

**INTERNATIONAL INDIAN SCHOOL – DAMMAM**  
**GULF BOARD EXAMINATION – 2017-2018**  
**CLASS: XI - BIOTECHNOLOGY**

**Time Allowed: 3 Hrs.**

**Total Marks: 70**

**General Instructions:**

- (1) All questions are compulsory.
- (2) There is no overall choice. However internal choice has been provided in one question of three marks and two questions of five marks. You have to attempt only one of the choices in such questions. Question paper contains four sections – A, B, C and D
- (3) Question numbers 1 to 6 are very short answer questions, carrying 1 mark each.
- (4) Question numbers 7 to 14 are short answer questions, carrying 2 marks each.
- (5) Question numbers 15 to 25 are also short answer questions, but carrying 3 marks each.
- (6) Question numbers 26 to 28 are long answer questions, carrying 5 marks each.

**SET A**

**Section – A (1 Mark)**

1. What is meant by co- dominance?
2. List two applications of biotechnology in textile industry.
3. Define p I value.
4. Explain the term semi conservative replication in DNA.
5. Why proteins are named polypeptides.
6. Draw the general structure of amino acids.

**Section – B (2 Marks)**

7. What is meant by protein engineering?
8. Write four criteria for which gene frequencies to remain constant generation after generation.
9. Differentiate the term homozygous and heterozygous.
10. Schematically represent r-DNA technology.
11. Differentiate between homo polysaccharide and hetero polysaccharide.
12. Explain the action of T- cells.
13. Explain the term point mutation.
14. What is the role of incubator in cell culturing

**Section – C (3 Marks)**

15. What is meant by photophosphorylation? Schematically represent non cyclic photophosphorylation.
16. Draw cloverleaf structure of t- RNA. Explain charging of t-RNA.
17. Explain the role of chromosome in inheritance with the help of any one example.
18. Explain the method of electrophoresis during in downstream processing.
19. What is the fate of pyruvate in anaerobes during metabolism of glucose?
20. Why plasma membranes are amphipathic in nature. List two functions of plasma membrane.
21. Explain the structure of antibody with the help of a diagram.
22. Diagrammatically show nucleotide excision repair mechanism in DNA
23. Define the term linkage. Explain how genes positioned in the same chromosomes, are inherited.
24. Define diazotrophs. Explain the role of biotech in improving nitrogen fixation in crop plants.

**OR**

Knowing 3D structure of enzymes are important in biotechnology. Explain with the action of antibiotics.

25. Differentiate between DNA and RNA. (any 3 points ). Explain one chemical test to detect the presence of deoxy sugar.

**Section – D (5 Marks)**

26. With the help of a dihybrid cross explain the Mendel's law of independent assortment.
27. What are the various machineries required during DNA replication. Why replication is called semi discontinuous.

**OR**

Define operon. Explain how genes are regulated in prokaryotes.

28. Explain with the help of diagram the Watson and crick model of DNA.

**OR**

Briefly explain the steps of transcription with the help of a diagram.

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