UG Odd Semester (CBCS) Exam., December—2016

PHARMACEUTICAL SCIENCE

(1st Semester)

Course No. : BPH–105 (C)

(Organic Chemistry–I)

Full Marks : 75
Pass Marks : 30

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer **five** questions, taking **one** from each Unit

UNIT—I

1. Discuss atomic structure, atomic orbital and molecular orbital. Write notes on sigma, pi, covalent and co-ordinate covalent bonds. What is an inductive effect? 6+8+1

2. Explain in detail sp^3, sp^2 and sp hybridizations with specific examples. Classify organic compound with examples. 10+5

UNIT—II

3. Classify isomerism with examples. Explain optical activity. Write a note on Cahn-Ingold-Prelog R/S notation. What are mesomers? 5+3+5+2

4. Describe various types of conformers with examples. Write a note on geometrical isomers. Explain the E/Z notation of an alkene. 7+3+5

UNIT—III

5. Write notes on the following : 7½×2=15

(a) Method of preparations of alkanes, alkenes and alkynes

(b) Free radical substitution reactions and preparation of alkyl halide

6. Discuss the nucleophilic substitution reaction of alkyl halide. Classify dienes with examples. Write down the method of preparation of monohydric alcohols. 7+3+5

UNIT—IV

7. Discuss the structural elucidation of benzene ring. Write a note on the orientation of electrophilic aromatic substitution. 10+5

8. Write short notes on the following : 7½×2=15

(a) Cumene-phenol process

(b) Nucleophilic aromatic substitution of aryl halide

UNIT—V

9. Give the method of preparation of aldehyde, ketone and monocarboxylic acid. Discuss the synthetic applications of organometallic compounds. Classify hydroxy acid with examples. (2×3)+6+3

10. Write down the method of preparation of Grignard reagent and organolithium compound. How are di- and tri-carboxylic acids synthesized? Write a note on benzoin condensation. 6+5+4

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