

NB-111

November-2021

B.Sc., Sem.-V

CC-301 : Biochemistry (Metabolism Paper)

Time : 2 Hours]

[Max. Marks : 50

Section – I

Attempt any **three** :

1. (a) Discuss Glycogen breakdown with structures, enzymes & coenzymes. **8**
(b) Discuss the differences between catabolism & anabolism. **6**
2. (a) Describe the Non-oxidative stage of Pentose Phosphate Pathway. **7**
(b) Define Glycolysis. Discuss the preparatory phase of Glycolysis with structures, enzymes & coenzymes. **7**
3. Where does Urea cycle occur in our body ? Describe Urea cycle reactions with structures, enzymes & coenzymes. How many ATPs are used in one cycle of Urea cycle ? **14**
4. (a) Discuss Oxidative Deamination of amino acids. **7**
(b) Describe Creatine synthesis with structures, enzymes & coenzymes. **7**
5. (a) Discuss Beta Oxidation of Palmitic acid with structures, enzymes & coenzymes. **8**
(b) Describe biosynthesis of Triglycerides with structures, enzymes & coenzymes. **6**
6. (a) Discuss difference between fatty acid biosynthesis & degradation. **7**
(b) List the ketone bodies & discuss their degradation with structures, enzymes & coenzymes. **7**
7. Describe Kreb's cycle with structures, enzymes & coenzymes with reference to reactions. Where does it take place in Eukaryotic cells ? **14**
8. (a) Discuss Glycerol Phosphate shuttle. **6**
(b) Discuss in detail the role of Coenzyme Q in Electron Transport chain. **8**

Section – II

8

9. Attempt any **Eight** :

- (1) Name the regulatory enzymes of Glycolysis.
 - (2) Name any two glucose fermentation products.
 - (3) Write reaction catalyzed by Fructokinase.
 - (4) Give one significance of Pentose Phosphate Pathway.
 - (5) What is Transamination amino acids metabolism ?
 - (6) Name the defective enzyme in Phenylketonuria. Write the reaction catalysed by it.
 - (7) What are Ammonotelic organisms ? Give an example.
 - (8) What is the product formed by Decarboxylation of amino acids ? Give an example.
 - (9) How is fatty acid transported into mitochondria ?
 - (10) Name the defective enzyme in Gaucher Disease & Tay-Sach Disease.
 - (11) Name two Phospholipids.
 - (12) What is the role of ACP during fatty acid synthesis ?
 - (13) Define P/O ratio.
 - (14) Name two inhibitors of Electron Transport Chain.
 - (15) Name any two high energy molecules.
 - (16) Where does Glyoxylate cycle occur in plants & why ?
-