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B.Sc. BIOCHEMISTRY (CBCS STRUCTURE)  
Paper-1 BIOMOLECULES(THEORY)  
SEMESTER-I

TOTAL HOURS:  60  
CREDITS:  4  
MAXIMUM MARKS:  80

Unit I: Carbohydrates

1.1. Monosaccharides - structure of aldoses and ketoses, ring structure of sugars, conformations of sugars, mutarotation, anomers, epimers and enantiomers,
1.2. Structure of biologically important sugar derivatives, oxidation of sugars. Formation of disaccharides, reducing and nonreducing disaccharides.
1.3. Polysaccharides – homo- and heteropolysaccharides, structural and storage polysaccharides.
1.4. Structure and role of proteoglycans, glycoproteins and glycolipids (gangliosides and lipopolysaccharides). Carbohydrates as informational molecules.

Unit II: Lipids

2.1. Lipids – classification and general properties of lipids.
2.2. Fatty acids, glycerol, ceramide; Storage lipids - triacyl glycerol and waxes.
2.4. Lipids as signals and cofactors. Eicosanoids-structure & functions.

Unit III: Amino acids and Proteins

3.1. Structure and classification, physical, chemical and optical properties of amino acids.
3.3. Structural organisation of proteins. Protein denaturation and renaturation.

Unit IV: Nucleic acids

4.2. Structure of major species of RNA - mRNA, tRNA and rRNA.
4.3. Nucleic acid chemistry- UV absorption, effect of acid and alkali on DNA.
4.4. Functions of nucleotides - source of energy, component of coenzymes, second messengers.
CORE-1: BIOMOLECULES (PRACTICALS)
SEMESTER – I

Marks: 25          CREDITS : 1

1. Qualitative analysis of carbohydrates.
2. Qualitative analysis of amino acids and proteins.
3. Qualitative analysis of lipids.
5. Determination of total Carbohydrate content in cereal by anthrone method.
7. Estimation of ascorbic acid from biological samples by titrimetric method.
8. Determination of iodine value of a lipid.
10. Estimation of Calcium from milk.

SUGGESTED READINGS

SCHEME OF QUESTION PAPER

B.Sc (Faculty of Sciences) I/II/III/IV Semester
I-Internal Assessment Examination*
Code: Name of the Paper
(Under CBCS Scheme)

Time: 90 Min]                                                                                                           [Marks: 20

Answer ALL questions.

1. Assignments and Attendance ---- 5M
2. Multiple Choice Questions – 5M (one mark for each question for five questions)
3. Fill in the blanks – 5M (one mark for each question for five questions)
4. Match the following --- 5M (one mark for each question for five questions)

*The internal marks will be calculated on the average of two internal tests
B.Sc (Faculty of Sciences)

CBCS Pattern in Semester System (with effect from 2016-17)

SCHEME OF QUESTION PAPER
B.Sc (Faculty of Sciences) I/II/III/IV Semester
KAKATIYA UNIVERSITY, WARANGAL
Code: Name of the Paper
(Under CBCS Scheme)

Time: 3 Hours] [Marks: 80

SECTION-A: SHORT ANSWER QUESTIONS (8 x 4 = 32)
Answer any 12 questions from Unit-I

1. From Unit-I
2. From Unit-I
3. From Unit-II
4. From Unit-II
5. From Unit-II
6. From Unit-III
7. From Unit-III
8. From Unit-III
9. From Unit-IV
10. From Unit-IV
11. From Unit-IV
12. From Unit-IV

SECTION-B: ESSAY TYPE ANSWER QUESTIONS (4 x 12 = 48)
Answer all questions

1. (a) From Unit-I
   OR
   (b) From Unit-I

2. (a) From Unit-II
   OR
   (b) From Unit-II

3. (a) From Unit-III
   OR
   (b) From Unit-III

4. (a) From Unit-IV
   OR
   (b) From Unit-IV