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10BT34

**Third Semester B.E. Degree Examination, Dec.2016/Jan.2017**  
**Biochemistry**

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting at least TWO questions from each part.**

**PART – A**

- 1 a. Derive Henderson – Hassel batch equation and describe the preparation of 0.1m phosphate buffer of P<sup>H</sup> 6.2 (P<sup>ka</sup> = 6.8). (10 Marks)  
b. Explain R and S notations with examples. Add a note on epimers and enantiomer with suitable examples. (10 Marks)
- 2 a. Describe the classification of carbohydrates with examples. (10 Marks)  
b. Explain the components of DNA structure. (10 Marks)
- 3 a. Describe the structure and properties of high energy compound ATP. (10 Marks)  
b. Describe the Calvin cycle of photosynthesis. (10 Marks)
- 4 a. Distinguish the differences between active and passive transport with examples. (10 Marks)  
b. Describe signal transduction process by taking an example. (10 Marks)

**PART – B**

- 5 a. Explain the steps involved in glycolytic pathway. (10 Marks)  
b. Describe pentose phosphate pathway and its significance. (10 Marks)
- 6 a. Describe the biosynthesis of saturated fattyacids. (10 Marks)  
b. Explain the disorders associated with lipid metabolism. (10 Marks)
- 7 a. Explain the steps involved in urea cycle. (10 Marks)  
b. Discuss the biosynthesis of essential amino acids. (10 Marks)
- 8 a. Explain the biosynthesis of purine nudeotides. (10 Marks)  
b. Describe the disorders of nucleic acid metabolism. (10 Marks)

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