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R—39—2017

FACULTY OF SCIENCE

B.Sc. (First Semester) EXAMINATION

MARCH/APRIL, 2017

(CBCS/CGPA Pattern)

CHEMISTRY

Paper CCC-I

(Organic and Inorganic Chemistry)

(MCQ & Theory)

(Monday, 27-3-2017)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

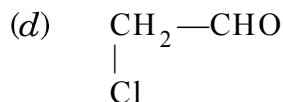
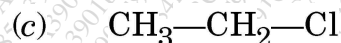
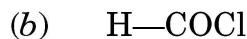
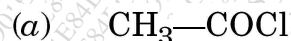
Maximum Marks—40

- N.B. :—**
- (i) Attempt *All* questions.
 - (ii) *All* questions carry equal marks.
 - (iii) Use OMR sheet for Question No. 1.
 - (iv) Calculator is allowed.
 - (v) Only one answer-sheet should be used for Sections A and B.

MCQ

1. Select the *correct* answer for each of the following multiple choice questions :

(i) IUPAC name of Methanayl chloride is :



(ii) \longleftrightarrow , Arrow indicates :

(a) Shifting of electron

(b) Shifting of proton

(c) Resonance structures

(d) Shifting of neutron

P.T.O.

- (iii) $(\text{CH}_3)_2\text{CuLi} + \text{CH}_3\text{—CH}_2\text{—Br} \longrightarrow ?$
- (a) Ethene (b) Ethane
(c) Propane (d) Butane
- (iv) 1, 3-Butadiene is treated with ethene, gives :
- (a) Cyclohexane (b) Cyclohexene
(c) Cyclohexadiene (d) Hexadiene
- (v) Oxymercuration-Demercuration follows addition.
- (a) Hofmann's (b) Markownikoff's
(c) Saytzeff's (d) Anti-Markownikoff's
- (vi) Which of the following is electrophile ?
- (a) $\ddot{\text{N}}\text{H}_3$ (b) $\text{H}_2\ddot{\text{O}}$
(c) $\overset{\ominus}{\text{O}}\text{H}$ (d) AlCl_3
- (vii) Ethene reacts with alkaline KMnO_4 yields :
- (a) Geminal diol (b) Vicinal diol
(c) Chlorohydrin (d) Acetonitrile
- (viii) Lowest ionization potential will be of :
- (a) Halogens (b) Inert gas
(c) *d*-block elements (d) alkali metals
- (ix) General electronic configuration of inner transition elements is :
- (a) $(n - 2)f^{1-14}(n - 1)d^1ns^2$
(b) $(n - 1)d^{1-10}ns^2$
(c) $ns^2np^6nd^{1-10}$
(d) $ns^2np^6nd^{1-10}(n - 1)f^{1-14}$

WT

(3)

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(x) The number of lone pair of electrons in XeF_2 , XeF_4 and XeF_6 molecule respectively is :

(a) 1, 2, 3

(b) 2, 1, 3

(c) 3, 2, 1

(d) 3, 1, 2

Theory

Section A

(Organic Chemistry)

2. Answer any *two* of the following :

(a) Give the classification of organic compound on the basis of functional groups.

(b) What are carbanions ? Give its preparation, structure and stability.

(c) Explain resonance and molecular orbital structure of 1, 3-butadiene.

(d) How will you prepare ethylene glycol from :

(i) Ethene

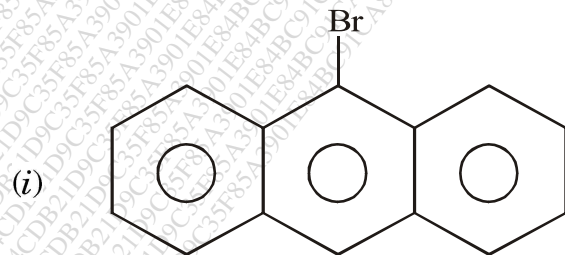
(ii) 1, 2-Dihaloethane,

and what is the action of acetyl chloride on glycerol ?

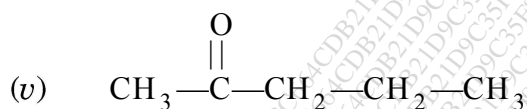
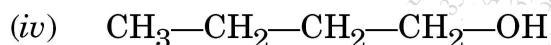
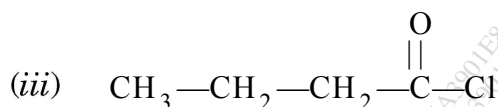
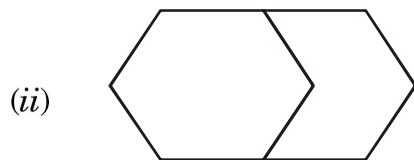
3. Answer any *two* of the following :

(a) Explain types of organic reactions.

(b) Give the IUPAC names of the following :



P.T.O.



(c) What are dienes ? Give its classification with suitable example.

(d) Write notes on :

(i) Kolbe's reaction

(ii) Dieckmann reaction.

Section B

(Inorganic Chemistry)

4. Answer any *two* of the following :

(a) Define electron affinity. Explain any *three* factors affecting on it. Give its periodic trends.

(b) Write the general characteristics of *p*-block elements.

(c) (i) Why is size of Cl^- greater than Cl atom while Na^+ is smaller than Na atom ?

(ii) Explain the formation of compounds of Nobel gases under excited conditions.

(d) Give any *two* preparation methods for XeF_2 and explain its structure.