INTERNATIONAL INDIAN SCHOOL – DAMMAM
SECOND TERM EXAMINATION – 2015-2016
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 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 to14 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.

Section – A (1 Mark)

1. Explain the term "contact inhibition".
2. Write a ten letter sequence each typical of DNA and proteins.
3. In DNA sequence readout, what does the symbols H and B meant for?
4. Give one reason why computational method of gene prediction and counting are inaccurate?
5. What is the main buffer system used in animal cell culture?
6. What is the relationship between specific activity and purity of a protein?

Section – B (2 Marks)

7. Write a short note on antifoam agents in microbial cultures.
8. Differentiate between finite cell and continuous cell lines.
9. Explain the molecular basis of sickle cell anaemia.
10. Relationship between the number of genes and protein is not linear. Give two reason.
11. Differentiate between roller bottles and spinner flasks for scale up of animal cell culture.
12. Write any two biosafety issues in microbial technology
13. Expand NCBI, NBRF, EMBL, EST
14. List any 2 reasons for completely sequencing a genome.

Section – C (3 Marks)

15. Write three functions of database retrieval tools.
16. How does consumption of BCAA help athletes in enhancing their performance?
17. Write a short note on aqueous two phase separation techniques.
18. Give reason why yeast cells have been extensively used for expression of eukaryotic genes.
19. Draw a flowchart for the isolation of extracellular microbial product with an example.
20. Explain briefly how charge relay system operates in chymotrypsin.
21. Explain the technique of FISH with an application.

OR

Briefly explain ES cell culture and its application.

22. In a pilot scale experiment, it was found that Pencillium cells can produce pencillin at a concenteration of 100 mg/ 1 L of culture medium. If a pharmaceutical company has to produce 200gm of this antibiotic, calculate the time required for the operation of a fermenter size of 50 L that operates only once per week.
23. Explain any two microbial strain preservation methods.
24. What is BLAST? Explain the principles involved in it.
25. Why is aeration important for animal cell culturing? How can this be improved for better adherent culture growth?

Section – D (5 Marks)

26. Briefly indicate the steps involved in peptide mapping with the help of a diagram.

27. Describe the characteristic features of different types of microbial cell cultures

OR

With the help of a diagram explain mass spectrometry.

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

OR

Define contig? Explain random shotgun sequencing technique.

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