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

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) Mammals ●
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 $\psi_p = 800\,kPa$ and $\psi_s = -2000\,kPa$, then ψ_w will be :			
	(A) 2800 kPa	(B) - 2800 kPa	(C) 1200 kPa	(D) - 1200 kPa ●

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 : 2.40 hours

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

SECTION – I

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) Lycopsids 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

No _____ (To be filled in by the candidate) **(Academic Sessions 2020 – 2022 to 2023 – 2025)**

IOLOGY 224-1st Annual-(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.

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 Kreb (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

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 : 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) 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

Roll No. : _____

Objective
Paper Code
6463

Intermediate Part First

BIOLOGY (Objective) GROUP - I

Time: 20 Minutes Marks: 17

Q.No.1 **You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill the relevant circle in front of that question number on computerized answer sheet. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question. Attempt as many questions as given in objective type question paper and leave other circles blank.**

S.#	Questions	A	B	C	D
1	Production of glucose is most closely associated with:	Aerobic respiration	Anaerobic respiration	Krebs cycle	Calvin cycle
2	Which group would you assign to a plant which produces spores and embryo but lack seed and vascular tissue?	Angiosperm	Bryophyte	Algae	Gymnosperm
3	Normal pH of human blood is:	6.4	7.4	8.4	4.7
4	The systolic pressure of normal human is:	70 mm Hg	90 mm Hg	100 mm Hg	120 mm Hg
5	Spiracles are found in:	Fishes	Cockroach	Frog	Birds
6	Dipeptides are broken down into amino acid by an enzyme called:	Erypsin	Trypsin	Lactase	Maltose
7	Pyruvic acid is produced as result of:	Calvin cycle	Glycolysis	Electron transport chain	Krebs cycle
8	Syrinx is organ of voice of:	Goat	Crow	Toad	Snake
9	Commercially shark-liver oil is extracted and used as source of vitamin:	B	C	B_{12}	A & D
10	Loose smut of wheat is caused by:	Phytophthora	Rhizopus	Puccinia	Ustilago
11	Kelps are largest of known algae which belongs to:	Diatoms	Red algae	Brown algae	Green algae
12	When tuft of flagella is present at one pole of bacteria, which term we will use?	Lophotrichous	Amphitrichous	Peritrichous	Atrichous
13	Pigs are source of hepatitis type:	B	C	D	E
14	The attachment of two subunits of ribosomes is controlled by:	Fe^{2+}	Ca^{2+}	Mg^{2+}	Fe^{3+}
15	If non-protein part of an enzyme is loosely attached to the protein part, it is known as:	Coenzyme	Holoenzyme	Activator	Prosthetic group
16	How many hydrogen bonds are present in adenine and thymine pair in DNA?	Two	Three	One	Six
17	Which one of these is percentage of oxygen by mass of human being?	10%	65%	18%	1%

Intermediate Part First

Roll No. _____

BIOLOGY (Subjective) GROUP - I

Time: 02:40 Hours Marks: 68

SECTION – I

2. **Write short answers to any EIGHT parts.** 16

(i) Define specific heat capacity of water.
(ii) Differentiate between cofactor and activator.
(iii) What is feedback inhibition of enzymes?
(iv) How substrate concentration affects enzyme activity?
(v) What is nuclear mitosis? In which organisms it is found?
(vi) Differentiate between ectomycorrhizae and endomycorrhizae.
(vii) Differentiate between Radiata and Bilateria.
(viii) What is mantle? Write its function.
(ix) Differentiate the spiral and determinate cleavage.
(x) What is Archaeopteryx? Write its reptilian and avian characters. (one each)
(xi) What is compensation point?
(xii) Define action spectrum and absorption spectrum.

3. **Write short answers to any EIGHT parts.** 16

(i) How organelle is different from organ?
(ii) What is the biological control? Give an example.
(iii) Write first two salient features of cell theory.
(iv) Define endocytosis and exocytosis.
(v) How kingdom protista was created?
(vi) Differentiate micronucleus and meganucleus in ciliates.
(vii) Compare slime molds with fungi.
(viii) Why brown algae are important?
(ix) What is the importance of photorespiration?
(x) It is said that "smokers invite Cancer". How?
(xi) How artificial pace maker works?
(xii) Differentiate antigen and antibody.

4. **Write short answers to any SIX parts.** 12

(i) Write the scientific name of brinjal and onion.
(ii) What are super blue green algae? Give their importance.
(iii) What is meant by phylogenetic system of classification?
(iv) Why seed is considered a crucial adaptations for terrestrial life of plants?
(v) Why bryophytes are called amphibious plants?
(vi) What is meant by heterogamy?
(vii) What is botulism? Give its cause.
(viii) Can we live without large intestine? Comment.
(ix) What do you know about detritivores? Give an example.

SECTION – II Attempt any THREE questions. Each question carries 08 marks.

5. (a) Explain the biological method for solving biological problems. 04
(b) Discuss mechanical aspects of breathing in man. 04

6. (a) Write an account on acylglycerol. 04
(b) Write characteristics of Basidiomycota. 04

7. (a) Write structure and function of cell wall. 03,01
(b) Write notes on (i) Food Poisoning (ii) Ulcer. 02,02

8. (a) Explain four viral diseases common in Pakistan. 04
(b) Describe the characteristics and functions of white blood cells. 02,02

9. (a) Discuss the habitat, structure and reproduction of nostoc. 01,01,02
(b) What is respiration? Explain the anaerobic respiration in detail. 01,03

Roll No. : _____

Objective Paper Code **6464**

Intermediate Part First

BIOLOGY (Objective) GROUP - II

Time: 20 Minutes Marks: 17

Q.No.1 You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill the relevant circle in front of that question number on computerized answer sheet. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question. Attempt as many questions as given in objective type question paper and leave other circles blank.

S.#	Questions	A	B	C	D
1	If $\psi_w = -800kPa$ and $\psi_s = -1400kPa$, then ψ_p will be:	600 kPa	– 600 kPa	– 2200 kPa	2200 kPa
2	How many liters of blood are present in man whose body weight is 96kgs?	6	7	8	9
3	When carbon dioxide pressure increases, the capacity of haemoglobin to hold oxygen is:	Decreased	Increased many folds	Remained constant	Doubled
4	Dipeptides are broken down into amino acids by:	Lipase	Pepsin	Trypsin	Erypsin
5	The NADPH molecule reduces the sugar during in:	Cyclic phosphorylation	Non cyclic phosphorylation	Calvin cycle	Electron transport chain
6	The molecular formula of chlorophyll "b" is:	$C_{55}H_{72}O_5N_4Mg$	$C_{55}H_{70}O_6N_4Mg$	$C_{50}H_{72}O_5N_4Mg$	$C_{50}H_{70}O_6N_4Mg$
7	The left aortic arch is present in:	Cat	Crow	Frog	Cockroach
8	Polymorphism is the characteristics of phylum:	Mollusca	Arthropoda	Coelenterata	Porifera
9	The earliest group of vascular plants belongs to:	Psilopsida	Lycopsida	Sphenopsida	Pteropsida
10	Citric acid is obtained from a species of:	Aspergillus	Penicillium	Saccharomyces	Neurospora
11	Polysiphonia is an example of:	Green algae	Red algae	Brown algae	Golden algae
12	Which type of the bacterium E.coli is?	Aerobic	Anaerobic	Microaerophilic	Facultative anaerobic
13	The scientific name of tomato is:	Solanum nigram	Solanum tuberosum	Solanum esculentum	Allium cepa
14	Organelles found in both prokaryotic and eukaryotic cells are:	Endoplasmic reticulum	Mitochondria	Ribosomes	Lysosomes
15	Vitamins are the essential raw material for the synthesis of:	Prosthetic group	Coenzyme	Activator	Apoenzyme
16	The secondary structure of protein is found in:	Trypsin	Insulin	Glucagon	Keratin
17	Tentative explanation of observation is called as:	Hypothesis	Deduction	Theory	Law

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Intermediate Part First

BIOLOGY (Subjective) GROUP - II

Roll No. _____

Time: 02:40 Hours Marks: 68

SECTION – I

2. **Write short answers to any EIGHT parts.** 16
   (i) How yeast differs from other fungi?
   (ii) What is parasexuality? Give its importance.
   (iii) Write three general characteristics of animals.
   (iv) Name two animals in which hairs have become modified.
   (v) How water enters water vascular canals in echinoderm? Name that structure and its location on body side.
   (vi) What are two adaptations for parasitic mode of life in flatworms?
   (vii) Why do all biochemical reactions not follow the lock and key model?
   (viii) What are enzymes? Give their importance.
   (ix) How does enzymes accelerate the rate of metabolic reaction?
   (x) Why photosynthesis is called redox process? Write its equation.
   (xi) What is photosystem? Name its two parts.
   (xii) How would you identify starch and glycogen solution?
3. **Write short answers to any EIGHT parts.** 16
   (i) Define bioelements. Name the bioelements which occur in traces in human body.
   (ii) Distinguish the micromolecules and macromolecules.
   (iii) Give two functions of endoplasmic reticulum.
   (iv) Define cell. Who discovered the cell?
   (v) What are kelps? Give their structure.
   (vi) Differentiate the diatoms and dinoflagellates.
   (vii) How algae differ from plants?
   (viii) Define water blooms. What is their effect on animals?
   (ix) Differentiate the organismic respiration from cellular respiration.
   (x) What are tracheoles in cockroach and state their function?
   (xi) Name four parts of heart of fishes.
   (xii) Differentiate the osmotic potential and pressure potential.
4. **Write short answers to any SIX parts.** 12
   (i) Differentiate the phage virus and a prophage.
   (ii) What are plasmids? Give their importance for bacteria.
   (iii) How would you clarify microphylls and megaphylls?
   (iv) Why calyx and corolla are called non-essential reproductive parts of flower?
   (v) How ovules of gymnosperms differs from that of angiosperms?
   (vi) What are arthrophyte plants? Give example.
   (vii) Write names and position of salivary glands in man.
   (viii) Where are the villi located? Give their role.
   (ix) How Sundew (Drosera) shows its insectivorous activity?

