SN – 347

V Semester B.Sc. Examination, Nov./Dec. 2017
(CBCS) (Freshers + Repeaters) (2016-17 and Onwards)
BIOCHEMISTRY (Paper – VI)

Time : 3 Hours Max. Marks : 70

Instructions : *i) The question paper has **two** Parts, Part – **A** and Part – **B**.*
*ii) Answer **any eight** questions from Part – **A** and **nine** questions from Part – **B**.*

PART – A

Answer the following questions. **Each** question carries **two** marks : **(8×2=16)**

1. Explain the induced fit model for enzyme substrate interaction.
2. Which are the codons which specify termination of translation ?
3. Give a reaction catalysed by lyases.
4. What is the effect of
   a) Tetracycline
   b) Cycloheximide on translation.
5. What is the role of
   i) FAD
   ii) PLP as coenzymes ?
6. What is an Operon ?
7. Write the tautomeric forms of Adenine.
8. How is DNA damage repaired by photoreactivation ?
9. Why is DNA more stable to alkali than RNA ?

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10. Draw the clover leaf structure of t-RNA and label the parts.

11. 'RNA is versatile' why ?

12. Write Michaelis-Menten equation and mention the terms.

PART – B

Answer the following questions. **Each** question carries **six** marks : **(9×6=54)**

13. a) Explain uncompetitive inhibition using lineweaver burk plot.
    b) What is the effect of pH on enzyme activity ? **(4+2)**

14. a) Name any four enzyme assay methods. Explain any one method.
    b) What are monomeric and oligomeric enzymes ? Give one example for each. **(4+2)**

15. a) Using energy profile diagram explain how enzymes increase the rate of reactions.
    b) What is group specificity of enzymes ? Give an example. **(4+2)**

16. a) Explain Maxim-Gilbert method of DNA sequencing.
    b) DNA with higher GC content has high Tm. Why ? **(4+2)**

17. a) Describe the mechanism of DNA replication in procaryotes.
    b) A DNA contains 20% A, 30% G, 20% T and the rest is C. How many strands does it have and why ? **(4+2)**

18. a) Explain Watson-Crick model of DNA.
    b) What is a nucleosome ? **(4+2)**

19. a) Explain Griffith's experiment of bacterial transformation.
    b) What are the functions of DNA pol α and DNA pol δ in Eucaryotes ? **(4+2)**

20. a) Explain how U. V. radiation causes mutation.
    b) What is silent mutation ? **(4+2)**

21. a) Write a note on prokaryotic DNA polymerases.
    b) What is the function of primase ? (4+2)

22. a) Discuss Rho independent termination of transcription.
    b) What is 'Pribnow box' ? Mention its significance. (4+2)

23. a) What are the post transcriptional modifications ? Explain how capping is brought about.
    b) Write the functions of sigma subunit of RNA polymerase. (4+2)

24. a) Discuss the features of genetic code.
    b) What is wobble hypothesis ? (4+2)

25. a) Explain the initiation step of prokaryotic translation.
    b) What are polysomes ? (4+2)
