Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/B.PHARM (Old)/SEM-3/PT-304/2009-10

2009

PHARMACEUTICAL CHEMISTRY (ORGANIC)

Time Allotted : 3 Hours | Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following : 10 × 1 = 10

i) Ninhydrin test is given by

a) carbohydrate b) protein

c) lipid d) none of these.

ii) Identify the following reaction :

dia

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iii) In pericyclic reactions orbital overlap occurs by

a) HOMO and LUMO b) HOMO and HOMO

c) LUMO and LUMO d) All of these.

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iv) Identify the following reaction :

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v) Bischler Napieralsky synthesis is performed in the preparation of

a) Indole b) Quinoline

c) Isoquinoline d) None of these.

vi) The phenomenon of changing optical rotation of α-*D*-Glucose from + 112° to + 53° on standing is known as

a) Mutarotation b) Anomerization

c) Epimerization d) Inversion.

vii) The name of the following compound is

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a) Imidazole b) Pyrazole

c) Imidazoline d) Pyrazoline.

viii) Aspartic acid is a

a) Amino acid b) Fatty acid

c) Both of these d) None of these.

ix) Claisen rearrangement is a type of

a) Sigmatropic reaction

b) Electrocyclic reaction

c) Cycloaddtion rection

d) None of these.

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x) Pyridine gives electrophilic substitution reaction at

a) 1, 4 position b) 2, 6 position

c) 3, 5 position d) all of these.

xi) The name of the ring is



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a) Indoline b) Oxyindole

c) Indoxyl d) Isatin.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. What are conrotatory and disrotatory movements seen in electrocyclic reactions ? What are sigmatropic and cycloaddition reactions ? Define with examples. 1 + 2 + 2

3. Write short notes on $2\frac{1}{2} + 2\frac{1}{2}$

   i) Hantzsch Pyridine synthesis

   ii) Knorr Pyrrole synthesis.

4. What is Killiani-Fisher synthesis ? Explain with example. There are two test tubes - one containing carbohydrate and the other containing protein. How will you identify them ? 3 + 2

5. Write short notes on 3 + 2

   i) Skraup synthesis

   ii) Reissert indole synthesis.

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GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

6. Differentiate between stereospecific and stereoselective synthesis. What is Wilkinson's catalyst ? With the help of Wilkinson's catalyst explain the mechanism of

   i) Conversion of alkene to alkane

   ii) Enantioselective synthesis.

   What is regiochemical synthesis ? 2 + 1 + 5 + 5 + 2

7. Write short notes on 4 + 3 + 4 + 4

   i) Mutarotation

   ii) Anomerization in carbohydrate chemistry

   iii) Chemical synthesis of proteins

   iv) Composition of DNA and RNA in eukaryotic cell.

8. What is ($\pi^4 + \pi^2$) type of cycloaddition reaction ? With the help of orbital symmetry exlain any electrocyclic reaction. Write short notes on

   i) Anchimeric assistance in neighbouring group effect

   ii) Suprafacial and anterofacial shift in sigmatropic reaction. 2 + 5 + 5 + 3

9. What are Saponification number and iodine number of a fat or oil ? What is the difference between vegetable oil and vegetable ghee ? Explain with example. Write in details on

   i) Rancidification of oil

   ii) Biosynthesis of lipids. 1 + 1 + 2 + 4 + 7

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