SECTION – II Attempt any THREE questions. Each question carries 08 marks.

5. (a) Suggest measures to conserve deteriorating environment of Pakistan. 04
   (b) Air is better respiratory medium than water. Justify. 04
6. (a) Define lipids. Explain phospholipids with their structural formula. 01,02,01
   (b) Describe different ways in which fungi are useful and harmful to human. 02,02
7. (a) What are lysosomes? If some lysosomal enzymes are absent, what happens? Explain it with examples. 01,03
   (b) The digestive tract of a sheep is different from that of cats. How? 04
8. (a) Give biological classification of corn. Also write the importance of binomial nomenclature. 02,02
   (b) How evolution of heart took place in vertebrates? 04
9. (a) Write characteristics and economic importance of cyanobacteria. 04
   (b) Discuss and draw Calvin cycle. 04

Roll No. of Candidate : _____

BIOLOGY **Intermediate Part-I , Class 11th (1stA 324- IV)** **Paper : I** **Group – I**

Time: 20 Minutes **OBJECTIVE** **Code : 6467** **Marks: 17**

Note: 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 mark in that question.

1. 1 - Retroviruses have special enzyme which can convert a single stranded RNA to double stranded DNA , named as

(A) catalase (B) reverse transcriptase (C) sucrase (D) arginase

2 - The substance which inhibits blood clotting is

(A) heparin (B) histamine (C) fibrin (D) albumin

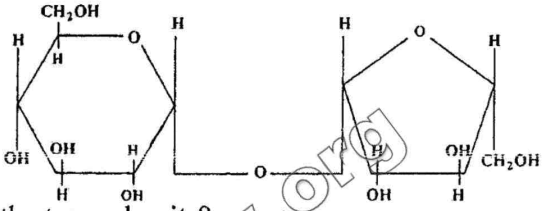
3 - What happens to Oxygen in respiratory electron transport chain?

(A) forms CO_2 (B) released as gas (C) forms NAD (D) reduced to H_2O

4 - The causal organism of amoebic dysentery in human, is

(A) Paramecium (B) Amoeba (C) Tse-Tse fly (D) Entamoeba

5 - This diagram shows a Carbohydrate,



What is the name of bond which links the two subunits?

(A) A Glycosidic bond (B) A Hydrogen bond (C) A Peptide bond (D) Ester linkage

6 - Diameter of bronchiole is about

(A) 1 mm (B) 2 mm (C) 3 mm (D) 4 mm

7 - Double fertilization is the characteristic of

(A) Angiosperms (B) Gymnosperms (C) Bryophytes (D) Ferns

8 - During fermentation, the amount of energy present within the chemical bonds of glucose which is converted to ATP, is

(A) 1% (B) 98% (C) 2% (D) 99%

9 - In normal human body, the percentage of plasma in blood is

(A) 90% (B) 45% (C) 10% (D) 55%

10 - New ribosomes are assembled in

(A) Nucleolus (B) Mitochondrion (C) Lysosomes (D) Golgi apparatus

11 - A group of similar cells that performs a specific function is called

(A) system (B) organelle (C) organ (D) tissue

12 - The phase of rapid growth in bacteria is called

(A) stationary phase (B) log phase (C) lag phase (D) death phase

13 - Which one of the following is the length of the giant squid?

(A) 10 meter (B) 50 meter (C) 200 meter (D) 15 meter

14 - The first part of small intestine is called

(A) jejunum (B) duodenum (C) ileum (D) colon

15 - In most of the sponges, outer layer of body wall is made up of

(A) Choanocytes (B) pinacocytes (C) erythrocytes (D) leucocytes

16 - Lovastatin is used for lowering

(A) blood salts (B) blood glucose (C) blood pressure (D) blood cholesterol

17 - The inorganic and detachable cofactor is called

(A) coenzyme (B) prosthetic group (C) activator (D) inhibitor

BIOLOGY | Intermediate Part-I , Class 11th (1stA 324) | Paper : I | Group – I

Time: 2:40 Hours | SUBJECTIVE | Marks: 68

Note: Section-I is compulsory. Attempt any three (3) questions from Section-II.

SECTION – I

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

i - Write down the comparison between saturated and unsaturated fatty acids with example.
ii - What is effect of enzyme concentration on the rate of reaction?
iii - Why some enzymes are produced in inactive form? Give one example.
iv - Define Induce Fit Model of enzyme and who proposed it?
v - Compare obligate parasite with facultative parasite with example.
vi - What are Mycorrhizae? Give their importance.
vii - Give two comparisons of protostomia and deuterostomia with example.
viii - Define Placenta, give its function.
ix - How are Echinoderms related to chordates?
x - What are prototherian mammals? Give an example.
xi - Differentiate absorption and action spectrum.
xii - Define Calvin Cycle. Where does it occur?

3. Write short answers to any EIGHT questions. **(2 x 8 = 16)**

i - Define biological method. What is biological problem?
ii - How would you distinguish between biological control and bioremediation?
iii - Who stated "Omnis cellula e cellula"? What does it mean?
iv - Define congenital diseases? Give examples and their causes.
v - Write down name of a parasitic amoeba. What disease does it cause?
vi - What are red tides?
vii - Why slime moulds are included in Kingdom protoctista?
viii - How Phytophthora infestans caused Irish potato famine?
ix - What is the role of mitochondria in photorespiration?
x - How scuba diver breaths pressurized air?
xi - What is the difference between pulmonary and systemic circulation?
xii - How blood helps in maintaining internal environment of body?

4. Write short answers to any SIX questions. **(2 x 6 = 12)**

i - Give any four symptoms of hepatitis.
ii - Write down four postulates of "Germ Theory of Disease".
iii - How does peristalsis differ from antiperistalsis?
iv - Clarify the terms villi and microvilli.
v - What are the symptoms of Nitrogen deficiency in plants?
vi - Define double fertilization. Give its importance.
vii - What are fronds? In which class of tracheophyte fronds are present?
viii - Why Bambusa is economically important?
ix - How are Bryophytes considered as amphibians of the plants?

SECTION – II

5. (a) What is Biological organization? Discuss population and community level organization. **(4)**
(b) Describe mechanism of breathing in Man. **(4)**

6. (a) Describe the acylglycerols in detail. **(4)**
(b) Draw a labelled graphic representation of life cycle of rhizopus (no description is needed). **(4)**

7. (a) List organelles which are single membrane bound, double membrane bound and lacking any membrane? Draw a labelled diagram of a section through Mitochondria. **(4)**
(b) Discuss following disorders: **(4)**
(i) Food poisoning (ii) Piles

8. (a) Define species. Discuss binomial nomenclature with biological classification of corn. **(4)**
(b) Define blood. How red blood cells and white blood cells are developed from stem cells in bone marrow? **(4)**

9. (a) Discuss habitat, occurrence, structure and reproduction of Nostoc. **(4)**
(b) Explain respiratory electron transport chain. **(4)**

.oll No. of Candidate : _____

BIOLOGY **Intermediate Part-I , Class 11th (1stA 324- IV)** **Paper : I** **Group – II**

Time: 20 Minutes **OBJECTIVE** **Code : 6468** **Marks: 17**

Note: 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 mark in that question.

1. 1 - The cyclosis and amoeboid movements are due to
(A) microtubules (B) microfilaments ● (C) intermediate filaments (D) membrane

2 - The stunted growth and chlorosis occurs in plants due to deficiency of
(A) Iron (B) Magnesium (C) Nitrogen ● (D) Zinc

3 - One complete heart beat lasts for
(A) 1.0 sec (B) 0.8 sec ● (C) 0.5 sec (D) 0.2 sec

4 - Bacteria divide at exponential rate during
(A) decline phase (B) lag phase (C) log phase ● (D) stationary phase

5 - The animal which has single circuit heart is
(A) Monkey (B) Sparrow (C) Lizard (D) Trout ●

6 - The porphyrin ring of haemoglobin contains
(A) Calcium (B) Iron ● (C) Potassium (D) Phosphorus

7 - The poisonous mushrooms are called
(A) Agaricus (B) Morels (C) Truffles (D) Toad stools ●

8 - Round worms belong to phylum
(A) annelida (B) arthropoda (C) mollusca (D) nematoda ●

9 - The maximum amount of air held by inflated lungs is
(A) 5 liter ● (B) 4 liter (C) 4.5 liter (D) 3.5 liter

10 - The optimum pH for enterokinase is
(A) 1.50 (B) 3.50 (C) 5.50 ● (D) 7.50

11 - A large regional community primarily determined by climate.
(A) biome ● (B) biosphere (C) ecosystem (D) community

12 - Measles and Mumps are caused by a virus belonging to a group called
(A) adenoviruses (B) paramyxovirus ● (C) poxvirus (D) poliovirus

13 - Loligo, Sepia and Octopus are examples of class
(A) Bivalvia (B) Gastropoda (C) Cephalopoda ● (D) Oligochaeta

14 - Plastocyanin contains
(A) Copper ● (B) Iron (C) Magnesium (D) Potassium

15 - The gametophyte of a Moss is
(A) diploid (B) haploid ● (C) polyploid (D) tetraploid

16 - The sexual reproduction in most of ciliates takes place by
(A) conjugation ● (B) binary fission (C) Oogamy (D) fertilization

17 - The normal amount of glucose in human body is
(A) 0.6% (B) 0.8% (C) 0.06% (D) 0.08% ●

BIOLOGY | Intermediate Part-I , Class 11th (1stA 324) | Paper I | Group – II

Time: 2:40 Hours | SUBJECTIVE | Marks: 68

Note: Section-I is compulsory. Attempt any THREE (3) questions from Section-II.

