

Total No. of Printed Pages: 2

SUBJECT CODE NO: - S-6143
FACULTY OF SCIENCE AND TECHNOLOGY
M.Sc. (Sem-III) (Zoology (Old))
Examination May / June - 2023
Fundamental Processes - 503

[Time:3:00 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 question from part 'B'
- 3) Draw neat & well Labelled diagrams wherever necessary.

PART – A

20

Q.1 Attempt the following multiple choice questions.

1. Which of the following DNA repair mechanism is known as the 'cut and patch mechanism'?
 - a) Photo reactivation
 - b) Nucleotide excision repair
 - c) Base excision repair
 - d) Mismatch repair
2. Which of the following acts as the inducer of lac operon is?
 - a) Lactose
 - b) Allolactose
 - c) Galactose
 - d) Glucose
3. DNA helicase enzyme involved in base excision repair mechanism is_____
 - a) DNA helicase I
 - b) DNA helicase II
 - c) DNA helicase III
 - d) DNA helicase IV
4. In prokaryotes, which subunit of the RNA polymerase is released after the initiation of the translation process?
 - a) α .
 - b) β
 - c) β'
 - d) σ
5. Which of the following molecule has the property of self-replication?
 - a) Prions
 - b) DNA and RNA
 - c) DNA only
 - d) RNA and Prions
6. Which of the following base-pairing rule is correct?
 - a) Adenine with guanine and thymine with cytosine
 - b) DNA base pairing is non-specific
 - c) Adenine with cytosine and guanine with thymine
 - d) Adenine with thymine and guanine with cytosine
7. DNA synthesis can be measured by estimating the incorporation of radiolabelled
 - a) Thymine
 - b) Guanine
 - c) Cytosine
 - d) Adenine
8. Which of the following statement is NOT correct regarding the genetic code?
 - a) One Amino acid can have more than one codon
 - b) In eukaryotes the start codon is AUG
 - c) The genetic code is not strictly universal
 - d) Third base of anticodon is not necessary for specificity

9. Short strands of primer are used in DNA replication.
- a) DNA b) RNA c) Histone d) Protein
10. During DNA replication the synthesis of the lagging strand of DNA results in fragments known as
- a) Okazaki fragments b) Satellite segments
c) Kornberg segment d) Double-helix segment

PART B

(Attempt any five)

- Q.2** Discuss in detail Replication Origin and Replication fork. **12**
- Q.3** Explain in detail Transcription regulation in Prokaryotes. **12**
- Q.4** Give an account of Aminoacylation of tRNA. **12**
- Q.5** Comments on translational proof-reading. **12**
- Q.6** Describe the Eukaryotic gene expression. **12**
- Q.7** Write a note on post transcriptional events, (Splicing and Capping) **12**
- Q.8** Explain in detail formation of initiation complex in Eukaryotes. **12**