

(c) How are purine nucleotides degraded? (5 x 3)

6. (a) Describe the process of fermentation.

(b) TCA is considered to be an amphibolic pathway. Justify.

(c) Fatty acids cannot enter the mitochondria on their own. Explain the steps involved with the transport. (5 x 3)

7. (a) What are the metabolic shifts happening in the starve feed cycle?

(b) What are the various steps involved in the salvage pathway of purine nucleotides?

(c) Glycolysis is considered to be a universal pathway. Elaborate. What happens in anaerobic glycolysis? (8 x 3)

8. Write short notes on the following:

(i) Urea cycle

(ii) Inborn errors of metabolism

(iii) Pentose Phosphate Pathway (5 x 3)

(100)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5027

J

Unique Paper Code : 2494002019

Name of the Paper : Intermediary Metabolism (GE)

Name of the Course : B.Sc. (H) Biochemistry (NEP)

Semester : VI

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll. No. on the top immediately on receipt of this question paper.
2. There are 8 questions.
3. Attempt **any 6** questions.
4. All questions carry equal marks.
5. **Question no. 1 is compulsory.**

P.T.O.

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1. (a) Justify the following statements:

- (i) Glutamine is considered as the primary metabolite that transports ammonia from muscle to liver.
- (ii) Patients have fruity breath in uncontrolled diabetes mellitus
- (iii) N-acetyl glutamate is a positive allosteric regulator of the Urea cycle.
- (iv) Patients suffering from gout are asked to decrease their protein intake.
- (v) Impairment of the salvage pathway can lead to inborn disorders.
- (vi) The TCA cycle is anaplerotic in nature.

(b) Write the contribution of the following scientists:

- (i) Hans Krebs
- (ii) Gustav Embden, Otto Meyerhof and Jakob Karol
- (iii) Franz Knoop

(12, 3)

2. Differentiate between the following:

- (i) Hexokinase and Glucokinase

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(ii) Transamination and Oxidative deamination

(iii) Krebs Bicycle and glucose alanine cycle

(5 x 3)

3. (a) Discuss the Reciprocal regulation of gluconeogenesis and glycolysis with specific reference to Glucokinase, PFK I and PFK II.

(b) Explain the Malate Aspartate shuttle. Give its advantage over the glycerol-3-phosphate dehydrogenase shuttle.

(c) Triacylglycerol serves as a better energy source. Justify. (6, 5, 4)

4. (a) Discuss in detail how blood sugar levels are managed?

(b) How many ATP are generated by the complete oxidation of palmitic acid? Elaborate the steps involved.

(c) How are ketone bodies synthesized? (6, 5, 4)

5. (a) How is PDH complex regulated?

(b) Discuss the various forms of Diabetes mellitus.

P.T.O.