

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION JUNE 2014
(Fourth Semester)

Branch – BIOCHEMISTRY

METABOLISM - I

Time : Three Hours

Maximum : 75 Marks

SECTION-A (20 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10 x 2 = 20)

- 1 Define catabolism.
- 2 What do you mean by an isotonic solution?
- 3 What is free energy?
- 4 Write the structure of AMP.
- 5 What is fermentation?
- 6 What is gluconeogenesis?
- 7 What is the meaning for anaplerosis?
- 8 Write the reaction catalyzed by catalase.
- 9 Name the hormones involved in the regulation of glycogen metabolism.
- 10 Mention the functions of pentose phosphate.

SECTION - B (25 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 5 = 25)

- 11 a Write the applications of bacterial mutants in metabolic studies.
OR
b How will you isolate mitochondria from the cell fractionate?
- 12 a List out the role played by ATP with suitable examples.
OR
b Write a note on endergonic and exergonic reactions.
- 13 a Explain the conversion of pyruvate to acetyl coA.
OR
b Explain the reactions of fructose metabolism.
- 14 a Write a note on mixed function oxidases.
OR
b Explain the mechanism of action of DNP as an uncoupler.
- 15 a Write the reactions of glycogenesis.
OR
b Explain the regulation of glycogen phosphorylase by covalent modification.

SECTION - C (30 Marks)

Answer any THREE Questions

ALL Questions Carry EQUAL Marks (3 x 10 = 30)

- 16 Discuss the mechanism of studying metabolism by
i) Whole organism studies and ii) Perfusion studies
- 17 What are high energy compounds? Discuss about their linkage and occurrence.
- 18 Discuss the anaerobic oxidation of glucose with its energetics.
- 19 Elaborate the reactions of TCA cycle.
- 20 Describe the oxidative and regenerative phases of phosphate pathway.

Z-Z-Z

END