SECTION – I

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

i - What are polysaccharides? Write down the names of four examples.
ii - What is optimum temperature?
iii - State the theory of "Induce Fit Model".
iv - Differentiate the irreversible and reversible inhibitors.
v - Basidiomycetes are called club fungi. Why?
vi - Give the biological names of Rusts and Smut.
vii - Differentiate grade radiata and bilateria.
viii - What is pseudocoelom? How it is different from coelom?
ix - How host is disinfested from a parasite?
x - Differentiate Urochordata and Cephalochordata.
xi - What is the mechanism for ATP synthesis in cyclic and noncyclic photophosphorylation?
xii - Why Calvin cycle is also called C_3 Pathway?

3. Write short answers to any EIGHT questions. **(2 x 8 = 16)**

i - Write down the organ level in plants.
ii - Why it is important to control environmental pollution in Pakistan?
iii - What will happen if a chromosome loses its centromere?
iv - What are leucoplasts? Give their function.
v - Write down any two characteristics of diatoms.
vi - Give two main characters of Oomycotes?
vii - How would you compare green algae with plants?
viii - What are the symptoms of Malaria?
ix - Why is Larynx also known as voice box?
x - What is tuberculosis? Give its causative agents.
xi - What is the contribution of Dixon in Ascent of sap?
xii - Transpiration is considered as a necessary evil. How?

4. Write short answers to any SIX questions. **(2 x 6 = 12)**

i - Define binomial nomenclature, give its rules.
ii - Give comparison between amphitrichous and peritrichous bacteria.
iii - Define ovule and embryo sac.
iv - Differentiate between the bryophytes and tracheophytes.
v - Give two vegetative characters of family Solanaceae with example.
vi - Compare Dicot with Monocot plants.
vii - What is macrophagous feeding? Give an example.
viii - Define digestion. Write down its types.
ix - Write down the role of Gastrin.

SECTION – II

5. (a) Write down a note on biological organization at population and community level. **(4)**
(b) In what ways is respiration in birds the most efficient and elaborate? **(4)**

6. (a) Why Carbon is considered to occupy the central position in skeleton of life? **(4)**
(b) Write down the disease cycle of loose smut of wheat. **(4)**

7. (a) Write down in detail structure and functions of plasma membrane. **(4)**
(b) Describe process of digestion in cockroach with the help of labelled diagram. **(4)**

8. (a) Write down the biological classification of Corn (zea mays). **(4)**
(b) Explain pressure flow theory. **(4)**

9. (a) What are pleomorphic bacteria? Discuss different shapes of bacteria. **(4)**
(b) What is glycolysis? Describe substrate level of phosphorylation in oxidative phase of glycolysis. **(4)**

Paper Code Number: 2463	2024 (1st-A) INTERMEDIATE PART-I (11th Class)	Roll No: _____
BIOLOGY PAPER-I GROUP-I		
TIME ALLOWED: 20 Minutes	OBJECTIVE	MAXIMUM MARKS: 17

Q.No.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 bubble in front of that question number, on bubble sheet. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question.

S.#	QUESTIONS	A	B	C	D
1	In spermatophytes seed is formed from:	Anther	Embryo sac	Ovary	Ovule ●
2	Larva produced during the life cycle of annelids is named as:	Trochophore ●	Tadpole	Bipinaria	Brachiolaria
3	The hind limb of birds is modified for:	Flying	Running	Perching ●	Walking
4	During respiratory chain co-enzyme Q is oxidized by:	Cytochrome – a	Cytochrome – b ●	Cytochrome – c	Cytochrome – a_3
5	Acetic acid on entering mitochondria combines with co-enzyme – A to form:	Malate	Oxaloacetate	Acetyl – CoA ●	Fumarate
6	The term employed to the loss of appetite due to the fear of becoming obese is:	Anorexia nervosa ●	Bulimia nervosa	Obesity	Botulism
7	Breakdown of alveoli of lung is termed as:	Asthma	Tuberculosis	Lung cancer	Emphysema ●
8	Histamine that participate in allergic reactions is produced by:	Monocytes	Eosinophils	Neutrophils	Basophils ●
9	Antiserum is a serum containing:	Antigen	Antibodies ●	Hormones	Enzyme
10	An aphid that attacks walnut tree is being controlled biologically by:	Housefly	Honey bee	Mosquito	Wasp ●
11	Cotton is the pure form of:	Cellulose ●	Amino acid	Glycogen	Starch
12	An enzyme with its co-enzyme removed is designated as:	Holoenzyme	Apoenzyme ●	Co-factor	Activator
13	The process of taking in solid material by cell membrane is:	Pinocytosis	Exocytosis	Phagocytosis ●	Autophagy
14	Small pox is caused by:	Bacteria	Fungi	Protozoa	Virus ●
15	Which structure of bacteria helps in DNA replication?	Mesosome ●	Nucleoid	Plasmid	Cyst
16	Tests of actinopods are made up of:	Calcium	Potassium	Silica ●	Sodium
17	The fungi which obtain food from dead organic matter are:	Autotrophs	Saprotrophs ●	Heterotrophs	Parasites

2024 (1st-A)
INTERMEDIATE PART-I (11th Class)

Roll No: _____

OGY PAPER-I GROUP-I

ME ALLOWED: 2.40 Hours | SUBJECTIVE | MAXIMUM MARKS: 68

OTE: Write same question number and its parts number on answer book, as given in the question paper.

SECTION-I

2. Attempt any eight parts. 8 × 2 = 16

(i)	How fats differ from oils?
(ii)	Define an enzyme. Write names of parts of active two sites in enzyme.
(iii)	Write any two characteristics of enzymes.
(iv)	What is Induce Fit Model? Who proposed it?
(v)	Differentiate the obligate and facultative parasite in fungi.
(vi)	In what way composition of cell wall is advantageous to fungi with reference to nutrition?
(vii)	How would you find contrast between ostia and osculum?
(viii)	Write the functions of mantle and radula.
(ix)	Echinoderms are comparatively simple organisms but are placed at the top of invertebrate phyla very close to chordates. Give any two reasons.
(x)	What is Larynx? Give its function.
(xi)	Define accessory pigments. What is their role?
(xii)	How photophosphorylation differs from oxidative phosphorylation?

3. Attempt any eight parts. 8 × 2 = 16

(i)	What is meant by Phyletic lineage?
(ii)	How would you differentiate deductive and inductive reasoning?
(iii)	Give the role of endoplasmic reticulum.
(iv)	What are cisternae?
(v)	Write important features of diatoms.
(vi)	Give ecological importance of dinoflagellates.
(vii)	What are symptoms of malaria?
(viii)	Differentiate foraminiferans and actinopods.
(ix)	What is the affect of pH on capacity of haemoglobin to combine with oxygen?
(x)	Give causes and symptoms of tuberculosis.
(xi)	Write two functions of Monocytes.
(xii)	How would you define source and sink?

4. Attempt any six parts. 6 × 2 = 12

(i)	What is prophage? How it differs from virion?
(ii)	Differentiate slime and endospore.
(iii)	Write distinguishing characters of bryophytes.
(iv)	Write the structure of ovule of angiosperms.
(v)	Write two differences between monocots and dicots.
(vi)	What is pollen tube? Write its function.
(vii)	What are detritivores? Give an example.
(viii)	Define peristalsis and antiperistalsis.
(ix)	What is chyme? Give its effect on duodenum.

SECTION-II

NOTE: Attempt any three questions. 3 × 8 = 24

5.(a)	How biology is helpful for protection and conservation of environment?	4
(b)	In what way respiration in birds is the most efficient and elaborate?	4
6.(a)	Draw the structure of a Mononucleotide. Differentiate DNA and RNA.	1+3=4
(b)	What is the importance of unicellular fungi? Discuss ecological impact of fungi.	1+3=4
7.(a)	Write any four differences between Prokaryotes and Eukaryotes.	1+1+1+1=4
(b)	Discuss food selection, grinding, lubrication and digestion functions of oral cavity of man.	1+1+1+1=4
8.(a)	What is Hepatitis? Describe its different types.	1+3=4
(b)	Write down any eight functions of blood.	4
9.(a)	Classify bacteria with respect to flagella.	4
(b)	Sketch the phases of glycolysis.	4

Paper Code Number: 2464	2024 (1st-A) INTERMEDIATE PART-I (11th Class)	Roll No: _____
BIOLOGY PAPER-I GROUP-II		
TIME ALLOWED: 20 Minutes	OBJECTIVE	MAXIMUM MARKS: 17

Q.No.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 bubble in front of that question number, on bubble sheet. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question.

S.#	QUESTIONS	A	B	C	D
1	The process in which viral DNA becomes incorporated into the bacterial chromosome is known as:	Induction	Lysis	Lysogeny ●	Deduction
2	Rapid phase of growth of bacteria is called:	Log phase ●	Lag phase	Decline phase	Stationary phase
3	Parasitic protozoans that form spores at some stage in their life cycle belong to:	Actinopods	Ciliates	Zooflagellates	Apicomplexans ●
4	Asexual reproduction in yeast occurs by:	Conjugation	Budding ●	Fragmentation	Conidia
5	The class of seedless plants containing foliar sporangia is:	Angiospermae	Gymnospermae	Filicineae ●	Algae
6	The largest invertebrate animal is:	Anodonta	Oyster	Octopus	Squid ●
7	Which of the given has a pseudocoelom?	Ascaris	Earth worm	Hydra	Planaria ●
8	Ferredoxin is a protein that contains:	Copper	Iron ●	Magnesium	Sodium
9	The NADH molecule provides the reducing power for the synthesis of sugar during:	Chemiosmosis	Electron transport chain	Calvin cycle ●	Glycolysis
10	Which type of muscles are found in stomach?	Skeletal	Smooth ●	Cardiac	Voluntary
11	Blood is not involved in exchange of gases in:	Fish	Frog	Man	Cockroach ●
12	Guttation occurs in plants through:	Hydathodes ●	Stomata	Cuticle	Lenticels
13	The type of white blood cells which perform Phagocytosis in tissue are:	Basophils	Eosinophils	Monocytes	Neutrophils ●
14	The reasoning that moves from general to specific is called as:	Deductive ●	Inductive	Scientific	Theoretical
15	Animals mainly obtain carbohydrates from:	Glucose	Glycogen	Sucrose	Starch ●
16	Metal ions are related to:	Co-enzyme	Co-factor ●	Vitamin	Substrate
17	Which is not found in secondary wall?	Chitin ●	Inorganic salts	Cutin	Silica

2024 (1st-A)
INTERMEDIATE PART-I (11th Class) | **Roll No:** _____

BIOLOGY PAPER-I GROUP-II

TIME ALLOWED: 2.40 Hours | **SUBJECTIVE** | **MAXIMUM MARKS: 68**

NOTE: Write same question number and its parts number on answer book, as given in the question paper.

