

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86
(For candidates admitted during the academic year 2008 –09)

SUBJECT CODE: CH/AC/BC33

B.Sc. DEGREE EXAMINATION, NOVEMBER 2009

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

SECTION – A

(30x1=30)

ANSWER ON THE QUESTION PAPER ITSELF.

Answer all the questions.

I. Choose the correct answer:

1. The normal physiological pH of blood is
a) 7.05 b) 7.40 c) 6.8 d) 8.33
2. The buffer present in the intracellular fluid is
a) bicarbonate b) hemoglobin c) phosphate d) acetate
3. Germinating seeds have one of the following sugars in abundance
a) Maltose b) Fructose c) Sucrose d) Glucose
4. The number of ATPs formed by the anaerobic oxidation of 2 glucose units is
a) 2 b) 4 c) 8 d) 16
5. Which of the following is a non reducing sugar.
a) glucose b) fructose c) sucrose d) maltose
6. The number of high energy bonds in ATP are
a) 2 b) 3 c) 1 d) 4
7. TCA cycle takes place in
a) Cytosol b) Mitochondria c) Golgi apparatus d) Nucleus
8. The concentration of Substrate will be equal to Michaelis Menten constant at
a) Peak velocity b) half maximal velocity c) start of the reaction d) None
9. Inactive form of an enzyme is
a) coenzyme b) endoenzyme c) exoenzyme d) zymogen
10. Ptyalin acts on
a) 1 -4 linkage b) 1 – 6 linkage c) 1 -2 linkage d) 2 – 6 linkage

II State true or false:

11. Glycolysis happens only in eukaryotes
12. Digestion of carbohydrates starts in the stomach
13. In gel permeation chromatography, the larger molecule will elute first.
14. Anabolism is destructive process.
15. Prosthetic groups are covalently linked.

III Match the following:

- | | |
|--------------------|------------|
| 16. oxidoreductase | a) Class 5 |
| 17. hydrolase | b) Class 1 |
| 18. isomerase | c) Class 3 |
| 19. lyase | d) Class 6 |
| 20. ligase | e) Class 4 |
- S

IV Fill in the blanks:

21. Paper chromatography uses the principle of _____.
22. An example of heteropolysaccharide is _____.
23. The ratio of $\text{HCO}_3^- / \text{H}_2\text{CO}_3$ should be _____ under normal conditions
24. A spontaneous reaction should have _____.
25. The complex III of the electron transport system is _____

V Answer the following in one or two sentences:

26. Define Entropy

27. TLC

28. Dialysis

29. Steady state principle

30. Draw the Haworths' structure of Fructofuranose

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86
(For candidates admitted during the academic year 2008 –09)

SUBJECT CODE: CH/AC/BC33

B.Sc. DEGREE EXAMINATION, NOVEMBER 2009
BRANCH V(a) – PLANT BIOLOGY & PLANT BIOTECHNOLOGY
BRANCH VI(a) - ADVANCED ZOOLOGY & BIOTECHNOLOGY
THIRD SEMESTER

COURSE : ALLIED CORE
PAPER : BIOCHEMISTRY- I
TIME : 2 HOURS

MAX.MARKS : 70

SECTION – B

(5x6=30)

ANSWER ANY FIVE QUESTIONS

1. Describe the digestion of di and polysaccharides in the human body
2. Give an account of the maintenance of sugar at 120 mg per 100 ml of blood
3. Write a note on the oxidative phosphorylation and its inhibitors.
4. What are the different buffers that help in maintaining the pH at normal values
5. Elucidate the structure of Glucose with Glyceraldehyde as the standard
6. Give the anaerobic pathway of glycolysis along with the energy considerations.
7. What the various factors affecting enzyme action.

SECTION – C

(2x20=40)

ANSWER ANY TWO QUESTIONS

8. Give an account of the following
 - a) Gluconeogenesis
 - b) Glycogen metabolism.
9. Where does the TCA cycle take place in the cell? How many ATPs are formed in one cycle? Give the complete sequence of the cycle.
10. Write short notes on
 - a) ATP as the currency of the cell
 - b) Exergonic and endergonic reactions
 - c) Standard Free energy
 - d) Mechanism of enzyme action
11. Give the principle and working of Thin Layer Chromatography. Describe the procedure using any one application

▲▲▲▲▲▲▲▲▲▲▲▲

