

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86
(For candidates admitted during the academic year 2011–12 and thereafter)
SUBJECT CODE: 11CH/AC/BC33

B.Sc. DEGREE EXAMINATION, NOVEMBER 2013
BRANCH V(a) – PLANT BIOLOGY & PLANT BIOTECHNOLOGY
BRANCH VI(a) - ADVANCED ZOOLOGY & BIOTECHNOLOGY
THIRD SEMESTER

REG.NO

COURSE : ALLIED CORE
PAPER : BIOCHEMISTRY - I
TIME : 30 MINUTES

MAX.MARKS : 30
(30x1=30)

SECTION – A
ALL QUESTIONS TO BE ANSWERED
ANSWER ON THE QUESTION PAPER ITSELF:

I.CHOOSE THE CORRECT ANSWER:

1. An example for non reducing disaccharide is
i) Glucose ii) fructose iii) Sucrose iv) lactose
2. Enzymes catalyzing the synthetic reactions are called
i) Lyases ii) isomerases iii) ligases iv) hydrolases
3. D-Glucose on treatment with strong mineral acid gives
i) Levulinic acid ii) osazone iii) Mannic acid iv) formic acid
4. The following polysaccharide is composed of beta glycosidic bonds
i) starch ii) glycogen iii) dextrin iv) cellulose
5. The glycosaminoglycan that serves as an anticoagulant is
i) Heparin ii) hyaluronic acid
iii) chondroitin sulphate iv) dermatan sulphate
6. The only route through which hydrogen ions are eliminated from the body is
i) lungs ii) stomach iii) kidneys iv) none of them
7. One of the following enzymes in glycolysis which catalyses an irreversible reaction is
i) hexokinase ii) Pyruvate kinase
iii) phosphofructokinase iv) all of them
8. The number of ATP produced when a molecule of acetylCoA is oxidized through citric acid cycle is
i)12 ii)24 iii)38 iv)15.
9. The connecting link between HMP shunt and lipid synthesis is
i) ribose ii)NADPH
iii) NADH iv)sedoheptulose 7-phosphate.
- 10.Synthesis of 2,3-biphosphoglycerate occurs in the tissue namely
i)Liver ii) kidney iii) erythrocytes iv) brain.

II. FILL UP THE BLANKS:

11. Regulation of water balance depends upon _____ mechanisms .
12. Chondroitin sulphate B contains _____ in place of glucuronic acid.
13. The multiple forms of an enzyme catalyzing the same reaction are _____.
14. The separation of optically active isomers from a racemic mixture is called _____.
15. Glucose and galactose are _____ with regard to C-4.
16. The principle cation of the extracellular fluid is _____.
17. Ingestion of water is mainly controlled by a thirst centre located in the _____.
18. Carbonic acid dissociates into _____ and _____.
19. The expansion of SDS-PAGE is _____.
20. Starch is made up of _____ and _____.

III. MATCH THE FOLLOWING:

21. Hyaluronic acid - sodium potassium tartarate
22. Exergonic reactions - Osazone
23. Entropy - synovial fluid
24. Fehling's solution - disorder
25. Maltose - catabolism

IV. ANSWER IN ONE OR TWO SENTENCES:

26. Mention the functions of polysaccharides.
27. What is acidosis and alkalosis?
28. What is dialysis?
29. What are coenzymes?
30. What is gluconeogenesis?

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TIME : 2½ HOURS

MAX.MARKS : 70

SECTION – B

(5x6=30)

Answer any FIVE questions:

1. Explain briefly the structure and properties of starch.
2. Explain the role of ATP as the currency of the cell.
3. Discuss any three reactions of fructose.
4. Describe the role of blood buffers in the acid-base balance.
5. Write a note on the digestion of carbohydrates.
6. Describe briefly the reactions of glycolysis.
7. Write a note on free energy.

SECTION – C

(2x20=40)

Answer any TWO questions:

8. Describe the mechanism of enzyme action. Explain the various factors affecting the enzyme activity. (8+12)
9. What is Krebs's cycle? Draw a flow diagram showing the reactions of Krebs's cycle. Discuss its importance.
10. a) Discuss the maintenance of glucose level in blood.
b) Explain the electron Transport Chain. (10+10)
