

Avinashilingam Institute for Home Science and Higher Education for Women
Coimbatore – 641043

Master's Degree Examination – November 2017
SEMESTER – III

CLASS: II PG
MAJOR: Zoology

Time: 3 hours
Max. Marks: 60

12MZOC17 Biotechnology

PART – A

Choose the correct answer

10 x ½ = 5

1. Restriction enzymes are synthesized by
 - a. Bacteria only
 - b. Yeast and bacteria only.
 - c. Eukaryotic cell only.
 - d. All kinds of cells
2. Alkaline phosphatase is used in rDNA to
 - a. Add terminal phosphate
 - b. Removes terminal phosphate
 - c. Joins break
 - d. Create blunt ends
3. One of the phages used for cloning is called
 - a. Cloning vehicles
 - b. Plasmids
 - c. Bacteriophages
 - d. Lambda phages
4. The most commonly used vector for introducing foreign genes into animal cells is
 - a. Viroids
 - b. SV 40
 - c. Viral DNA
 - d. Ca MV
5. PCR is used
 - a. To diagnose genetic diseases
 - b. To solve crimes
 - c. To study gene function
 - d. All of these
6. Annealing of DNA occurs at
 - a. Any temperature below T_m
 - b. Any temperature above T_m
 - c. Room temperature
 - d. 0°C
7. Hematopoietic stem cells are capable of producing
 - a. Red blood cells
 - b. Granular leukocytes
 - c. Agranular leukocytes
 - d. Platelets
8. Chloramphenicol is added to culture medium to increase copy no of plasmids as
 - a. Increases genomic DNA replication
 - b. Inhibits genomic DNA replication
 - c. Increases transcription of genomic DNA
 - d. Increases transcription of plasmid DNA
9. Techniques which are used for assaying monoclonal antibodies are
 - a. Flow cytometry
 - b. ELISA
 - c. RIA
 - d. All of the above
10. Production of transgenic animals require transfections of
 - a. Eggs or embryos
 - b. Stem cells
 - c. Red blood cells
 - d. All of the above

PART – B
Answer all questions
Answer should not exceed 200 words or one page

5 x 4 = 20

11. a. Write a short note on DNA polymerase
Or
11. b. Write a short not on functions of restriction endonucleases
12. a. Explain the features of plasmids and cosmids. Write their advantages and disadvantages
Or
12. b. How is electroporation useful for gene transfer?
13. a. Explain the steps of Southern blotting in detail with labelled diagrams
Or
13. b. What are the different stages in performing RAPD?
14. a. What are primary cell culture and give its significance in clinical research
Or
14. b. Write an essay on medicinal applications of animal cell culture
15. a. Give an account on IPR
OR
15. b. Comment on monoclonal antibodies

PART – C
Answer all questions
Answer should not exceed 600 words or one page

5 x 7 = 35

16. a. Describe the important features and properties of restriction endonucleases?
Or
16. b. Discuss ligase chain reaction
17. a. Give a brief account on preparation of plasmid DNA
Or
17. b. Give a brief account on various stages in transformation
18. a. Explain PCR. Add a note on its significance
Or
18. b. Briefly explain DNA sequencing
19. a. Write about the physical properties and chemical composition of culture media
Or
19. b. Describe the advantages and disadvantages of using serum free media for cell culture studies
20. a. Explain the production and applications of transgenic animals.
Or
20. b. Write a brief note on GATT and TRIPs.