SECTION-I

2. Attempt any eight parts. **8 × 2 = 16**

(i)	Give one similarity and one difference between Amylose and Amylopectin.
(ii)	What are enzymes? How they accelerate a metabolic reaction?
(iii)	Write the effect of temperature on the enzyme action.
(iv)	How would you differentiate activator and co-enzyme?
(v)	How mycorrhizal association increases growth of plants?
(vi)	What are toad stools? Give two examples.
(vii)	Why annelids and arthropods are considered having same origin?
(viii)	How would you differentiate ostia and osculum?
(ix)	Write down the economic importance of Molluscs.
(x)	Differentiate the determinate and indeterminate cleavage.
(xi)	Absorption and action spectrum are different. How?
(xii)	Name the processes, which acts as energy-capturing and energy releasing.

3. Attempt any eight parts. **8 × 2 = 16**

(i)	How would you recognize a living organism?
(ii)	Define community with an example.
(iii)	How polysomes are formed?
(iv)	What role is played by centrioles in cell division?
(v)	How protista are different from prokaryotes?
(vi)	How algae differ from the plants in sex organs?
(vii)	What do you know about kelps?
(viii)	How slime molds survive during unfavourable conditions?
(ix)	If photorespiration is inhibited even then plants can grow. Then why does photorespiration exists?
(x)	How counter current exchange increases amount of oxygen in birds?
(xi)	How Abscisic acid controls stomatal movement in plants?
(xii)	Why transpiration is called a necessary evil?

4. Attempt any six parts. **6 × 2 = 12**

(i)	What do you know about capsid and capsomeres?
(ii)	What are pili? Give their functions.
(iii)	How "venus fly trap" catches and digest the insects?
(iv)	Differentiate nutrients and nutrition.
(v)	How would you define detritivores? Give one example of detritivore animal.
(vi)	Funeria is an "amphibians of plant." How?
(vii)	What is phylogenetic system classification?
(viii)	Give two important features of female cone of pinus.
(ix)	What are sori? Give their structure.

SECTION-II

NOTE: Attempt any three questions. **3 × 8 = 24**

5.(a)	Give the role of Biology in the field of protection and conservation of environment.	2+2=4
(b)	Compare the role of haemoglobin and myoglobin in respiration.	3+1=4
6.(a)	Why carbon is called the skeleton of life? Justify it.	4
(b)	Enlist different modes of nutrition in fungi. Describe fungi as predators.	1+3=4
7.(a)	Describe structure and functions of lysosomes.	4
(b)	Why is digestion necessary? Describe what happens to a meal containing fats, carbohydrates and protein while it is in stomach of man.	4
8.(a)	Write characteristics and structure of viruses.	2+2=4
(b)	How ascent of SAP takes place in plants? Explain only Cohesion Tension Theory.	4
9.(a)	Explain the germ theory of disease. Also describe the discovery of bacteria.	2+2=4
(b)	Draw outline of glycolysis. No description is required.	4

Biology	(B)	L.R.No. 1533	Paper Code No. 6463
Paper I	(Objective Type)	Inter (Ist – A – Exam – 2024)	
Time :	20 Minutes	Inter (Part - I)	
Marks :	17	Session (2022 - 24) & (2023 – 25)	

Note : Four choices A , B , C ,D to each question are given. Which choice is correct fill that circle in front of that Question No. on the Objective Bubble Sheet. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

Q.No.1 (1)	Which of the following is true about Birds : (A) They have right aortic arch (B) They have left aortic arch (C) They have right and left aortic arch (D) They do not have aortic arch
(2)	Hydathodes in plants are associated with : (A) Transpiration (B) Guttation (C) Conduction (D) Imbibition
(3)	Respiratory Pigment present in Muscles is called : (A) Myoglobin (B) Globin (C) Haemoglobin (D) Haemocyanin
(4)	In root nodules of Leguminous plants , bacteria convert Nitrogen into : (A) Ammonia (B) Nitrate (C) Urea (D) Nitrite
(5)	The removal of terminal Phosphate of ATP during hydrolysis releases about ____ of energy : (A) 7 . 3 K cal (B) 6 . 3 K cal (C) 5 . 3 K cal (D) 4 . 3 K cal
(6)	Synthesis of ATP in the presence of Oxygen is called : (A) Cyclic Phosphorylation (B) Non-cyclic Phosphorylation (C) Reductive Phosphorylation (D) Oxidative Phosphorylation
(7)	The Phylum in which animals are exclusively marine : (A) Cnidaria (B) Poriphera (C) Echinodermata (D) Annelida
(8)	The worm that damages wood of ships is called : (A) Hookworm (B) Sepia (C) Mytilus (D) Teredo
(9)	Technically a seed may be defined as a fertilized : (A) Egg (B) Ovule (C) Ovary (D) Flower
(10)	Carcinogenic mycotoxins called aflatoxins are produced by (A) Aspergillus (B) Penicillium (C) Neurospora (D) Ustilago
(11)	In 1861, John Hogg proposed the Kingdom : (A) Protista (B) Protoctista (C) Monera (D) Fungi
(12)	Some Bacteria transfer genetic material from donor to recipient Bacteria during a process : (A) Binary Fission (B) Budding (C) Regeneration (D) Conjugation
(13)	The Enzyme involved in viral replication is synthesized : (A) On Viral Capsid (B) By the Host Cell (C) On the interior side of Viral coat (D) On the interior of vlral membrane
(14)	The Undifferentiated cells (such as eggs) have numerous pores about _____ per Nucleus : (A) 300 (B) 30,000 (C) 6 or 8 (D) 3 or 4
(15)	The type of energy lowered by enzymes for Biological reactions to occur is called : (A) Kinetic (B) Potential (C) Ionic (D) Activation
(16)	Which of following Fatty Acid is Unsaturated : (A) Acetic Acid (B) Oleic Acid (C) Butyric Acid (D) Palmitic Acid
(17)	Populations of different Species (Plants & animals) Living in the same Habitat form a : (A) Community (B) Tribe (C) Committee (D) Population

Biology (Subjective)	Inter (Ist – A – Exam – 2024)	Time 2 : 40 Hours Marks : 68

Note: It is compulsory to attempt any (8 – 8) Parts each from Q.No. 2, Q.No.3 and attempt any (6) Parts from Q.No.4. Attempt any (3) Questions from Part – II. Write same Question No. and its Part No. as given in the Question Paper.

Make Diagram where necessary. | Part - I | 22 x 2 = 44

Q.No.2
(i) What is Heat of Vaporization? Give its role in plants .
(ii) What is the difference between Enzyme and Substrate?
(iii) Differentiate between the Reversible and Irreversible Inhibitors.
(iv) What do you know about Lock and Key Model of Enzyme Action?
(v) " Fungi are active predator " . Justify this statement.
(vi) Give economic importance of yeast.
(vii) Write down two differences between Diploblastic and Triploblastic animals .
(viii) Give any four Characteristics / features of Class Amphibia.
(ix) What is Haemocyanin?
(x) How insects are important to mankind ?
(xi) How would you differentiate between the Aerobic and An-Aerobic Respiration?
(xii) What are Cytochromes?

Q.No.3
(i) Differentiate between the Deductive Reasoning and Inductive Reasoning.
(ii) Define Biological Control. Give example.
(iii) What are Microtubules? Give their chemical composition.
(iv) Define Chromoplasts. Write their function.
(v) What is Pellicle ? Give its functions.
(vi) How Algae are classified ? Write names of their Phyla.
(vii) Why Phytophthora infestans is famous for ?
(viii) Write Pigments of Red Algae.
(ix) Define Pleura . Give its function.
(x) What are Parabronchi ? Write their functions.
(xi) Differentiate between the terms Source and Sink in Plants
(xii) What are Granulocytes ? Give their types.

Q.No.4
(i) Differentiate between Virion and Prion.
(ii) What are Mesosomes? Give its two functions.
(iii) What is Alternation of Generation ? Also mention its importance for Plants.
(iv) Define Double Fertilization. Give its Evolutionary Importance.
(v) Write the Scientific name of Lemon Grass.
(vi) Evolution of Pollen tube is great success of Plants on land. Justify.
(vii) What is Peristalsis ? How it is different from Antiperistalsis?
(viii) Differentiate between Digestion and Assimilation .
(ix) Teeth are related to feeding habit in animals . Justify.

Part - II | (3 x 8 = 24)

Q.No.5 (a) How Biological Science is applied in the field of Food Production? (4)
(b) What is Photorespiration? Give its consequences. (4)

Q.No.6 (a) Define Proteins. Describe Primary and Secondary Structures of Protein. (4)
(b) What are Imperfect Fungi? Discuss reproduction in Penicillium. (4)

Q.No.7 (a) Describe Structure and Functions of Mitochondria. (4)
(b) Explain role of Pancreas and Gastric Gland in Digestion of Food. (4)

Q.No.8 (a) What is Binomial Nomenclature ? Who devised this system ? Give its rules. (4)
(b) How soil water reaches Xylem tissues by various pathways? Explain. (4)

Q.No.9 (a) Explain major Characteristics of Cyanobacteria. (4)
(b) How ATP is generated by Cyclic Phosphorylation? Sketch its Diagram. (4)

BIOLOGY		TIME: 20 MINUTES
GROUP : FIRST	OBJECTIVE	MARKS: 17

NOTE: 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 mark in that question.

