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**SUBJECT CODE NO:-6143**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**M.Sc. (Sem-III) Zoology**  
**Examination March/April-2022 (To be held in June/July-2022)**  
**Fundamental Processes - 503**

[Time : 3 : 45 Hours]

[Max. Marks : 80]

Please check whether you have got the right question paper.

N.B

- 1) Part A is compulsory
- 2) Attempt any five questions from part B
- 3) Draw a neat labeled diagrams whenever necessary

Part – A

Q.1 Attempt the following multiple choice questions 20

- 1) In DNA Replication, the Okazaki- fragments on the lagging strand joined together by --  
 ---  
 a) DNA ligase    b) DNA Polymerase    c) Primase    d) Helicase
- 2) In vitrosynthesis of RNA & DNA was carried out first by ----  
 a) Kornberg & Nirenberg    b) Ochoa & Nirenberg  
 c) Nirenberg & Khorana    d) Ochoa & Khorana
- 3) The number of cytosine base in an mRNA molecule -----  
 a) is equal to the number of Uracil bases  
 b) Cannot be predicted without knowing what the mRNA codes for  
 c) Is equal to the number of odenine bases  
 d) Is equal to the number of thymine bases
- 4) The most stable RNA in the cells is -----  
 a) m-RNA    b) t- RNA    c) s- RNA    d) r- RNA
- 5) Who discovered reverse transcription -----  
 a) Temin & Baltimore    b) Beadle & Tatum  
 c) Watson & crick    d) Hargobind Khorana
- 6) Synthesis of DNA over RNA template occurs in -----  
 a) Reovirus    b) Rous sarcoma virus    c) T<sub>2</sub> bacteriophage    d) TMV
- 7) Initiation codon in eukaryotes is -----  
 a) UAA    b) AUG    c) GAU    d) AGU
- 8) The codons causing chain termination one -----  
 a) TAG , TAA , TGA  
 b) GAT, AAT, AGT  
 c) UAG, UGA, GAA

- d) AGT, UGA, TAG
- 9) The unit of length 'Angstrom' equals to -----  
 a)  $10^{-6}m$     b)  $10^{-8}m$     c)  $10^{-10}m$     d)  $10^{-15}m$
- 10) The DNA intercalating antibiotic is -----  
 a) mitomycin C    b) Actinomycine    c) Puromycin    d) Polymaxin B

## Part- B

Attempt any five questions following

- |     |   |    |
|-----|---|----|
| Q.2 | Give an account of Fidelity of replication                            | 12 |
| Q.3 | Write the concept of post transcriptional control of gene regulation. | 12 |
| Q.4 | Discuss in detail initiation factors & their regulation.              | 12 |
| Q.5 | Comments on elongation & termination.                                 | 12 |
| Q.6 | Describe the eukaryotic gene expression.                              | 12 |
| Q.7 | Discuss in brief transcription factor & chain terminator              | 12 |
| Q.8 | Write a note on t-RNA identity.                                       | 12 |