

Total No. of Questions : 4]

SEAT No. :

P767

[Total No. of Pages : 2

[5315] - 356

T.Y.B.Sc.

MICROBIOLOGY

MB-332 : Genetics & Molecular Biology - I

(2013 Pattern) (Paper - II) (Semester - III)

Time : 2 Hours]

[Max. Marks : 40

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *All questions carry equal marks.*
- 3) *Draw neat labelled diagram wherever necessary.*
- 4) *Figures to the right indicate full marks.*

Q1) Answer the following

A) Match the following

[5]

- | | |
|-----------------|-------------------------|
| a) Ori C gene | i) Removal of primers |
| b) -10 sequence | ii) N-formyl Methionine |
| c) DNA pol I | iii) r-RNA synthesis |
| d) All G codon | iv) Replicon |
| e) RNA Pol I | v) Pribnow box |

B) Attempt the following

[5]

- a) DNA- B is a _____
- | | |
|---------------|----------------|
| i) Primase | ii) Polymerase |
| iii) Helicase | iv) Ligase |
- b) The protein required for Bacterial transcription initiation is
- | | |
|-------------|-------------|
| i) α | ii) β |
| iii) Rho | iv) Sigma |
- c) Eukaryotic mRNA's have
- | | |
|---------------------|----------------------|
| i) 5' tail & 3' Cap | ii) 5' Cap & 3' tail |
| iii) 5' Cap & 3' OH | iv) 5' p & 3' tail |

P.T.O.

- d) Define - Map Unit.
- e) State True or False - Agarose gel electrophoresis is usually employed for the separation, identification and characterisation of proteins.

Q2) Diagrammatically represent any two of the following: **[10]**

- a) Replication fork.
- b) Western blot technique.
- c) Cloverleaf structure of t-RNA.

Q3) Write short notes on any two of the following: **[10]**

- a) Potential uses of Recombinant DNA technology.
- b) Northern blot technique.
- c) Role of Ribosomes in translation.

Q4) Attempt any one of the following: **[10]**

- a) What is Tetrad analysis? How is it done? Explain in detail mapping of Chromosome by Tetrad analysis.

OR

- b) What is Post transcriptional modification? Explain in detail the mechanism of post transcriptional modifications in case of Eukaryotic mRNA?

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