QUESTION NO. 1 11th Class Biology Objective Paper Group 1 DG Khan Board 2024

1 Magnesium of chlorophyll is replaced in Haemoglobin by :
(A) Calcium (B) Potassium (C) Phosphorous (D) Iron ●

2 Vitamin synthesized by the bacteria in --------- the large intestine is :
(A) Vitamin A (B) Vitamin K ● (C) Vitamin C (D) Vitamin D

3 How much air, lungs can hold when they are fully inflated :
(A) 3.5 litres (B) 1.5 litres (C) 5 litres ● (D) 4 litres

4 The uncontrolled production of white blood cells result in :
(A) Asthma (B) Thalassaemia (C) Oedema (D) Leucaemia ●

5 A hormone released by mesophyll cells at high temperature is :
(A) Abscisic acid ● (B) Amino acid (C) HCl (D) H_2SO_4

6 The control of pests by some living organism is called :
(A) Pest control (B) Living control (C) Biological control ● (D) Organismic control

7 The number of carbon atoms in alkanes found in waxes are :
(A) $C_5 - C_{15}$ (B) $C_{15} - C_{25}$ (C) ● $C_{25} - C_{35}$ (D) $C_{35} - C_{45}$

8 If the co-factor is loosely attached to the protein part, the enzyme is known as :
(A) Co-enzyme ● (B) Apoenzyme (C) Holoenzyme (D) Activator

9 Single membrane bound organelle among the following is :
(A) Chloroplast (B) Mitochondria (C) Nucleus (D) Lysosome ●

10 Mumps and measles are caused by :
(A) RNA naked viruses (B) RNA enveloped viruses ●
(C) DNA naked viruses (D) DNA enveloped viruses

11 Important vector in a modern genetic engineering technique is :
(A) Plasmid ● (B) Nucleoid (C) Ribosome (D) Mesosome

12 Based on molecular data, euglenoids are thought to be closely related to :
(A) Brown Algae (B) Green Algae (C) Diatom (D) Zooflagellates ●

13 Cell wall of fungi is made up of :
(A) Pectin (B) Chitin ● (C) Murein (D) Cellulose

14 Male gametophyte has two wings in :
(A) Cycas (B) Pinus ● (C) Taxus (D) Picea

15 Process of shedding off the exoskeleton in arthropods is called :
(A) Ecdysis ● (B) Excretion (C) Lysis (D) Splitting

16 Arthropods which are mostly aquatic are called :
(A) Insects (B) Arachnids ● (C) Crustaceans (D) Myriapods

17 The most abundant Photosynthetic pigment among the chlorophylls is :
(A) Chlorophyll a ● (B) Chlorophyll b (C) Chlorophyll c (D) Chlorophyll d

SECTION – I

QUESTION NO. 2 Write short answers to any Eight (8) of the following 16

i	Why are lipids considered to be high energy compounds ?
ii	In enzymes, what happen when Non – Protein part attaches and detaches from protein part ?
iii	What is the difference between prosthetic group and co-enzyme ?
iv	Differentiate the Irreversible and Reversible inhibitors.
v	What is Histoplasmosis ? How does its infection occurs ?
vi	How do the predator fungi obtain their food ?
vii	How fertilization in Reptilia differ from Amphibia ?
viii	What is metameric segmentation ? In which phylum it is present ?
ix	Why are Echinoderms placed closest to chordates ?
x	How respiration takes place in amphioxus ?
xi	Give molecular formula of chlorophyll " a " and chlorophyll " b ".
xii	Write down importance of ATP.

QUESTION NO. 3 Write short answers to any Eight (8) of the following 16

i	Define Tissue level. Give an example each of animal and plant tissue
ii	What do you know about " Integrated Disease Management " ?
iii	Why centrifugation is necessary for cell fractionation ?
iv	What is endocytosis ? Name its types.
v	Kingdom Protista is defined by exclusion. Why ?
vi	What do you know about choanoflagellates ?
vii	What is the role of diatoms in aquatic ecosystem ?
viii	What is the infamous role of water molds in human history ?
ix	Why a scuba diver breaths pressurized air from cylinders ?
x	Which respiratory pigment has more affinity with oxygen ? Write its function.
xi	Differentiate the open and closed circulatory system. Give an example
xii	What are causes of extracellular Oedema ?

QUESTION NO. 4 Write short answers to any Six (6) of the following 12

i	What are mumps and measles ?
ii	Give economic importance of cyanobacteria.
iii	Compare annulus with stomium.
iv	Why bryophytes are called amphibious plants ?
v	Differentiate the microphylls and megaphylls.
vi	What is protonema ? Give its structure.
vii	Narrate the terms appendix and appendicitis.
viii	Define Dyspepsia. Give its symptoms.
ix	What are Fluid feeders ? Give two examples.

SECTION-II

Note: Attempt any Three questions from this section 8 x 3 = 24

Q.5.(A)	What are inductive and deductive reasoning ? How can a biological problem be solved through biological method ?	4
(B)	What is diving reflex ? Explain in detail.	1+3
Q.6.(A)	What is peptide bond ? Discuss primary and secondary structure of protein.	1+3
(B)	What are Lichens ? Discuss the ecological importance of Lichens and mycorrhizae.	1+3
Q.7.(A)	Write down structure and functions of endoplasmic reticulum and Golgi complex.	2+2
(B)	How would you explain digestion in small intestine ?	3+1
Q.8.(A)	Describe life cycle of Bacteriophages.	4
(B)	Describe at least light functions of Blood.	4
Q.9.(A)	Explain nutrition of bacteria.	4
(B)	Describe the respiratory chain with the help of figure.	3+1

IOLOGY		TIME: 20 MINUTES
GROUP : SECOND	OBJECTIVE	MARKS: 17

NOTE: 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.

QUESTION NO. 1

1 When CO_2 enters in Calvin cycle, the immediate acceptor of CO_2 is :
(A) 3-phosphoglycerate (B) 1-3 bisphosphoglycerate
(C) Ribulose bisphosphate ● (D) Glyceraldehyde phosphate

2 Zymogen cells of gastric glands secrete :
(A) Hydrochloric acid (B) Mucous (C) Maltose (D) Pepsinogen ●

3 During photorespiration, glycolate diffuses into the membrane bounded organelle is :
(A) Golgi body (B) Peroxisome ● (C) Ribosome (D) Lysosome

4 Cerebral infraction is also known as :
(A) Stroke ● (B) Haemorrhage (C) Heart attack (D) Hypertension

5 The uncontrolled production of white blood cells result in :
(A) Thalassaemia (B) Oedema (C) Leucaemia ● (D) Asthma

6 Triassic, Jurassic and cretaceous are periods of era :
(A) Cenozoic (B) Mesozoic ● (C) Paleozoic (D) Proterozoic

7 Which of the following is not conjugated molecule ?
(A) Polysaccharide ● (B) Glycoprotein (C) Glycolipid (D) Lipoprotein

8 The detachable cofactor of an enzyme is called :
(A) Apoenzyme (B) Co-enzyme (C) Activator ● (D) Prosthetic group

9 Prokaryotic cell wall has :
(A) Cellulose (B) Cutin (C) Lignin (D) Peptidoglycan ●

10 Which one is an insect ?
(A) Cray fish (B) Jelly fish (C) Silver fish ● (D) Star fish

11 The thick walled reproductive cell of cyanobacteria is called :
(A) Heterocyst (B) Akinete ● (C) Hormogonia (D) Trichome

12 Late blight of potato is caused by :
(A) Slime mold (B) Ascomycota (C) Oomycota ● (D) Zygomycota

13 The ecologically important bio-indicator of air pollution :
(A) Mycorrhizae (B) Lichen ● (C) Yeast (D) Bacteria

14 The earliest group of vascular plant is :
(A) Psilopsida ● (B) Pteropsida (C) Lycopsida (D) Sphenopsida

15 The pores from which water leaves the body of sponges are called :
(A) Mouth (B) Anus (C) Ostuim (D) Osculum ●

16 The body cavity of nematoda is :
(A) Coelom (B) Pseudocoelom ● (C) Blastocoel (D) Haemocoel

17 Yellow to orange colour pigments present in chloroplast are :
(A) Chlorophyll 'a' (B) Carotenoids ● (C) Carotenes (D) Xanthophylls

SECTION – I

QUESTION NO. 2 Write short answers to any Eight (8) of the following 16

i	Define metabolism, name its two processes.
ii	How would you differentiate apoenzyme from holoenzyme ?
iii	What is Lock and Key model ? Who proposed it ?
iv	Enlist two conditions that destroy enzyme catalysis by disrupting bonds between atoms in an enzyme.
v	How do fungi resemble animals ?
vi	What are saprobic fungi ? Write their effect on environment.
vii	How does sac like digestive system contrast with tube like digestive system ?
viii	Define metamorphosis. Write its types.
ix	Write economic importance of Sharks.
x	What is syrinx ? Give its function.
xi	How ATP is formed during light dependent reaction ?
xii	What is net production of ATP in glycolysis ?

QUESTION NO. 3 Write short answers to any Eight (8) of the following 16

i	Differentiate chemotherapy and radiotherapy.
ii	Define biodiversity. Give percentage of different groups of organisms on the earth.
iii	What are plastids ? Give names of different types of plastids.
iv	Give any two important functions of Golgi Apparatus.
v	Write down evolutionary significance of Euglenoids.
vi	Give different types of habitats of algae.
vii	What are choanoflagellates ? Give their similarities with sponges.
viii	Give role of micronucleus and macronucleus of ciliates.
ix	Where carbonic anhydrase is present ? Give its role.
x	How does CO_2 affect oxygen carrying capacity of haemoglobin ?
xi	Differentiate symplast and apoplast pathways taken by water to reach xylem tissues.
xii	How can we avoid heart attack ?

QUESTION NO. 4 Write short answers to any Six (6) of the following 12

i	What is Poliomyelitis ? Give its causes.
ii	Write the types of spiral shaped bacteria.
iii	Why Bryophytes are called amphibians of plants ?
iv	What are sori and false indusium?
v	Define Double Fertilization ? Give its importance.
vi	What is protonema ? In which group of plants it is found ?
vii	Define symbiotic nutrition. Give one example.
viii	Compare antiperistalsis and peristalsis.
ix	Write functions of Lacteals.

