



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – ZOOLOGY

FOURTH SEMESTER – APRIL 2017

ZO 4812- BIOTECHNOLOGY

Date: 20-04-2017
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

ALL the questions. All questions carry equal marks

I CHOOSE THE CORRECT ANSWER [5 × 1 = 5]

1. One of the following is a secondary metabolite

- (a) Ethanol (b) Lactic acid (c) Amino acid (d) Antibiotics

2. Biomembrane separation involves

- (a) Nanofiltration (b) Ultrafiltration (c) Microfiltration (d) All the above

3. Science of fermentation is also known as

- (a) Enzymology (b) Mycology (c) Zymology (d) Nanobiology

4. One of the following is being used in food, textile and paper industries

- (a) Cellulase (b) Alpha amylase (c) Peroxidase (d) Avidin

5. Kappa particle inheritance is commonly seen in

- (a) *Mirabilis* (b) *Limnaea* (c) *Lathyrus* (d) None of the above

II FILL IN THE BLANKS [5 × 1 = 5]

6. Petroleum may be synthesized from _____.
7. PKC is a multifunctional _____ which phosphorylate serine and treonine.
8. _____ paper is being used in northern blotting.
9. Genes having more than one effect (multiple effects) are called _____.
10. _____ is the first commercial transgenic protein produced.

III MATCH THE FOLLOWING [5 × 1 = 5]

- | | | |
|------------------------|---|---------------------|
| 11. Primary metabolite | - | Penetrance |
| 12. Molecular mapping | - | inhibitor of ATPase |
| 13. Digoxin | - | Lactic acid |
| 14. Polydactyly | - | GLUT2 |
| 15. Beta cell | - | Kitty Cooper's |

V DEFINE/ DISTINGUISH [5 × 1 = 5]

16. Compare complementary and supplementary interactions
17. What are biolistics?
18. Name any two events of post translational modification
19. Distinguish homology modelling and molecular modelling
20. Expand: (a) VNTR (b) CAP

SECTION- B

BRIEFLY ANSWER ANY FOUR OF THE FOLLOWING IN 300 WORDS (4 × 10 = 40)

21. What are the means of deciphering bioinformatics for biotechnology? Describe any five
22. How do you produce transgenic animals? State their application
23. Examine the principle, protocol and application of DNA finger printing
24. Reveal the molecular mechanism behind transposition of transposons along with its significance and applications
25. State the applications of animal cell culture
26. Examine the characterization and fabrication of nanoparticles

SECTION- C

ANSWER ANY TWO OF THE FOLLOWING IN 700 WORDS (2 × 20 = 40)

27. Illustrate and elucidate any two natural vector and any two artificial vectors
28. Elucidate the mechanism and methods involved in site directed mutagenesis along with its applications
29. (a) Explain any four methods of enzyme immobilization with their significance (10)
(b) Decipher the metabolism behind cryopreservation (10)
30. Examine the following:
 - (a) Growth kinetics of microbes as per Monad (8)
 - (b) Mechanical separation of Biomolecules (7)
 - (c) A microbial culture started with 150 numbers and it grows at a proportional rate. After 3 hours, 450 microbes were observed. What will be the population after 6 hours? When will the population reach 3000 number? (5)

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