

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION DECEMBER 2018
(Fourth Semester)

Branch - **BIOCHEMISTRY**

METABOLISM -1

Time : Three Hours

Maximum : 75 Marks

SECTION-A (20 Marks)

Answer **ALL** questions

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

- 1 What is a whole organism study?
- 2 List two market enzymes.
- 3 Define free energy.
- 4 Comment on co enzymes.
- 5 Differentiate aerobic and anaerobic glycolysis.
- 6 How is Pyruvate converted to Acetyl CoA?
- 7 Write chemiosmotic hypothesis.
- 8 Define gluconeogenesis.
- 9 Mention two important products of HMPshunt.
- 10 What is covalent modification?

SECTION - B (25 Marks)

Answer **ALL** Questions

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

- 11 a What are market enzymes? Explain with examples.
OR
b Write about different branches of metabolism. With reactions to explain.
- 12 a Discuss biological oxidation in detail.
OR
b Give the structure of ATP and list down its significance with reactions.
- 13 a Briefly explain Pasteur effect and Crabtree effect.
OR
b Give a brief note on mitochondrial shuttle system.
- 14 a Prove chemiosmotic hypothesis holds good for oxidative phosphorylation.
Offer illustration.
OR
b TCA cycle is an amphibolic pathway. Justify.
- 15 a Explain how glycogenolysis helps in maintaining blood glucose level.
OR
b What is the purpose of Pentose phosphate pathway? What are the products of it?

SECTION - C (30 Marks)

Answer any **THREE** Questions

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

- 16 Outline the different methods to study metabolism.
- 17 Discuss about vitamins which function as coenzymes, with examples.
- 18 Enumerate the reactions of glycolysis. Discuss the reactions and energetics.
- 19 Explain how ETC and oxidative phosphorylation are coupled. Differentiate