SECTION-II

Note: Attempt any Three questions from this section 8 x 3 = 24

Q.5.(A)	Compare deductive reasoning with inductive reasoning.	2+2
(B)	How man is responsible for respiratory disorders ? Comment.	4
Q.6.(A)	Discuss the Watson and Crick Model of DNA and draw a labeled diagram.	3+1
(B)	Write different methods of Asexual reproduction in Fungi.	1+1+1+1
Q.7.(A)	What are plastids ? Describe types of plastids and functions.	1+1+2
(B)	Define a parasite. Write a note on parasitic nutrition.	1+3
Q.8.(A)	Write an account on AIDS	1+2+1
(B)	What is Transpiration ? Describe its different types.	4
Q.9.(A)	What are physical methods to control bacteria ?	1x4
(B)	Explain that chloroplasts are the sites of photosynthesis in plants ?	4

☆	Roll No _____

HSSC-(P-I)-A/2024
(For All Sessions)

Paper Code	6	4	6	1

Biology (Objective)

(Group-I) **Time: 20 Minutes** **Marks : 17**

Note: Write Answers to the Questions on the objective answer sheet provided. Four possible answers A, B, C and D to each question are given. Which answer you consider correct, fill the corresponding circle A, B, C or D given in front of each question with Marker or Pen ink on the answer sheet provided.

1.1 The most recent era is:
(A) Paleozoic (B) Mesozoic (C) Cenozoic ● (D) Proterozoic

2. Monosaccharides which are rare in nature and occur in some bacteria are:
(A) Hexoses (B) Pentoses (C) Trioses (D) Tetroses ●

3. An activated enzyme with a polypeptide chain and a co-factor is:
(A) Apaenzyme (B) Holoenzyme ● (C) Coenzyme (D) Activator

4. Which of the following are involved in the breakdown of old organelles:
(A) Lysosomes ● (B) Glyoxisomes (C) Peroxisomes (D) Ribosomes

5. HIV belongs to group of viruses called:
(A) DNA virus (B) Pox virus (C) Retro virus ● (D) Bacteriophage

6. If the whole cell of bacteria is covered by flagella, the bacteria is called:
(A) Atrichous (B) Peritrichous ● (C) Amphitrichous (D) Lophotrichous

7. The vector of "African sleeping sickness" is:
(A) Mosquito (B) House fly (C) Yellow fly (D) Tsetse fly ●

8. The group of fungi in which sexual reproduction is not observed:
(A) Ascomycota (B) Basidiomycota (C) Deuteromycota ● (D) Zygomycota

9. The rhizome in Adiantum is protected by:
(A) Ramenta ● (B) Stipe (C) Fronds (D) Stomium

10. Excretory system in Arthropods is composed of:
(A) Flame cells (B) ● Malpighian tubules (C) Nephridia (D) Nephrons

11. Which of the following are not included in amniotes:
(A) Birds (B) Reptiles (C) Mammals (D) Amphibians ●

12. Dark reaction of photosynthesis occurs in the part of chloroplast named as:
(A) Stroma ● (B) Grana (C) Inter-grana (D) Inner membrane

13. The first action spectrum was obtained by T.W.Engelman in 1883 working on:
(A) Volvox (B) Nostoc (C) Spirogyra ● (D) Chlorella

14. In cockroach partly digested food is temporarily stored in:
(A) Colon (B) Crop ● (C) Gizzard (D) Rectum

15. Respiratory pigment present in muscles is called:
(A) Haemoglobin (B) Haemocyanin (C) Haemoerthrin (D) Myoglobin ●

16. The left systematic arch disappears in:
(A) Birds ● (B) Fish (C) Mammals (D) Reptiles

17. The narrowing and hardening of arteries is called as:
(A) Apoptosis (B) Necrosis (C) ● Atherosclerosis (D) Sclerosis

Roll No _____

HSSC-(P-I)-A/2024
(For All Sessions)

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Marks : 68

Biology (Subjective)

(GROUP-I)

Time: 2:40 Hours

SECTION-I

2. Write short answers of any eight parts from the following: (8x2=16)

i. What are terpenoids? Give two examples.
ii. Draw diagrammatic representation of an enzyme – substrate reaction (Lock and Key Model)
iii. How enzyme concentration affects the rate of enzyme action?
iv. What are inhibitors? Give their types.
v. Differentiate septate and non septate hyphae
vi. Compare obligate parasites with facultative parasites.
vii. Differentiate polyps and medusae.
viii. How infestation is different from disinfestations?
ix. What do you know about pinworms?
x. Name the scales of fish.
xi. The oxygen releases during photosynthesis comes from water, how you prove?
xii. What is the importance of phosphorylation in energy driving reactions?

3. Write short answers of any eight parts from the following: (8x2=16)

i. What is biological method? Name its steps in order.
ii. What is biological control? Give an example.
iii. How outer membrane of mitochondria differs from inner membrane?
iv. Why peroxisomes are called so?
v. Write two characteristics of protozoa.
vi. Give at least two examples of Dinoflagellates. Which pigments are found in them?
vii. In which group, the giants of protist kingdom are included? Name any giant protist.
viii. Why pelomyxa palustris may be the most primitive of all eukaryote-like forms?
ix. How breathing is different from cellular respiration?
x. What changes occur in animal during diving reflex?
xi. What is brain haemorrhage? Give its preventive measures.
xii. What is pericardium? Write its function.

4. Write short answers of any six parts from the following: (6x2=12)

i. How virion differs from prion?
ii. What are plasmids? Give their role
iii. Give two important features of Lycopsida.
iv. Differentiate over topping and plannation.
v. What are paraphyses? Give their function.
vi. Compare homospory with heterospory.
vii. Give the role of secretion in digestion.
viii. How pepsinogen is converted into pepsin?
ix. Differentiate herbivores and carnivores with example.

SECTION-II

Note **Attempt any three questions. Each question carries equal marks:** (8x3=24)

5. (a) How diseases can be controlled? Give preventive measures. (2+2=4)
(b) Explain respiration in cockroach. Draw its labeled diagram. (2+2=4)
6. (a) Describe three main types of RNA. (4)
(b) Discuss important features of ascomycota. (4)
7. (a) What are plastids? Discuss their types and functions. (1+1+2=4)
(b) How digestion in Duodenum takes place? Write role of liver and pancreas. (1+3=4)
8. (a) Discuss the structure of a virion (4)
(b) Define immunity. Discuss its types. (1+3=4)
9. (a) Describe habitat, occurrence and reproduction in Nostoc (1+1+2=4)
(b) Sketch various steps of Krebs' cycle (2+2=4)

☆☆☆☆ Roll No _____

HSSC-(P-I)-A/2024
(For All Sessions)

Paper Code	6	4	6	8

Biology (Objective)

(Group-II) **Time: 20 Minutes** **Marks : 17**

Note: Write Answers to the Questions on the objective answer sheet provided. Four possible answers A, B, C and D to each question are given. Which answer you consider correct, fill the corresponding circle A, B, C or D given in front of each question with Marker or Pen ink on the answer sheet provided.

1.1 Reserve food material in cyanobacteria is in the form of:
(A) Starch (B) ● Proteins (C) Sucrose (D) Glycogen

2. Malaria spreads by :
(A) ● Plasmodium (B) Female anopheles mosquito (C) Tsetse fly (D) Trypanosoma

3. Which of the following is unicellular but not included in protoctista?
(A) Kelps (B) ● Volvox (C) Yeast (D) Plasmodium

4. Most powerful Alkaloids are obtained from plants of family called:
(A) Solanaceae (B) ● Fabaceae (C) Rosaceae (D) Poaceae

5. Sphenodon is found in:
(A) Australia (B) Texas (C) ● New Zealand (D) Pakistan

6. Syrinx is an organ of voice present in:
(A) Apes (B) ● Parrots (C) Snakes (D) Frogs

7. Transfer of energy from antenna complex to reaction center of Photosystem occurs by phenomenon called:
(A) Oxidation (B) Reduction (C) ● Resonance (D) Hydrogenation

8. How many number of electrons would be needed at a time to reduce two moles of $NADP^+$?
(A) ● Two (B) One (C) Three (D) Four

9. Constipation is called by the excessive absorption of:
(A) CO_2 (B) ● Water (C) Food (D) Oxygen

10. If plasma proteins carry about 5% CO_2 / 100 ml of blood. How much CO_2 is carried by 500 ml of blood from tissue fluid to lungs?
(A) 5 ml (B) 20 ml (C) ● 25 ml (D) 100 ml

11. Which layer of arteries become thick due to Atheroma?
(A) ● Middle (B) Inner most (C) External (D) Any layer

12. If ψ_w (water potential) of a cell is – 400 KPa and pressure potential (ψ_p) is 800 KPa. What would be the solute potential (ψ_s) of cell at equilibrium:
(A) 1200 KPa (B) –400 KPa (C) ● –1200 KPa (D) 800 KPa

13. Which of the following element is a heavy metal?
(A) Zinc (B) Iron (C) Copper (D) ● Chromium

14. One strand of DNA contains ACGT nitrogenous bases and opposite strand has TGCA. How many number of hydrogen bonds would be present between these complementary nitrogenous bases?
(A) 08 (B) 12 (C) ● 10 (D) 14

15. Rate of reaction (catalysis) is inversely proportional to the:
(A) ● Activation energy (B) Enzyme concentration (C) Optimum temperature (D) Optimum pH

16. If ocular lens is of 10X and objective lense is of 40X, resolution of compound microscope would be _____of human naked eye.
(A) 100X (B) 400X (C) ● 500X (D) 250,000X

17. Which of the following is an organelle of symbiontic origin?
(A) Ribosomes (B) ● Mitochorndria (C) Centrioles (D) Lysosomes

Roll No _____

HSSC-(P-I)-A/2024

(For All Sessions)

Marks : 68

Time: 2:40 Hours

Biology (Subjective)

(GROUP-II)

SECTION-I

2. Write short answers of any eight parts from the following: (8x2=16)

i. What is the difference between fibrous proteins and globular proteins?
ii. What are inhibitors? Write their two types.
iii. Differentiate between apoenzyme & holoenzyme.
iv. The low and high temperature respectively affect an enzyme activity. How?
v. Enlist four types of asexual reproduction in fungi.
vi. What is aspergillosis? Name the fungus which causes it.
vii. Enlist four examples of sponges with their habitat.
viii. Define polymorphism. What is the generic name of 'Portuguese man of war'?
ix. Give names of any two sub-classes of mammalia.
x. What is Notochord? State its function.
xi. Differentiate between catabolism and anabolism.
xii. Which form of anaerobic respiration occurs in muscle cells of human during sprinting? Also represent it by equation.

