

Registration No. :

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Total number of printed pages – 2

B. Tech
PCBT 4201

Third Semester Examination – 2013

BIOCHEMISTRY

BRANCH : BIOTECH

QUESTION CODE : C-477

Full Marks – 70

Time : 3 Hours

*Answer Question No. 1 which is compulsory and any **five** from the rest.
The figures in the right-hand margin indicate marks.*

1. Answer the following questions : 2×10
- (a) What are the secondary levels of protein structure ?
 - (b) How energy is derived from ATP ?
 - (c) What is 'codon' ?
 - (d) Draw the Haworth perspective of glucose molecule.
 - (e) What is oxidative phosphorylation ?
 - (f) Draw peptide bond formation.
 - (g) What is meant by protein turnover ?
 - (h) What is the role of gyrase enzyme ?
 - (i) Give two reasons why waxes are important in vertebrates.
 - (j) Give three-letter representations of :
 - (i) Tryptophan
 - (ii) Aspartate
2. Write down the successive reaction steps of the citric acid cycle. Calculate the overall yield of ATP from complete oxidation of glucose. 8+2

P.T.O.

3. Draw the Haworth perspective structure of any one disaccharide. Describe homopolysaccharide and heteropolysaccharide with examples. Why sugars are stored as polysaccharide inside the cell ? 3+5+2
4. Find out the velocity expression of enzyme catalyzed reactions by Michaelis-Menten approach. How does binding energy contribute towards lowering the activation energy in enzyme catalyzed reaction ? 6+4
5. What is peptide plate structure ? What is Ramachandran plot ? 6+4
6. Explain the steps of beta-oxidation of fatty acids. Provide proper chemical reactions involved. 10
7. What do you mean by genetic code ? Explain the features of genetic code. Write about the start and end codons. 2+6+2
8. Write short notes on : 2.5 × 4
- (a) DNA replication
 - (b) Importance of vitamins
 - (c) rRNA
 - (d) pI of amino acids.

