citrate
10	How does abscisic acid affect guard cells?	
	A) Increases K+ influx	B) Promotes stomatal opening
	C) Inhibits K+ uptake	D) Enhances sugar formation
11	Cells with spherical nuclei in the centre are found in:	
	A) Zone of cell division	B) Zone of elongation
	C) Zone of differentiation	D) Epidermis
12	What is the function of the pyloric sphincter?	
	A) To store food	B) To allow food into the oesophagus
	C) To absorb nutrients	D) To regulate chyme release
13	What type of ring structure holds the iron ion in a haem group?	
	A) Peptide ring	B) Purine ring
	C) Porphyrin ring	D) Benzene ring
14	How long does diastole last in one complete heartbeat?	
	A) 0.1 sec	B) 0.2 sec
	C) 0.3 sec	D) 0.4 sec
15	Which ECG segment, if prolonged, might indicate a first-degree heart block?	
	A) PR segment	B) ST segment
	C) QT interval	D) QRS complex
16	Which protein is found in thick filaments?	
	A) Actin	B) Tropomyosin
	C) Troponin	D) Myosin
17	Which membrane covers the outer surface of bones?	
	A) Perichondrium	B) Endosteum
	C) Periosteum	D) Epithelium

Paper: BIOLOGY (Subjective Type)

Time: 2:40 hours **Total Marks: 68**

Section-I

Q. 2. Attempt any EIGHT (8) short questions. **(2 × 8=16)**

(i) Classify bacteria on the basis of respiration.

(ii) Compare the characteristics of Protozoa and Algae with examples.

(iii) Differentiate the composition of primary and secondary wall.

(iv) Write the steroid signaling for production of specific production in cells.

(v) Define nuclear pore complex? Write the name of its sub units.

(vi) How are vessels different from tracheids in structure?

(vii) How would sugar transport be affected if sucrose were not actively loaded into the phloem?

(viii) How plants protect themselves in freezing temperature and high temperature.

(ix) Differentiate Autumn wood and spring wood.

(x) Write the structure of layers which separate heart from other parts.

(xi) What is a SA node? Give its functions.

(xii) Give the importance of Hepatic portal vein.

Q. 3. Attempt any EIGHT (8) short questions. **(2 × 8=16)**

(i) How does the structure of bacterial flagellum differ from eukaryotic flagellum?

(ii) What are mesosomes? What are its functions?

(iii) What are the coenzymes? Give two examples.

(iv) Differentiate between reversible and irreversible inhibitors?

(v) What is hydrolase/? Give three examples

(vi) Write the function of chief cells and oxyntic cells.

(vii) Why doesn't food go into the windpipe when we swallow?

(viii) Differentiate between chyme and chyle.

(ix) Differentiate epiphyses and diaphysis.

(x) Define muscle and muscle fibres.

(xi) Evaluate the role of acetylcholine in muscle contraction.

(xii) Define tetany. How it is treated?

Q. 4. Attempt any SIX (6) short questions. **(2 × 6=12)**

(i) Draw the structural formula of α-D- glucose and β-D-glucose

(ii) Differentiate the composition of milk sugar and cane sugar.

(iii) What are prostaglandins? Write any three functions.

(iv) Write the equations showing alcoholic and lactic acid fermentation.

(v) Differentiate between photosynthesis and respiration

(vi) Define compensation point. When does it occur?

(vii) Define pleural cavity. How is it formed?

(viii) Give the role of diaphragm in breathing.

(ix) What is myoglobin? Give its one function.

(Section-II)

Note: Attempt any THREE questions. **(8× 3 = 24)**

Q. 5. a) What are the main features of chordates? (4)

b) Justify in what way blood circulatory system of humans is dependent on lymphatic system. (4)

Q. 6. a) Describe the structure of a mitochondrion in detail. How does its structure relate to its function in the cell? (4)

b) Small intestine walls are well adapted for absorption of food. Justify. (4)

Q. 7. a) How does chemiosmosis couple redox reactions with ATP formation? (4)

b) Explain the structure of lungs. (4)

Q. 8. a) Describe the process of sporulation in bacteria. (4)

b) Describe the steps involved in the sliding filament model of muscle contraction. (4)

Q. 9. a) Justify the significance of the sequence of amino acids through the example of sickle cell anemia. (4)

b) Explain in detail the pressure-flow hypothesis for phloem translocation. (4)