3. Write short answers of any eight parts from the following: (8x2=16)

i. How does Phyletic Lineage extend back to the common origin of all early life?
ii. Write down attributes of population.
iii. How cell cytoplasm play role in cell physiology?
iv. What is chemical composition of bacterial (Prokaryote) cell wall?
v. How would you differentiate fungus-like protists and fungi?
vi. What are amoebas? Give their types
vii. What functions are performed by micronuclei and macronuclei in ciliates?
viii. Why Euglenoids are placed in Algae as well as in Protozoa?
ix. How does temperature affect the oxygen carrying capacity of Haemoglobin?
x. How does the skin of earthworm is kept moist for the exchange of respiratory gases?
xi. Differentiate Antigen and Antibody.
xii. What is the difference between single circuit and double circuit Heart?

4. Write short answers of any six parts from the following: (6x2=12)

i. What are the pocks? Give their cause.
ii. Write the difference between archaeo bacteria & eubacteria?
iii. Differentiate the Archegonia and Antheridia.
iv. What is circinate vernation? Give an example.
v. What do you know about annulus and stomium?
vi. How can adipose tissue is formed?
vii. Which plants are called supermatophytes?
viii. What are hunger pangs? When do they begin?
ix. Why humans develop intestinal gas from consuming milk products?

SECTION-II

Note **Attempt any three questions. Each question carries equal marks:** (8x3=24)

5. (a) What is an organ? Discuss organ and organ system level of organization. (2+2=4)
(b) How CO_2 is transported from tissues to lungs? (4)

6. (a) What is RNA? Describe its three types. (b) Give economic losses due to fungi. (1+3=4) & (4)

7. (a) What are plastids? Give three types & explain chloroplast in detail and draw its labeled diagram. (1/2+1/2+2+1=4)
(b) Explain role of pancreas and liver in digestion in human beings. (2+2=4)

8. (a) Write detailed note on AIDS. (4)
(b) Discuss symptoms and reasons of Leucaemia and thalassaemia. (2+2=4)

9. (a) Discuss nutrition in bacteria. (4)
(b) What is photophosphorylation? Discuss non-cyclic photophosphorylation in plants. (1+3=4)

1124 Warning:- Please write your Roll No. in the space provided and sign. **Roll No----------**

(Inter Part – I) **(Session 2020-22 to 2023-25)** **Sig. of Student ----------**

Biology (Objective) **Group 1** **Paper (I)**

Time Allowed:- 20 minutes **PAPER CODE 2461** Maximum Marks:- 17

Note:- 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 mark in that question. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q. 1

1) Milk and milk products are preserved by
(A) Pasteurization ● (B) Vaccination (C) Immunization (D) Cloning

2) In alanine R is
(A) NH_3 (B) CH_3 ● (C) COOH (D) OH

3) Competitive inhibitor of succinic acid is
(A) Malonic acid ● (B) Malate (C) Citrate (D) Fumaric acid

4) Funciton of Golgi apparatus is concerned with
(A) Division (B) Lysis (C) Storage (D) Secretions ●

5) Inflammation of Liver is called
(A) Enteritis (B) Tonsilitis (C) Hepatitis ● (D) Mumps

6) Bacteria grows rapidly in this phase
(A) Lag phase (B) Stationary phase (C) Log phase ● (D) Decline phase

7) Plasmodium reproduces asexually in
(A) Human ● (B) Binary fission (C) Conjugation (D) Mosquito

8) Major structural component of fungus cell wall is
(A) Lignin (B) Pectin (C) Cutin (D) Chitin ●

9) The structure that includes all others is
(A) Ovary (B) Ovule (C) Pistil ● (D) Style

10) The sponge that is called venus flower basket
(A) Sycon (B) Euplectella ● (C) Leucosolenia (D) Spongilla

11) Animals having compound eyes are
(A) Insects ● (B) Myriapoda (C) Crustacea (D) Hirudinea

12) The other name of Calvin cycle is
(A) C_6 Pathway (B) C_5 Pathway (C) C_4 Pathway (D) C_3 Pathway ●

13) The most abundant chlorophyll is
(A) Chlorophyll a ● (B) Chlorophyll b (C) Chlorophyll c (D) Chlorophyll d

14) Serum electrolyte imbalance occurs in
(A) Botulism (B) Dyspepsia ● (C) Bullimia Nervosa (D) Anorexia Nervosa

15) Respiratory pigment in humans is
(A) Bilirubin (B) Haemocyanin (C) Myoglobin (D) Haemoglobin ●

16) Excess fluid in the tissue of the body is
(A) Thrombus (B) Hemorrhage (C) Stroke (D) Oedema ●

17) Narrowing and hardening of arteries is called
(A) Atherosclerosis ● (B) Necrosis (C) Sclrosis (D) Apoptosis

1124 Warning:- Please, do not write anything on this question paper except your Roll No.

Biology (Subjective) (Session 2020-22 to 2023-25) Paper (I)

Time Allowed: 2.40 hours (Inter Part - I) Group 1 Maximum Marks: 68

Section ---------- I

2. Answer briefly any Eight parts from the followings:- **8 × 2 = 16**

(i) What is an ester? Express it with an equation.
(ii) How does substrate concentration affect the reaction rate of enzyme?
(iii) Differentiate binding and catalytic site of enzyme.
(iv) Write down any two characteristics of enzyme. (v) How can fungi grow on fruits even in refrigerator?
(vi) Differentiate obligate and facultative parasitic fungi. (vii) What is marsupium? Give its functions.
(viii) Write down the economic losses caused by phylum mollusca.
(ix) What are the symptoms of disease caused by hook worms?
(x) Why notochord is important in chordates?
(xi) What are the accessory pigments in plants? Give an example.
(xii) How glucose is prepared for production of energy?

3. Answer briefly any Eight parts from the followings:- **8 × 2 = 16**

(i) What are bio-pesticides? Give example. (ii) Define bioremediation and endangered species.
(iii) Differentiate chromoplast and leucoplast.
(iv) Give role and composition of cytoskeleton. (v) Write down the importance of algae.
(vi) Why the euglenoids are placed in algae as well as in protozoan.
(vii) Why Kindom Protista is regarded as a polyphyletic group of organisms?
(viii) Write two characteristics of apicomplexans. (ix) Mention two changes in chest cavity that cause expiration.
(x) Differentiate the bronchi and bronchioles. (xi) What are lymph nodes? Give their function.
(xii) How systolic pressure differs from diastolic pressure?

4. Answer briefly any Six parts from the followings:- **6 × 2 = 12**

(i) Define reverse transcriptase enzyme. Also give its function.
(ii) Differentiate Lag phase and log phase. (iii) Give the scientific name of tomato.
(iv) How microsporophylls are different from megasporophylls?
(v) Draw the labeled diagram of prothallus (Adiantum)
(vi) Write the names of four extinct earliest vascular plants.
(vii) What is gastrovascular cavity? Give an example.
(viii) Draw labelled diagram of large intestine of man.
(ix) What do you know about "Hunger Pangs".

Section ---------- II

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

5. **(a)** Describe role of biology in protection and conservation of environment.
(b) What is photorespiration? Give its consequences.

6. **(a)** Write an essay on Acylglycerols.
(b) Discuss economic gains due to fungi.

7. **(a)** What is the chemical composition of plasma membrane? Discuss the structure of plasma membrane.
(b) Discuss/write a note on two methods of nutrition in plants.

8. **(a)** Explain symptoms, causes, spread and preventions of the AIDS.
(b) "Transpiration is a necessary evil" justify the statement.

9. **(a)** Describe different physical and chemical methods to control bacteria.
(b) Give the diagrammatic representation of non-cyclic electron flow in photosynthesis.

1124 Warning:- Please write your Roll No. in the space provided and sign. **Roll No----------**

(Inter Part – I) **(Session 2020-22 to 2023-25)** **Sig. of Student ----------**

Biology (Objective) **(Group 2nd)** **Paper (I)**

Time Allowed:- 20 minutes **PAPER CODE 2468** Maximum Marks:- 17

Note:- 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 mark in that question. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q. 1

1) $CO_2 + H_2O \longrightarrow H_2CO_3 \longrightarrow HCO_3^- + H^+$ An above reaction occurs at:
(A) Lungs level ● (B) Alveolar Sac (C) Bronchiole level (D) Tissue level

2) If cell has + 600 kPa pressure potential (Ψ_P) and -800 kPa water potential (Ψ_W). Then what would be its osmotic potential (Ψ_S).
(A) -600 kPa (B) 800 kPa (C) -1400 kPa ● (D) -200 kPa

3) Which of the following cells function as multisensory hydraulic valves?
(A) Epidermal cells (B) Mesophyll cells (C) Cortex cells (D) Guard cells ●

4) In which of the following era, Mammals became dominent:
(A) Proterozoic era (B) Cenozoic era ● (C) Mesozoic era (D) Palaeozoic era

5) How many water molecules will be released to produce tripeptides?
(A) Two ● (B) One (C) Three (D) Four

6) Activated enzyme consisting of polypeptide chain and a co-factor is known as:
(A) Apoenzyme (B) Co-enzyme (C) Prosthetic group (D) Holoenzyme ●

