

B 2246

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2007.

Third Semester

Industrial Biotechnology

IB 231 — BIOCHEMISTRY

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Draw the structure of a reducing and a non-reducing disaccharide.
2. Using any dipeptide structure indicate the salient features of peptide bond.
3. Write a short note on histones.
4. Write the generic reaction catalyzed by transaminases.
5. What are the major structural and property differences between saturated and unsaturated fats?
6. In a base analysis of a DNA sample A was found to be 25%. What would be the composition of other bases?
7. Calculate the number of ATP molecules formed during glycolysis under anaerobic conditions.
8. What is gluconeogenesis?
9. Give two examples of metabolic events in which GTP takes part.
10. Write a short note on quaternary structure of proteins.

PART B — (5 × 16 = 80 marks)

11. (a) Write a note on homo and heteropolysaccharides.

Or

- (b) Give a detailed account of double stranded structure of DNA and its implication in its functions.

12. (a) Comment on the physiochemical and biochemical properties of side chains of Glu, Lys, His and Cys with structure.

Or

- (b) Draw the biosynthetic pathway of purines and pyrimidines indicating regulatory steps and types of regulation.

13. (a) Write an essay on eukaryotic protein biosynthesis.

Or

- (b) Describe the prokaryotic fatty acid biosynthesis.

14. (a) Draw the TCA cycle indicating its interconnections with other metabolic pathways.

Or

- (b) Describe the organization and functioning of respiratory chain.

15. (a) Write a detailed account of degradation of proteins and role of urea cycle in amino acid metabolism.

Or

- (b) Describe general methods by which metabolic pathways are regulated in the cell.
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