



* R N - 8 0 4 9 / 1 0 0 *

RN-8049

B. E. - II (Sem. III) (Chemical) Examination

May / June - 2010

Organic Chemistry & Unit Process

(As per New GTU Syllabus)

Time : 3 Hours]

[Total Marks : 100

Instructions :

(1)

नीचे दृशविले निशानीवाणी विगतो उत्तरवही पर अवश्य लखवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="checkbox"/> B. E. - 2 (Sem. 3) (Chemical)	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="checkbox"/> Organic Chemistry & Unit Process	<input type="text"/>
Subject Code No. : <input type="text"/> 8 <input type="text"/> 0 <input type="text"/> 4 <input type="text"/> 9	<input type="text"/>
Section No. (1, 2,.....) : <input type="text"/> 1&2	
Student's Signature	

- (2) Q 1 and 4 are **compulsory** and carries **20** marks each.
- (3) Question 2, 3 and 5, 6 carries **15** marks each.
- (4) Answers to the **two** section should be written in **separate** answer books with figures and mechanism wherever necessary.

SECTION - I

- 1 (a) Fill in the blanks : 10
- (i) _____ is adopted as a standard anti knock fuel and has been assigned the octane number 100.
- (ii) _____ and _____ have established that organic colouring matter on reduction gave colourless products which regained original colour on oxidation.
- (iii) The stability of carbanion is increased if the electron _____ groups are introduced.
- (iv) An elimination reaction is one in which the formation of _____ or _____ bond takes place.
- (v) On reaction of acids with alcohols _____ are formed.

- (vi) Alkyl halide on reaction with sodium hydrogen sulphides give _____.
- (vii) Usually the nitration is carried out with _____ and _____ mixture.
- (b) Explain different types of organic reactions with suitable examples in each reaction. **5**
- (c) Explain the preparation, properties and uses of carboxylic acid. Also explain the formation of different derivatives of carboxylic acids. **5**
- 2** Answer the following : (any **five**) **15**
- (a) Write the preparation of chlorobenzene with its properties.
- (b) Explain the formation of free radicals, carbonium ion and carbanion.
- (c) Write a note on Witt's theory of colour and chemical constitution.
- (d) Explain the preparation of synthetic petrol.
- (e) Write a note on Ribose Nucleic acid.
- (f) Explain Cannizzaro reactions with mechanism.
- (g) Write the preparation of oxalic acid and its uses.
- 3** Answer the following (any **three**) **15**
- (a) Explain Nucleophilic substitution reaction with examples and its mechanism.
- (b) Write a note on composition of crude oil with proper identification of different fraction.
- (c) Write in detail the classification of dyes with examples.
- (d) Explain measurement of strength of acids with examples.
- (e) Define polymers. Classify it into different classes. Explain about biopolymers.

SECTION - II

- 4 (a) Fill in the blanks : 10
- (i) Thiophene is manufactured by passing a mixture of _____ and _____ through tube containing Al_2O_3 catalyst at 670 K.
 - (ii) Common soaps are _____ salts, of higher fatty acids.
 - (iii) _____ + NaOH \longrightarrow Soap + Glycerol.
 - (iv) _____ was first synthesized by Berthelot in 1873 bypassing acetylene through red-hot tube.
 - (v) Molecular formula of Glucose is _____.
 - (vi) Glucose is fermented by yeast to produce _____.
 - (vii) For oxidation reaction process we can use _____ as catalyst.
 - (viii) Polyethylene is available in the two forms of _____ and _____.
- (b) Explain conversion of higher aldose to lower aldose 5
and lower aldose to higher aldose with suitable examples.
- (c) Discuss naphthalene and its derivatives in detail. 5
- 5 Answer the following : (any five) 15
- (i) Sulphonation and sulphation.
 - (ii) Five member ring compound with example
 - (iii) Chemical reactions of benzene
 - (iv) Soaps and detergents
 - (v) Chloroform
 - (vi) Formaldehyde
 - (vii) Glucose

6 Answer any **three** :

15

- (i) Geometrical isomerism in tartaric acid
 - (ii) Chemistry of phenol
 - (iii) Chemistry of starch
 - (iv) Aldose to ketose and ketose to aldose
 - (v) Halogenation process.
-