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SUBJECT CODE NO: - F-6220
FACULTY OF SCIENCE AND TECHNOLOGY
M.Sc. (Sem-III) (Zoology)
Examination December/January-2022-23
Molecular Biology- I- 523 Elective

[Time: 3:00 Hours]**[Max. Marks:80]**

Please check whether you have got the right question paper.

N. B

- i) Part 'A' is compulsory
- ii) Attempt any five questions from Part-B
- iii) Draw neat labelled diagrams wherever necessary

Part 'A'

Q1 Attempt the multiple choice questions

1. In which phase of the cell cycle does DNA replication occur. 20
 - a) G₀
 - b) G₁
 - c) S
 - d) G₂
2. All of the following are used in PCR Except:
 - a) Taq polymerase
 - b) Restriction enzymes
 - c) Oligonucleotide primers
 - d) Deoxynucleoside
3. The oncogene Ras binds:
 - a) ATP
 - b) GTP
 - c) Glucose
 - d) Haemoglobin
4. Northern blotting is used for separation of:-
 - a) DNA
 - b) mRNA
 - c) Protein
 - d) Protein DNA interaction
5. Which out of the following is an example of post translation modification
 - a) splicing
 - b) class switching
 - c) Subunit aggregation
 - d) Base modification
6. The enzyme responsible for continuing DNA replication in prokaryotes, once it initiated is_____
 - a) DNA polymerase- I
 - b) DNA polymerase-II
 - c) Polymerase beta
 - d) Polymerase delta

7. The bacterial system has_____
- a) 1 b) 2 c) 3 d) 4
8. A critical enzyme used directly in the synthesis of dTMP (thymidine) is____
- a) Carbamoyl phosphate b) dihydrorotase
c) Thymidylate synthase d) None
9. Which component of a eukaryotic cell can serve as the location for regulation of gene
- a) Nucleus b) Cytoplasm c) Mitochondria d) nucleus & cyctoplasm
10. The enzyme required for transcription is-
- a) Restriction enzyme b) DNA polymerase
c) RNA polymerase d) RNAase

Part-‘B’

- Q2 Describe secondary and tertiary structure of DNA 12
- Q3 What is RNA. Describe types of RNA & their functions 12
- Q4 Give an account of extra-chromosomal and organelle DNA replication 12
- Q5 Describe UV damage and light repair pathway 12
- Q6 Write an essay on transcription in eukaryotes 12
- Q7 Describe in detail of gene expression control by DNA 12
- Q8 Describe polymerase chain reaction techniques 12