APRIL 2017 **1708211/PBYM33A**

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 1 = 10 marks)

Answer any TEN questions.

Each question carries 1 mark.

1. Give the role of RuV C in recombination.

2. Give the function of transposase.

3. What was the contribution of Nirenberg?

4. What are Tims and Toms?

5. Is the 30 nm fibre is essential and mention the two proposed types of its structure?

6. Define the law of dominance. In general, how many alleles of one trait is present in genotype of an organism?

7. What are telomeres? What relevance they do have in a cell?

8. What are histones? Mention their significance.

9. What is positive control of gene expression?

10. When and where does the signal peptidase exert its action and write the event that follow.

11. Write a note on eukaryotic ribosomes.

12. What is mutation?

SECTION B — (5 × 5 = 25 marks)

Answer any FIVE questions.

Each question carries 5 marks.

13. Compare the promoters of a prokaryotic and an eukaryotic cell.

14. Give a brief description on alternative splicing.

15. How the regulation *Trp* operon could be achieved?

16. Brief the process of conjugation and transduction.

17. How do you perform restriction mapping?

18. Brief the Wobble hypothesis.

19. Give the steps involved in lysosomal targeting of protein.

SECTION C — (4 × 10 = 40 marks)

Answer any FOUR questions.

Each question carries 10 marks.

20. Give a detailed account on prokaryotic translation along with the details of inhibitors.

21. Give a detailed account on the mechanism by which high accuracy is achieved in replication of leading and lagging strands.

22. Describe the process involved in conversion of hnRNA to mature mRNA.

23. Give a detailed account on causes and mechanisms of mutations.

24. Elaborate the Holliday model of recombination with mechanism of formation of triplex and experimental proof for resolving of the recombinants.

25. (a) What are Multiple alleles? Exemplify. (5)

(b) What is recombination mapping? How is that useful in genetic mapping? What is centimorgan? (5)