

- (b) How is pyrimidine biosynthesis in *E.coli* regulated ? **6**

8. (a) What is meant by coupling between electron transport and ATP synthesis ? How was it demonstrated experimentally ?
- (b) Give the names and the orders of carriers in the mitochondrial electron transport chain involved in the oxidation of NADH and succinate. How was this order deduced ? **7½×2=15**

No. of Printed Pages : 04

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**D-65**

**B. Tech. EXAMINATION, May 2017**

(Fourth Semester)

(B. Scheme) (Main & Re-appear)

(BT)

BT-210-B

BIOCHEMISTRY-II

*Time : 3 Hours]*

*[Maximum Marks : 75*

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Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

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**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

### Unit I

1. (a) Define glycogenolysis and glycogenesis. Write all the reactions involved in glycogenesis. **2+8**  
(b) How is the activity of muscle glycogen phosphorylase regulated ? **5**
2. (a) Discuss the regulation of glycogen metabolism. How is the normal blood glucose level maintained ? **7+2**  
(b) Write a note on glyoxalate cycle. **6**

### Unit II

3. (a) Discuss oxidation of linolenic acid (18:3 $\Delta^9,12,15$ ). **8**  
(b) Discuss the formation and utilization of ketone bodies. What is ketosis ? **5+2**
4. (a) Write a note on the activation of fatty acid and transport of fatty acyl CoA into mitochondria. **7½**  
(b) Write a note on the biosynthesis of saturated fatty acids. **7½**

M-D-65

2

### Unit III

5. Write the sequence of reactions for the biosynthesis of any *three* of the following amino acids :
  - (i) Valine from pyruvate
  - (ii) Methionine from aspartate
  - (iii) Tryptophan from chorismate
  - (iv) Protein from  $\alpha$ -glutarate
  - (v) Serine from 3-phosphoglycerate. **5×3=15**
6. Give the reactions the degradation of any *two* of the following amino acids :
  - (i) Phenylalanine to fumarate
  - (ii) Histidine to  $\alpha$ -ketoglutarate
  - (iii) Tryptophan to 2-Aminomuconate. **7½×2=15**

### Unit IV

7. (a) Explain the denovo biosynthesis of UTP and CTP. How is dTMP synthesised from UMP ? **9**

(2-29) M-D-65

3

P.T.O.