

Exam.Code:1032
Sub. Code: 35391

2125
M. E. (Bio-Technology)
First Semester
ME-BIO-101: Advances in Biochemistry

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 Section.

x-x-x

1. Write briefly:

- a) How does reaction center chlorophyll differ from antenna chlorophyll?
- b) What is the key enzyme in C4 pathway?
- c) What are mixotrophs?
- d) What is RISC complex in antisense technology?
- e) What is the role of Ca^{+2} in cell signaling process?
- f) What is angiogenesis?
- g) What is annamox reaction?
- h) What is the difference between bacteriochlorophyll and plant chlorophyll?
- i) How many ATP are generated in Krebs cycle?
- j) How GLUT4 is important in insulin signaling? (10×1)

SECTION - A

2. a) How does cyclic and non-cyclic electron flow differ from each other? Discuss with detail diagram.
 - b) Hydrogen bacteria obtain the most energy per two electrons oxidized while iron bacteria obtain the least. Discuss with electron flow diagram. (5,5)
3. a) Write short notes:-
- i) Anaerobic respiration
 - ii) Photorespiration.
- b) How does CO_2 fixation occur in plants through calvin cycle? Discuss with detail chemical reaction? (2.5, 2.5, 5)

P.T.O.

(2)

4. a) How does methanotrophs use methane as their carbon source? Discuss with diagram.
b) Plants produce different secondary metabolites having pharmaceutical importance.
Explain the biomedical importance of these compounds. (5, 5)

SECTION-B

5. a) What are the types of receptors present on cell? How do they work?
b) How does tumor metastasis occur? (5, 5)
6. a) Explain detail of insulin signaling along with proper diagram.
b) Write short notes:-
i) Second messengers
ii) Type 1 and 2 diabetes (5, 2.5, 2.5)
7. a) How does prostaglandin and leukotrienes research is important target of inflammatory disease condition?
b) What are various antigene strategies available for disease detection and therapy? (5, 5)

x-x-x