

INTERNATIONAL INDIAN SCHOOL – DAMMAM
SECOND TERM EXAMINATION – 2017
CLASS: XII - 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 one question 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. BCAA enriched foods are recommended for athletes , why?
2. Explain a method for the overproduction of secondary metabolite in plants with low cost?
3. Why 2-D electrophoresis better than 1 –D electrophoresis?
4. How to raise a plant that express recessive traits?
5. Recombinant vaccine is preferred over conventional vaccine . why?
6. Enumerate any two secondary metabolites and its use from plant cell culturing.

Section – B (2 Marks)

7. Explain any one therapeutic application of monoclonal antibody?
8. List out any 4 features of embryonic stem cells that aids its use in medical therapies.
9. What is the principle behind isoelectric focusing?
10. Relationship between the number of genes and protein is not linear. Justify?
11. Why regulation of pH is essential for animal cell culturing?
12. What is the mode of action of tissue plasminogen activator?
13. Write any two biosafety issues in plant cell technology.

14. In a biotech research lab producing vitamin B12 from *Propionibacterium*, at a level of 10 mg per cell. If they have to purify of 1kg product and the cells can grow at a rate of 1000/L, then how much volume of media needs to be prepared?

Section – C (3 Marks)

15. Explain how to predict drug response using SNP map.
16. Write a short note on BAC contig sequencing strategy.
17. Differentiate between expression proteomic and functional proteomic.
18. Explain in vitro germplasm conservation in plants.
19. Explain how protein designing is successfully used in detergent industry?
20. Explain 1. Why detoxify xenobiotics 2. Curd is a probiotic
21. Write a short note on aqueous two phase separation techniques.
22. Explain how CML disease diagnosed using FISH?

OR

- Briefly explain how herbicide tolerance and pest resistance achieved in crop plants.
23. Explain any three methods of gene delivery in animal cell culture?
24. Explain peptide mapping.
25. Explain how the plant breeders successfully utilized male sterile plants for hybrid production in mustard?

Section – D (5 Marks)

26. Define microarray technology? Explain how microarray technique is applicable in comparative hybridization assay?
27. Explain the mechanism of action of chymotrypsin?

OR

With the help of a diagram explain mass spectrometry. What is the principle use of MALDI -TOF in protein studies.

28. With the help of a diagram explain the method of hybridoma technology
