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AO—42—2018

FACULTY OF SCIENCE

B.Sc. (Second Year) (Third Semester) EXAMINATION

MARCH/APRIL, 2018

(CBCS/CGPA)

CHEMISTRY

Paper VI

(Organic and Inorganic Chemistry)

(MCQ + Theory)

(Wednesday, 21-3-2018)

Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours

Maximum Marks—40

N.B. :— (i) Attempt All questions.

(ii) All questions carry equal marks.

(iii) Use separate answer sheet (OMR sheet) for MCQ
Question No. 1.

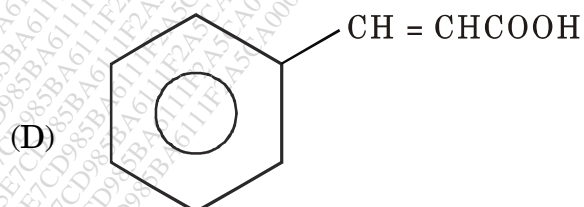
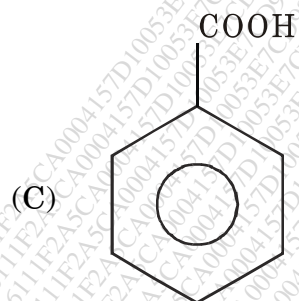
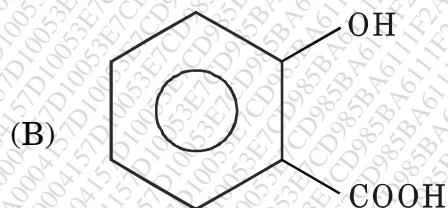
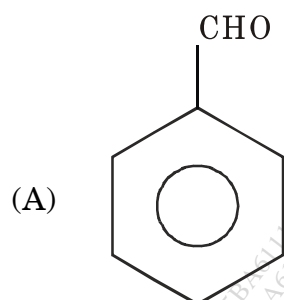
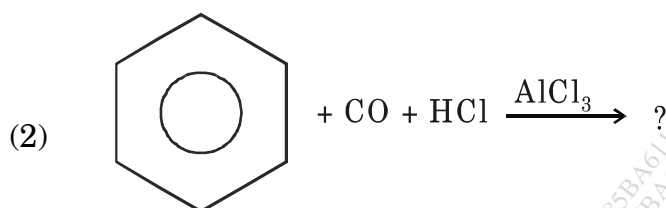
MCQ

10

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

- (1) Acetophenone on reduction with Zn-Hg and conc. HCl gives
- (A) Benzaldehyde
(B) Benzoyl alcohol
(C) Ethyl benzene
(D) Methyl benzene

P.T.O.



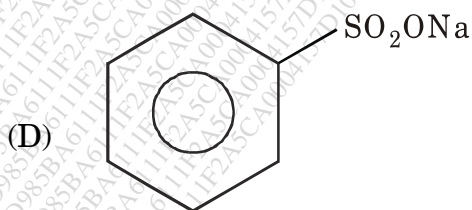
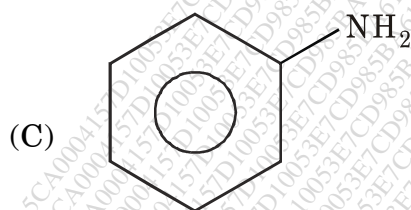
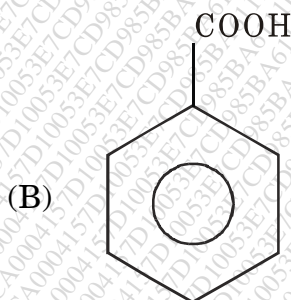
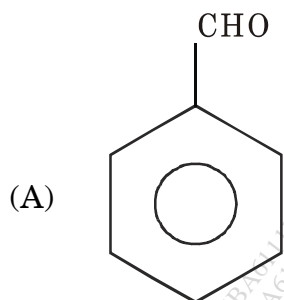
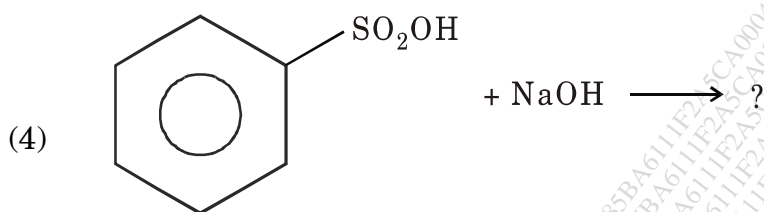
(3) Anthranilic acid on heating in presence of nitrous acid gives

