

1129

M.E. (Biotechnology) First Semester  
MEBIO-101: Advances in Bio-Chemistry

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Answer the following:-

- a) Differentiate between anoxygenic and oxygenic photosynthesis.
- b) Differentiate between aerobic and anaerobic respiration.
- c) Name the different type of pigments involved in microbial photosynthesis.
- d) What is the difference between antisense technology and RNA interference?
- e) How type 1 diabetes differs from type 2.
- f) What are oncogenesis and tumor suppressor genes?
- g) What are the different classes of signaling molecules between the cells in the mammalian body?
- h) What are ribozymes?
- i) Enlist the functions of secondary plant metabolites.
- j) How pyruvate is converted to acetyl CoA in TCA cycle. (10x1)

UNIT – I

- II. Classify different alkaloids according to their heterocyclic groups. Also discuss their importance in medicine and industry. (10)
- III. Describe the process of breakdown of glucose to pyruvate. (10)
- IV. How nitrate is reduced to ammonia? How, hydrogen sulfide formed by sulfite reduction is fixed in the form of cysteine? (10)

UNIT – II

- V. Discuss the biosynthesis of cholesterol and regulation of its synthesis. (10)
- VI. Describe the major factors contributing to type 2 diabetics. Discuss the metabolic changes in type 2 diabetics and its treatment. (10)
- VII. What do you mean by RNA interference? Describe the various applications and challenges of antisense strategies in gene silencing. (10)

x-x-x