

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86
(For candidates admitted during the academic year 2004 –05 & thereafter)

SUBJECT CODE: CH/AC/BC32

B.Sc. DEGREE EXAMINATION, NOVEMBER 2008

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. Which one of the following is a Lewis acid?
a) HCl b) BF₃ c) HNO₃ d) ZnSO₄
2. The strongest acid of the following
a) acetic acid b) formic acid c) propionic acid d) isobutric acid
3. During the dissolution of NaCl
a) free energy increases b) heat is liberated
c) entropy increases d) entropy decreases.
4. When a liquid boils there is an increase in
a) free energy b) entropy
c) heat of vaporization d) potential energy
5. Which of the following is a non reducing sugar.
a) glucose b) fructose c) sucrose d) maltose
6. Phenylhydrazine reacts with glucose on the following carbons
a) 2 and 3 b) 3 and 4 c) 1 and 2 d) 4 and 5
7. Glyconeogenesis is the conversion of
a) glucose to pyruvate b) glucose to glycogen
c) glycogen to glucose d) non carbohydrate to glucose
8. In TCA cycle GTP is created in the conversion of
a) malate to oxaloacetate b) citrate to isocitrate
c) succinyl CoA to succinate d) fumarate to malate
9. Inactive form of an enzyme is
a) coenzyme b) endoenzyme c) exoenzyme d) zymogen
10. In Michaelis Menten equation, at half maximal velocity, Km will be equal to the concentration of
a) enzyme b) substrate c) cofactor d) coenzyme

II State true or false :

11. NH_3 is a Lewis base
12. Blood sugar level is maintained by insulin
13. In column chromatography, the larger molecule will elute first.
14. Anabolism is destructive process.
15. Coenzymes are proteins.

III Match the following :

- | | |
|---------------------|-------------|
| 16. aldohexose | a) coenzyme |
| 17. ketohexose | b) dialysis |
| 18. small particles | c) glucose |
| 19. TPP | d) proteins |
| 20. electrophoresis | e) fructose |

IV Fill in the blanks:

21. Lewis base is an electron _____.
22. The number of asymmetric carbons in fructose is _____.
23. The mobility of proteins in an electric field is known as _____.
24. Mitochondria is known as _____ of the cell.
25. _____ gives blue color with iodine.

V Answer the following in one or two sentences:

26. What is a buffer?
27. Define standard free energy
28. Uses of electrophoresis
29. What is glycolysis
30. Michaelis constant



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

MAX.MARKS : 70

SECTION – B

(5x10=50)

ANSWER ANY FIVE QUESTIONS

1. How will you separate a mixture of proteins using column chromatography?
2. Give an account on electron transport system.
3. How are polysaccharides digested in the body? How is the blood sugar level maintained?
4. Write the complete steps involved in the glycogenesis along with the enzymes involved.
5. How are enzymes classified. Give an example for each.
6. What the various factors affecting enzyme action.
7. Write a note on oxidative phosphorylation.

SECTION – C

(1x20=20)

ANSWER ANY ONE QUESTION

8. Give an account of the following
 - a) Glyconeogenesis
 - b) Mechanism of enzyme action by Fischer and Koshlandmodel.
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.

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