

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. In which zone of Lake ecosystem, light does not penetrate? up to the bottom.  
(A) Littoral Zone (B) Limnetic Zone (C) Both Littoral and Limnetic (D) Profundal Zone
2. The natural heat energy trapped under ground is called  
(A) Geothermal energy (B) Fossil fuels (C) Nuclear energy (D) Tidal Power
3. An animal living in fresh water is more likely to excrete its waste nitrogen in the form of  
(A) Ammonia (B) Urea (C) Uric Acid (D) Creatinine
4. Locomotory structures found in star fish are  
(A) Setae (B) Tube feet (C) Foot (D) Wings
5. Presence of irregular stripes is the character of which type of Muscles?  
(A) Smooth (B) Skeletal (C) Cardiac (D) Both 'B' and 'C'
6. Which growth hormone can be sprayed on the tree crops to regulate fruit drop at the end of the season?  
(A) Auxins (B) Abscissic Acid (C) Ethene (D) Cytokinins
7. An individual has exophthalmic goiter and abnormally high basal metabolic rate, is more likely to be suffering from  
(A) Low thyroxine production (B) Excessive thyroxine (C) Cretinism (D) Myxedema
8. Which hormones are secreted by Mammalian Placenta?  
(A) Estrogen and Prolactin (B) Progesterone and Lactogen (C) Progesterone and oxytocin (D) Estrogen and oxytocin
9. In which phase of Animal development migration and rearrangement of cells occur to form three germ layers.  
(A) Gastrulation (B) Cleavage (C) Organogenesis (D) Growth
10. What is the role of enzyme DNA ligase during DNA replication?  
(A) Synthesis of primer (B) Recognition of the primer (C) Attachment of okazaki fragments (D) Proof reading
11. Enzyme Amino acyl tRNA synthetase has an important role during Translation.  
(A) Binding of a specific amino acid to a particular tRNA (B) Formation of initiation complex (C) Elongation of polypeptide chain (D) Termination of translation
12. Which phase of mitosis ensures equal distribution of chromosomes in the daughter cells?  
(A) Prophase (B) Metaphase (C) Anaphase (D) Telophase
13. A colour blind man is married to normal female, what is the risk of colour blind child in this family?  
(A) 50% (B) 25% (C) Zero% (D) 100%
14. During DNA finger printing, unique collection of various sized DNA fragments, can be obtained by  
(A) Treating genome with restriction enzymes (B) Gel electrophoresis (C) Treating with Probes (D) Denaturing DNA by heat
15. In Recombinant DNA technology, Bacterial cells can be made more permeable for recombinant plasmids after treating with  
(A) Sodium chloride (B) Calcium chloride (C) Potassium Chloride (D) Magnesium Chloride
16. One of the following is not related to Darwinism.  
(A) Inheritance of acquired characters (B) Over production (C) Struggle for survival (D) Survival of fittest
17. The relationship between insects and flowering plants, is an example of  
(A) Commensalism (B) Parasitism (C) Mutualism (D) Predation

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

1224(Inter Part-II)

(Session 2020-22 to 2022-24)

Biology (Subjective)

(Group 2<sup>nd</sup>)

Paper (II)

Time Allowed: 2.40 hours

Section ----- I

SGD-2-24 Maximum Marks: 68

2. Answer briefly any Eight parts from the followings:-  $8 \times 2 = 16$
- (i) How plants of cold regions repond to freezing temperatures? (ii) What is shivering thermogenesis?
  - (iii) Differentiate vasodilation from vasoconstriction. (iv) What are unguligrade animals?
  - (v) How locomotion occurs in snail? (vi) Define muscle fatigue.
  - (vii) Give importance of seed dormancy. (viii) What are viviparous mammals? Give one example.
  - (ix) What are acid rains? Give two disadvantages of acid rains. (x) What is algal bloom?
  - (xi) Write down the importance of grassland ecosystem.
  - (xii) Where Tundra ecosystem exists in Pakistan?
3. Answer briefly any Eight parts from the followings:-  $8 \times 2 = 16$
- (i) Differentiate between etiolation and chlorosis?
  - (ii) Write the distribution of pain and cold receptors on animal body?
  - (iii) Give the two commercial uses of Gibberellins? (iv) What is test cross? Also write its significance?
  - (v) Define pleiotropy? Give its two examples? (vi) Differentiate between gene linkage and linkage group?
  - (vii) Write two uses of PCR amplification and Ananlysis?
  - (viii) What are restriction endonucleases? Give their function?
  - (ix) Give the biotechnological uses of bacteria in mining? (x) Define climax community with example?
  - (xi) Differentiate between ectoparasite and endoparasite. (xii) Discuss the role of decomposers in ecosystem?
4. Answer briefly any Six parts from the followings:-  $6 \times 2 = 12$
- (i) Define growth and embryonic development.
  - (ii) Write the role of clear and yellow cytoplasm in development.
  - (iii) What are okazaki fragments? In which strand they are formed?
  - (iv) Name the single ring nitrogen bases, also draw it.
  - (v) Name transforming principle, also define term transformation.
  - (vi) Name Trisomic Sexual non-disjunction in your Text book. Give two symptoms.
  - (vii) Why and how chromosome number is halved by Meiosis. (viii) What are Analogous organs, Give one example?
  - (ix) Write two preventive measures to save endangered species.

Section ----- II

Note: Attempt any three questions.

$(8 \times 3 = 24)$

- 5.(a) Describe the structure of nephron with labeled diagram.
- (b) Write a detailed note on cancer.
- 6.(a) How does healing process proceed when a bone is broken in an accident?
- (b) Define succession. Explain all stages of Xerosere.
- 7.(a) Explain factors which affect gene frequency.
- (b) Describe the endocrine and neural functions of hypothalamus. (two each)
- 8.(a) What structure are associated with human female reproductive system. Also write their function.
- (b) State Law of Segregation prove it with one suitable example.
- 9.(a) How would you describe the process of growth correlations in plants?
- (b) What is the methodology used for expression of Recombinant DNA?

1240 -- 1224 -- 7500