7) A crista is chemically composed of:
(A) Nucleoprotein (B) Glycolipids (C) Ribonucleoprotein (D) Lipoprotein ●

8) Influenza virus is:
(A) RNA and Enveloped ● (B) DNA and Enveloped (C) RNA and non-Enveloped (D) DNA and non-Enveloped

9) Discoloration of teeth is caused by
(A) Pencillin (B) Ampicillin (C) Tetracycline ● (D) Streptomycin

10) All Algae form flagellated motile cells in their life cycle except:
(A) Brown Algae (B) Green Algae (C) Red Algae ● (D) Diatoms

11) Fungi have chitin, a chemical found in external skeleton of:
(A) Annelids (B) Molluscs (C) Nematodes (D) Arthropods ●

12) An egg containing female gametophyte in plants is called:
(A) Embryo Sac ● (B) Ovule (C) Seed (D) Embryo

13) Members of which phylum are asymmetrical?
(A) Cnidaria (B) Porifera ● (C) Nematoda (D) Annelida

14) Which of the following vertebrates are hermephrodite?
(A) Hag fishes ● (B) Lampreys (C) Trout (D) Shark

15) In Alcoholic fermentation, Acetaldehyde is reduced to ethanol by:
(A) $FADH_2$ (B) $NADPH+H^+$ (C) FAD^+ (D) $NADH+H^+$ ●

16) How many number of ATP molecules are required to generate one mole of Triose sugar?
(A) 9 ATP ● (B) 6 ATP (C) 12 ATP (D) 18 ATP

17) Deficiency of which element causes stunted growth of roots?
(A) Nitrogen (B) Phosphorous ● (C) Magnesium (D) Nitrogen and Phosphorous

1124 Warning:- Please, do not write anything on this question paper except your Roll No.

Biology (Subjective) (Session 2020-22 to 2023-25) (Group 2nd) Paper (I)

Time Allowed: 2.40 hours (Inter Part - I) Maximum Marks: 68

Section ---------- I

2. Answer briefly any Eight parts from the followings:- 8 × 2 = 16

(i) Differentiate between nucleotide and nucleoside.
(ii) What is induced fit model? Who proposed it?
(iii) Why pepsin is produced in its inactive form called pepsinogen?
(iv) Define enzyme-substrate complex. **(v)** Give names of four plant diseases caused by fungi.
(vi) Name key mutulistic symbiotic associations of fungi.
(vii) Differentiate the Ostia and Osculum. **(viii)** Give two fundamental characters of chordates.
(ix) Give the function of mantle and redula in mollusks.
(x) What are running birds? Quote two examples. **(xi)** What is Rubisco? Give its function?
(xii) What are accessory pigments? State their role.

3. Answer briefly any Eight parts from the followings:- 8 × 2 = 16

(i) What is Bioremediation? Give one example. **(ii)** What is meant by Integrated disease management?
(iii) Differentiate the phagocytosis and Pinocytosis. **(iv)** What are storage diseases? Give two examples.
(v) How Algae (Plant-Like Protists) differ from plants? **(vi)** Write down importance of Chlorella.
(vii) What are Choanoflagellates? Give their evolutionary link with sponges.
(viii) Basically the kingdom Protista is defined by exclusion. How?
(ix) Write four properties of Respiratory Surface. **(x)** How Respiratory Distress syndrome is caused?
(xi) Differentiate the Thrombous formation and embolus.
(xii) How vasodilation and vasoconstriction regulate blood flow?

4. Answer briefly any Six parts from the followings:- 6 × 2 = 12

(i) Fungi and animals are heterotrophs but place in separate Kingdoms. Why?
(ii) What do you know about bacilli bacteria? Give an example.
(iii) What is the importance of alternation of generation?
(iv) Why anthoceropsida is considered advanced than any other bryophytes?
(v) What is the difference between Monocots and Dicots? **(vi)** Compare homospory and heterospory?
(vii) What are deficiency symptoms of Magnesium and Phosphorus in plants?
(viii) What are obligate and facultative parasites? **(ix)** What is the cause of diarrhoea and constipation?

Section ---------- II

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

5. (a) What is cloning? Write down two different methods of cloning.
(b) Discuss the factors which affect the oxygen carrying capacity of haemoglobin.

6. (a) What is RNA? Give its three types with their role.
(b) Why the fungi were placed in a separate kingdom i.e. , Kingdom Fungi? Explain.

7. (a) Compare prokaryotic with Eukaryotic cell.
(b) Write the structure and functions of stomach by drawing its labeled sketch.

8. (a) Discuss Hepatitis in detail.
(b) Describe cohesion-tension theory of water movement in xylem, which supplies cohesion and what is the source of tension? How does these forces interact to move water through plants.

9. (a) Describe Nutrition in bacteria.
(b) What is chemiosmosis? Describe cyclic phosphorylation by sketching it.

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★★★ **Biology** **H.S.S.C (11th) 1st Annual 2024** Roll No._____(To be written by the candid

Paper : I Objective-(iii) | Paper Code | 6 | 4 | 6 | 5 | Marks:17 Time : 20 Minut

Note: - 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 question number in your answer book. Use marker or pen to fill the circles. Cutting or filling up two or more circles will result no mark.

SECTION-A

1	Questions	A	B	C	D
.	In most birds the number of air sacs are:	6	7	● 9	8
.	Which of the given animals is not omnivorous?	Crow	Man	Pig	● Dog
.	NADH in respiratory electron transport chain is oxidized by:	FADH	O_2	Coenzyme Q ●	Cytochrom
.	How many molecules of glyceraldehyde 3-phosphate are required to produce one molecule of glucose?	2 ●	1	3	6
.	Paired gill openings are developed in all chordates but non-functional in:	Rat ●	Fish	Frog	Amphiox
.	A respiratory pigment of blue colour called haemocyanin is present in animals of phylum:	Porifera	Coelenterata	Mollusca ●	Arthropo
.	In which phylum sexual phase is not observed?	Basidiomycota	Deuteromycota ●	Ascomycota	Zygomyc
.	The simplest of all bryophytes are:	Mosses	Hornworts	Whisk ferns	● Liverwor
.	African sleeping sickness is caused by:	Trypanosoma ●	Entamoeba	Plasmodium	Stento
10.	Which of the given are spiral shaped bacteria?	Cocci	Pseudomonas	Bacilli	● Vibrio
11.	Independent evolutionary unit among the given is:	Species ●	Population	Genus	Family
12.	Vacuole in plants is responsible for:	Photosynthesis	Cellular excretion	Turgor pressure ●	Starch sto
13.	Vitamins are essential raw materials for the synthesis of:	Coenzyme ●	Prosthetic group	Holoenzyme	Apoenzy
14.	Carbohydrates are organic molecules and contain three elements:	Carbon, H_2O and oxygen	Carbon, sulphur and hydrogen	Carbon, calcium and hydrogen	Carbon, hyd ● and oxyg
15.	Branch of Biology which deals with study of ancestral history of living organisms is called:	Palaeontology ●	Zoogeography	Evolution	Heredit
16.	The substance produced by basophils that inhibits blood clotting is:	Heparin ●	Histamine	Fibrin	Albumi
17.	Which vein has oxygenated blood?	Femoral vein	Pulmonary vein ●	Subclavian vein	Jugular v

Biology **H.S.S.C (11th) 1st Annual 2024** Roll No._____(To be written by the candidate)

Paper : I **Subjective** Marks : 68 Time : 2:40 Hours

SECTION-B

Note:- Section B is compulsory.

2. Write short answers to any EIGHT parts. (8 x 2 = 16)

i. How does fibrous protein differ from globular protein? (2 points required)
ii. Differentiate the enzyme and coenzyme.
iii. How does substrate concentration affect the rate of enzyme action?
iv. Define mycorrhizae. Give one example.
v. Write down medicinal importance of fungi. (2 points required)
vi. Give four characteristic features of phylum Annelida.
vii. Write two benefits and two harms caused by insects.
viii. Define irreversible inhibitors.
ix. What are tube feet?
x. How would you differentiate polyps and medusae?
xi. Give molecular formula of chlorophyll "a" and "b".
xii. What are action and absorption spectra?

3. Write short answers to any EIGHT parts. (8 x 2 = 16)

i. Differentiate the micro and macro molecules.
ii. Define bioremediation. Give one example.
iii. Define resolution of human eye.
iv. What are micro filaments? Give their function.
v. What is giant amoeba? Give its biological name.
vi. Differentiate the tests of Foraminifera and Actinopods.
vii. Define thallus. In which organisms is it found?
viii. What are diatoms? Give one example.
ix. Define photorespiration.
x. What are lenticels? Give their function.
xi. What is apoplast pathway of water transport in plants?
xii. Define thrombus and embolus.

4. Write short answers to any SIX parts. (6 x 2 = 12)

i. Define species.
ii. Differentiate the structure and function of flagella and pili.
iii. Write down the scientific name of sugar cane and brinjal.
iv. Why is sphenopsida called arthrophytes?
v. What is an embryo sac?
vi. Define circinate vernation.
vii. Define nutrition. Enlist its types.
viii. Food habit can be responsible for heartburn. How?
ix. Trace the route of amino acids and large fatty acids from digestive tract and blood stream.

SECTION-C

Note:- Attempt any THREE questions. Each question carries EIGHT (4+4=8) marks. (8 x 3 = 24)

5.(a) Define cloning. Discuss its mechanism and commercial importance. (1+2+1)
(b) What is pulmonary respiration? Discuss its phases in frog. (1+3)
6. (a) Write down a note on RNA and its types. (1+3)
(b) What are the economic gains due to fungi? (1+1+1+1)
7. (a) What are plastids? Describe different types of plastids. (1+3)
(b) Describe different mechanical and chemical processes occurring in oral cavity for digestion of food in man. (3+1)
8. (a) Give characteristics of viruses. (1x4)
(b) Explain the mechanism of transpiration pull in cohesion tension theory. (4)
9. (a) Write down a note on: i. Nucleoid ii. Plasmid (2+2)
(b) Describe three phases of Calvin cycle. (3+1)

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