

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86**  
(For candidates admitted during the academic year 2015–16 & thereafter)

**SUBJECT CODE: 15CH/AC/FB33**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2017**  
**BRANCH V(a) – PLANT BIOLOGY & PLANT BIOTECHNOLOGY**  
**BRANCH VI(a) - ADVANCED ZOOLOGY & BIOTECHNOLOGY**  
**THIRD SEMESTER**

**COURSE : ALLIED CORE**  
**PAPER : FUNDAMENTALS OF BIOCHEMISTRY - I**  
**TIME : 3 HOURS**

**MAX.MARKS :100**  
**(30x1=30)**

**SECTION – A**  
**ANSWER ALL QUESTIONS**

**I.CHOOSE THE CORRECT ANSWER:**

1. SDS PAGE is used to separate macromolecules  
a) Carbohydrates                      b) Lipids                      c) Proteins                      d) Nucleic acids
2. Phenolphthalein turns ----- in acidic solutions  
a) Pink                      b) Red                      c) Colorless                      d)White
3. Haemophilia is a----- disease  
a) X linked dominant                      b) X linked recessive  
c) Y linked dominant                      d) Y linked recessive
4. PMNL cells is also called as  
a) Neutrophil                      b) Eosinophil                      c) Lymphocytes                      d) Basophil
5. pH of blood is  
a) 6.80-7.21                      b)7.35-7.45                      c)7.42-7.80                      d) 7.26 - 7.84
6. The SI unit of entropy is  
a) Joule                      b) Kelvin                      c) Kelvin/joule                      d) Joule/kelvin
7. Starch is hydrolyzed in saliva by  
a) Ptyalin                      b)Sucrase                      c)Maltase                      d) Lactase
8. ----- is a heteropolysaccharide  
a) Starch                      b) Sucrose                      c) Glycogen                      d) Hyaluronic acid
9. Pick the odd one out of the following  
a) NAD                      b) TPP                      c) PPi                      d) FAD
10. Urease is an example of -----specificity  
a) Substrate                      b) Group                      c) Relative                      d) Reaction

**II. FILL IN THE BLANKS:**

11. pH=\_\_\_\_\_.
12. \_\_\_\_\_ solutions are those with a pH above 7.
13. Sodium , potassium and bicarbonates are \_\_\_\_\_ present in the body.
14. \_\_\_\_\_ cells involved in immunity.
15. SI unit of enthalpy is\_\_\_\_\_.
16. ATP and ADP are \_\_\_\_\_ compounds.
17. \_\_\_\_\_ is pathway where the glucose is synthesized from non carbohydrate sources.
18. Starch is made up of amylose and \_\_\_\_\_.
19. Optimum temperature is the temperature at which enzyme shows \_\_\_\_\_ activity.
20. \_\_\_\_\_proposed induced fit model of enzyme action.

**III.STATE WHETHER TRUE OR FALSE:**

21. The centrifuge works under the sedimentation principle.
22. In sickle cell anemia red blood cells carry adequate oxygen throughout the body.
23. Endergonic reaction are reactions where energy is released
24. Sucrose is made up of glucose and fructose
25. Coenzyme is anon protein part of the enzyme.

**IV. ANSWER IN ONE OR TWO SENTENCES:**

26. Ionic product of water
27. Acidosis
28. Steady state principle
29. Chondroitin sulphate
30. Active site

**SECTION – B****(5x6=30)****Answer any FIVE questions:**

31. Explain the properties of water.
32. Discuss the role of buffers and electrolytes in the body.
33. Describe the role of ATP as the energy currency of the cell.
34. Explain the oxidation and reduction reactions of glucose.
35. Briefly explain the model of enzyme action
36. How glucose level is maintained in blood.
37. Discuss the digestion and absorption of carbohydrates.

**SECTION – C****(2x20=40)****Answer any TWO questions:**

38. Discuss the steps involved in TCA cycle.
39. a) Elaborate on the mechanism of blood coagulation.  
b) Describe the sequential steps in the electron transport chain of events.
40. a) Outline the classification of enzymes with examples?  
b) Distinguish between
  - i. monosaccharide and disaccharide
  - ii. aldohexose and ketohexose
  - iii. amylose and amylopectin
  - iv. homopolysaccharide and heteropolysaccharide
  - v. Dialysis and sedimentation

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