SECTION – D

Answer **any 2** questions. **Each** question carries a weightage of **4**.

19. Briefly explain the different structures of proteins.

20. Discuss the structure of sucrose.

21. a) Describe a method of synthesis of quinoline.

    b) What happens when quinoline is treated with

    i) $KMnO_4$

    ii) $NaNH_2$ **(2×4=8)**

M 6306

Reg. No.: .....

Name: .....

IV Semester B.Sc. Degree (CCSS-Regular/Suppl./Impro.) Examination, May 2014
Complementary Course in Chemistry
4C04 CHE : CHEMISTRY FOR BIOLOGICAL SCIENCES

Time : 3 Hours Max. Weightage : 25

SECTION – A

Answer **all** questions. **Each** bunch of **four** questions carries a weightage of **1**.

1. i) Glucose on treating with nitric acid gives

    a) Tartaric acid b) Oxalic acid

    c) Gluconic acid d) Saccharic acid

    ii) Distillation of succinimide with Zn dust gives

    a) Pyrrole b) Furan c) Thiophene d) Pyridine

    iii) Million's reagent is

    a) $HgNO_3 + Hg(NO_3)_2$ in HNO_3 b) Alkaline $CuSO_4$

    c) Ninhydrin reagent d) Conc. HNO_3

    iv) On heating with sodamide in Liq.ammonia, pyridine gives

    a) 3-aminopyridine b) 2-aminopyridine

    c) 1-aminopyridine d) None of the above

2. i) The nonprotein part in glycoprotein is

    a) Pyrrole part b) Carbohydrate

    c) Phosphoric acid d) Lipid

    ii) The base not present in RNA is

    a) Adenine b) Guanine c) Uracil d) Thymine

iii) _____ is a complex of Mg^{2+} with porphrin.

a) Haemoglobin b) Ferridoxin c) Myoglobin d) Chlorophyll

iv) Esterases can hydrolyse only

a) Esters b) Acetic acid c) Acetone d) Carboxylic acid

3. i) A test used to distinguish RNA and DNA

a) Methyl green-pyronin test b) Xanthoproteic test

c) Biuret test d) Ninhydrin test

ii) Glucose on condensation with excess phenyl hydrazine gives

a) Osazone b) Phenylhydrazone

c) Oxime d) Semicarbazone

iii) Protein part in haemoglobin

a) Globulin b) Histones c) Globin d) Albumin

iv) Quinoline on reduction with Pt / acetic acid gives

a) Tetrahydroquinoline b) Decahydroquinoline

c) Tetrahydroisoquinoline d) None of the above

4. i) The aminoacid which cannot be synthesized in the body are called

a) Essential aminoacid b) Non-essential aminoacid

c) Acidic aminoacid d) Neutral aminoacid

ii) Which vitamin is known as ascorbic acid ?

a) Vitamin A b) Vitamin C c) Vitamin B d) Vitamin D

iii) The product obtained by the reduction of thiophene with Raney Nickel

a) Furan b) n-Butane

c) Tetrahydrothiophene d) None of the above

iv) The pH at which an aminoacid doesnot migrate in an electric field is called

a) Dextro rotatory b) Zwitter ion

c) Isoelectric point d) None of the above **(4×1=4)**

SECTION – B

Answer **any 5** questions. **Each** question carries a weightage of **1**.

5. What is mutarotation ? Explain using glucose as an example.
6. What happens when glycine is treated with nitrous acid ?
7. What are anomers ? Give example.
8. Name the vitamins whose deficiency causes
   i) scurvy
   ii) pernicious anemia
9. What is myoglobin ?
10. What are zwitter ions ?
11. How does furan react with maleic anhydride ?
12. Give the names and structures of the base present in RNA but not in DNA.

(5×1=5)

SECTION – C

Answer **any 4** questions. **Each** question carries a weightage of **2**.

13. What are the different types of RNA ? What are their functions ?
14. How are enzymes classified ?
15. Explain why glucose and fructose give the same osazone ?
16. How is pyridine isolated from coal tar ? Explain why pyridine is more basic than pyrrole.
17. How are proteins classified on different criteria ?
18. Explain the mechanism of enzyme action. **(4×2=8)**