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** SGD-1-24 **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

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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:- SGD-I-248 **× 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

(8 × 3 = 24)

Note: Attempt any three questions.

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.

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

Biology (Objective) (Group 2nd) SGD-2-24 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

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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:- SGD-2-24 **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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