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Question Paper Code : 40022

B.E. DEGREE EXAMINATION, APRIL/MAY 2018
 Second Semester
 Bio Medical Engineering
 BM8201 – FUNDAMENTALS OF BIO CHEMISTRY
 (Regulations 2017)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

- Does water molecule have a linear structure – give reasons.
- Calculate the pH of a mixture of 0.10 M acetic acid and 0.20 M sodium acetate. The pKa of acetic acid is 4.76.
- What happens during glycolysis in the human body ?
- What are monosaccharides made up of and name the most abundant one found in nature ?
- Brief about fatty acids.
- List a couple of points to substantiate the need for cholesterol in animal cells.
- What are conjugated proteins ? Give examples.
- Differentiate between nucleoside and nucleotide.
- Name a few biochemical processes assisted by enzymes.
- Write about enzymes and co enzymes with examples.

PART – B

(5×13=65 Marks)

- What is a buffer ? Write about two important buffer systems that operate in our human body ? (2+6)
 - Outline a few applications of radioisotopes for biochemical analysis. (5)

(OR)

 - Sketch the different structures of water and describe its significance as an essential molecule in biological systems. (6+7)

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12. a) Appraise the biochemical aspects of diabetes and its types.

(OR)

b) Summarise the salient aspects of i) Polysaccharides and ii) Bring out the differences between glycogenolysis and gluconeogenesis? (7+6)

13. a) Write short notes on :

i) Ketogenesis and

ii) Disorders with lipid metabolism (any two). (7+6)

(OR)

b) Classify lipids and elaborate on the properties. (6+7)

14. a) Categorize Proteins based on their structure and describe their properties and functions. (2+2+3+3+3)

(OR)

b) Draw the structure and illustrate the functions of DNA. (7+6)

15. a) How are enzymes classified? Discuss the factors that are involved in working of the enzymes. (6+7)

(OR)

b) Write briefly about the inhibition action of enzymes including i) competitive ii) non competitive and iii) irreversible types? (4+4+5)

PART – C

(1×15=15 Marks)

16. a) Schematically sketch and explain the TCA cycle.

(OR)

b) Define pH. Derive Henderson Hasselbalch equation and apply them to various biochemical systems operating in the human body.