- (A) o-nitrobenzoic acid
 (B) o-hydroxybenzoic acid
 (C) Benzoic acid
 (D) Aniline

WT

(3)

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(5) When dimethyl zinc reacts with ethanal gives

- (A) 2-propanol (B) 2-methyl-2-propanol
 (C) 1-propanol (D) None of these



- (A) $\text{CH}_3 - \text{O} - \text{C}_2\text{H}_5$
 (B) $\text{CH}_3 - \overset{\text{O}}{\parallel} \text{C} - \text{C}_2\text{H}_5$
 (C) CH_3COOH
 (D) $\text{CH}_3 - \overset{\text{O}}{\parallel} \text{C} - \text{CH}_2 - \overset{\text{O}}{\parallel} \text{C} - \text{OC}_2\text{H}_5$

P.T.O.

- (7) Natural fats and oils are of glycerol.
- (A) Diesters (B) Triesters
(C) Tetraesters (D) Monoesters
- (8) Water is called universal solvent because of
- (A) Its high dielectric constant
(B) Wide liquid range temp
(C) Plentiful abundance
(D) All of the above
- (9) When dil. NaOH is added to mixture solution of Fe^{3+} and Al^{3+} ion then :
- (A) Fe^{+++} ion gives brown ppt and Al^{+3} ion gives white gelatinous ppt which is soluble in excess of NaOH
(B) Fe^{3+} ion gives green ppt and Al^{+3} gives white ppt which is insoluble in excess of NaOH
(C) Both ions give brown ppt
(D) Both ions give white gelatinous ppt
- (10) Match the following :
- | Metal ion | Organic reagent |
|----------------------------------|-----------------------------|
| (i) Ni | (a) DMG |
| (ii) Al | (b) 1, 10 phenanthroline |
| (iii) Iron | (c) α -Benzoin oxime |
| | (d) 8-Hydroxyquinoline |
| (A) (i)—(a), (ii)—(c), (iii)—(b) | |
| (B) (i)—(b), (ii)—(c), (iii)—(d) | |
| (C) (i)—(b), (ii)—(a), (iii)—(d) | |
| (D) (i)—(a), (ii)—(d), (iii)—(b) | |

Theory

Section A : Organic Chemistry

2. Solve any *two* of the following : 10
- (a) Explain Benzoin condensation reaction with mechanism.
 - (b) How will you synthesize phthalic acid by :
 - (i) o-xylene
 - (ii) Naphthalene ?
 - (c) What are organolithium compounds ? How will you obtain from methyl lithium :
 - (i) Methane
 - (ii) 2-propanol ?
 - (d) Explain the iodine value and acid value.
3. Solve any *two* of following : 10
- (a) Explain Clemmensen reduction reaction with mechanism.
 - (b) (i) How will you prepare phenyl cyanide from benzene sulphonic acid ?
 - (ii) What are detergents ? Give the classification of detergents.
 - (c) How will you synthesize cyclohexanone pyrrolidine enamine from pyrrolidine and cyclohexanone morpholine enamine from morpholine ?
 - (d) Explain Gatterman reaction with mechanism.

Section B : Inorganic Chemistry

4. Solve any *two* of the following : 10
- (a) What is solubility product ? Explain its role in the separation of IIIrd A and IIIrd B group radicals.

P.T.O.

- (b) What are interfering radicals ? Explain the removal of phosphate and oxalate.
- (c) (i) Explain in brief the separation of Fe^{+3} and Al^{+3} ion with necessary chemical reactions.
- (ii) Write a note on dielectric constant property.
- (d) Explain the following reactions in Liquid Ammonia Solvent :
- (i) Ammonolysis
- (ii) Precipitation.