

Seat No. : _____

MC-116

March-2018

B.Sc., Sem.-V

CC-302 : Microbiology (Bacterial Metabolism)

Time : 3 Hours]

[Max. Marks : 70

- Instructions :** (1) Draw figures wherever necessary.
(2) Mention correct answer number.
(3) Figures to the right indicate marks.

1. Answer any **two** : 14
(a) Derive L-B equation and give its significance.
(b) Describe allosterism with suitable example.
(c) Write a note on ETC, its components and role.
(d) Describe: Zymogen activation and Covalent modification.
2. Answer any **two** : 14
(a) Explain the EMP pathway and its role.
(b) Describe TCA cycle and give its anabolic role.
(c) Describe the glycolytic pathway found in all living organisms.
(d) Write a note on : β -oxidation of fatty acids.
3. Write short notes on any **two** : 14
(a) Anoxygenic phototrophic bacteria.
(b) Photophosphorylation in halobacteria.
(c) Nitrifying bacteria and their importance.
(d) Calvin-Bensen cycle.
4. Describe any **two** : 14
(a) Anaplerotic reactions.
(b) Assimilation of ammonia.
(c) Biosynthesis of peptidoglycan.
(d) Use of biochemical mutants and radioisotopes in studying metabolism.

5. Answer in a few lines :

14

- (1) What is cumulative feed-back inhibition ?
- (2) Define K_m .
- (3) Give the role of GTP in anabolism.
- (4) Define fermentation.
- (5) Name two biopolymers utilized by chemoheterotrophs.
- (6) Why less ATP is produced by ED pathway as compared to EMP pathway' ?
- (7) What is deamination reaction ?
- (8) What is the role of Stickland reaction ?
- (9) Name the accessory pigments found in phototrophs.
- (10) What is the role of sulphur oxidizing bacteria in nature ?
- (11) Name two iron oxidizing bacteria.
- (12) What is the role of ACP ?
- (13) Give two general properties of nitrogenase.
- (14) What are uncouplers ? Give an example.