

2019

B.Sc.

3rd Semester Examination

MICROBIOLOGY (Honours)

Paper - C 7-T

(MOLECULAR BIOLOGY)

Full Marks : 40

Time : 2 Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

1. Answer any five questions : 2×5=10
- (a) Name two organism in which RNA is genetic material. 2
 - (b) How t-RNA get stabilized after synthesis ? 2
 - (c) Write the role of promoter in transcription. 2
 - (d) What is si-RNA ? 2
 - (e) What is codon and anticodon ? 2

[Turn Over]

(f) Write the function of E, P, A sites in translation. 2

(g) Write the role of allolactose in lac operon. 2

(h) Why DNA methylase is important ? 2

2. Answer any *four* questions : $5 \times 4 = 20$

(a) What are the extrachromosomal DNA in prokaryotes ? State their importance. $3+2=5$

(b) Write the salient features of double helical model of DNA proposed by Watson and Crick. 5

(c) Write the post-transcriptional modification of RNA. What are the subunits of RNA polymerase in prokaryotes ? $3+2=5$

(d) State the mechanism of elongation process of translation in prokaryotic system. 5

(e) Write the catabolite repression of lac-operon with diagram. 5

(f) Write the organization of DNA of eukaryotes in nucleosome. What are the factors which stabilizes nucleosome structure ? $4+1$

3. Answer any *one* question : 10×1=10

(a) Write short note on (any four) : 2½×4

(i) Base excision repair.

(ii) Protein synthesis inhibitor.

(iii) Okazaki fragment

(iv) Replication fork

(v) Histone acetylation and its significance.

(vi) Attenuation control of trp operon.

(b) How transcription process get terminated ? What is charging of t-RNA ? Write the process of it. How RNA interference blocks gene expression?

4+(1+3)+2
