SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH/APRIL 2015

(UG–CCSS)

Core Course

Chemistry

CH6 B16—ORGANIC CHEMISTRY—III

Time : Three Hours   Maximum : 30 Weightage

I. Multiple choice or fill in the blank type. Answer *all* questions. Each question carries a weightage of ¼ :

  1   The finger print region in the IR spectrum lies between ———— and ————.

  2   Starch is a ———— saccharide.

  3   Bromine water oxidation of glucose gives ————.

  4   Which among the following is a non-reducing sugar ?

     (a) D(+)–glucose.   (b) fructose.

     (c) sucrose.   (d) L(–)–glucose.

  5   Among the following which is optically inactive ?

     (a) serine.   (b) alanine.

     (c) glycine.   (d) cystine.

  6   ———— is the oldest known dye.

  7   ———— is an example of an acidic amino acid.

  8   Which among the following is not present in DNA ?

     (a) uracil.   (b) adenine.

     (c) guanine.   (d) thymine.

  9   The most basic among the following is :

     (a) pyrrole.   (b) pyridine.

     (c) piperidine.   (d) quinoline.

10   ———— is an example of an anthraquinone dye.

11   Green chemistry reduces the use and generation of ————substances.

12   ———— coined the term green chemistry.

                                                      (12 × ¼ = 3 weightage)

Turn over

II. Short answer type questions. Answer all *nine* questions. Each question carries a weightage of 1 :

13 Arrange anthracene, benzene and naphthalene in the decreasing order of λ max ?

14 Why TMS is used as an internal standard in NMR spectroscopy ?

15 How will you distinguish between ethanol and acetone by IR spectra ?

16 What is Hoffman's elimination ?

17 Write the products obtained by the complete hydrolysis of triglycerides.

18 What are the vitamins present in vitamin B_6 ?

19 What happens when quinoline is treated with sodamide ?

20 Give the microwave assisted Diels-Alder reaction.

21 What is meant by atom economy ?

$(9 \times 1 = 9$ weightage)

III. Short essays or paragraph questions. Answer any *five* questions. Each question carries a weightage of 2 :

22 Explain the principle of thin layer chromatography.

23 Represent a purine nucleoside.

24 Draw the resonating structures of pyrrole.

25 What happens when ethyl aceto acetate is treated with hydroxylamine ?

26 How phenolphthalein is synthesized ?

27 Explain briefly the biosynthesis of proteins.

28 Give an account of ultrasound assisted reactions.

$(5 \times 2 = 10$ weightage)

IV. Essay Questions. Answer any *two* questions. Each question carries a weightage of 4 :

29 Discuss the primary, secondary and tertiary structure of proteins.

30 Describe the various steps involved in Killiani-Fischer synthesis.

31 Give an account of the structure and biological importance of :

　(i) nicotine.

　(ii) piperine.

$(2 \times 4 = 8$ weightage)