

Microbiology [Honours]

[CBCS]

B.Sc. Third Semester End Examination-2023

(Regular & Supplementary Paper)

PAPER-C7T

[Molecular Biology]

Full Marks: 40

Time: 02 Hrs

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

Group A

Answer any FIVE questions of the following: 5x2= 10

1. Write down the salient features of DNA polymerase III.
2. Define COT curve.
3. What do you mean by charging of \pm RNA in DNA translation.
4. What are the differentiate between Prokaryotic mRNA and Eukaryotic mRNA
5. What are start and stop codons? 1+1
6. What is 'chargaff's rule'
7. Whast do you mean by constitutive gene and House keeping gene? 1+1
8. State the significance of Si-RNA.

(2)

Group B

Answer any FOUR questions of the following: 4x5 = 20

1. i) Write down the elongation process of translation:-
 ii) State the role of puromycin as of translation process. 3+2
2. i) Write down the difference between A DNA, B DNA, Z DNA.
 ii) What is the difference between mitochondrial DNA and chloroplast DNA. 3+2
3. i) Describe the semiconservative replication process.
 ii) Write a short note on telomerase activity. 2½ +2½
4. Explain Rho-dependent and Rho independent termination process 2½ +2½
5. i) State the role of C-amp to counteract catabolite repression
 ii) Write down the attenuation model of txp operon 2+3
6. i) What is hyperchromic and hyperchromic effect?
 ii) Explain why the two strand of DNA are antiparallel in nature.
 iii) Define DNA denaturation and DNA renaturation. 2+2+1

Group C

Answer any ONE question of the following: 1x10 = 10

1. i) Write down note on “mismatch repair process”. 3
 ii) What is DNA methylation. 2
 iii) Write the function of lae-repressor and protein in lae – operon. 2½ +2½

(3)

2. Briefly describe about the

- i) How two stands of DNA is replicated simultaneously by same DNA polymerse. 5
- ii) Write down a note on spliceosome 3
- iii) After replication how the RNA primers are removed? 2
