E 5028 (Pages : 2) Reg. No.....

Name.....

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, APRIL 2013

Sixth Semester

Core Course : CHEMISTRY OF NATURAL PRODUCTS AND BIOMOLECULES

(Common for B.Sc. Chemistry Model I, Model II, B.Sc. Petrochemicals and B.Sc. Chemistry Environment and Water Management)

Time : Three Hours Maximum Weight : 25

Section A

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

I. 1 ——— is a Non-reducing Sugar.

2 Name of Vitamin A is ———.

3 Pyridine and Piperidine, more basic one is ———.

4 Haworth projection formula of Glucose is ———.

II. 5 Name the Monomer units in Cellulose.

6 How does DNA differs from RNA in terms of sugar unit present in it.

7 Name the product formed when fructose is reduced with Na/Hg and water.

8 One source of Vitamin B_6 is ———.

III. 9 Rancidity of oil is ———.

10 Two anomeric forms of Glucose are ——— ———.

11 Draw the structure of Coniine.

12 Draw the Zwitter ionic forms of Alanine.

IV. 13 Double Helical structure of DNA is discovered by the scientist ———.

14 What is Hydrogenation of Oil or fat ?

15 Explain specificity of enzyme with one example.

16 According to base pairing Principle Adenine Pairs with ——— in DNA.

(4 × 1 = 4)

Section B

Answer question any **five** *questions.*
Each question carries a weight of 1.

17 What is isoprene rule ? Explain citing one example.

18 Draw the structure of Vitamin C and mention one of its Biological function.

19 What is epimerisation ?

Turn over

20 How does starch differs from cellulose structurally ?

21 What do you mean by inversion of cane sugar ? Why is it called so ?

22 Give one method for the preparation of Thiophene.

23 Explain the secondary structure of Protein.

24 How is Pyrrole obtained from succinimide ?

(5 × 1 = 5)

Section C

Answer any **four** *questions.*
Each question carries a weight of 2.

25 Furan is less aromatic than pyrrole ? Explain. Give two reactions showing the same.

26 Write briefly on supra molecular chemistry.

27 Explain the Aromaticity of Pyrrole and Pyridine using M.O. theory. Among these, which is more basic. Give reason.

28 Give an account of the structure elucidation of citral.

29 How are the following prepared :

(i) Fructose from Glucose.

(ii) Arabinose from Glucose.

30 Discuss briefly on the Biological functions of DNA.

(4 × 2 = 8)

Section D

Answer any **two** *questions.*
Each question carries a weight of 4.

31 (a) Give an account of the structure elucidation of Nicotine.

(b) Discuss briefly on the cyclic structure of Glucose.

32 (a) Discuss briefly on the methods used for the analysis of fats or oil.

(b) Write briefly on solution phase peptide synthesis.

33 Explain the following :—

(a) Bischler and Napieralski synthesis.

(b) Skraup synthesis.

(c) Fisher Indole synthesis Indole.

(2 × 4 = 8)