

This question paper contains 4 printed pages]

W—38—2018

FACULTY OF SCIENCE

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

OCTOBER/NOVEMBER, 2018

(CBCS/CGPA)

CHEMISTRY

Paper III

(Organic and Inorganic Chemistry)

(MCQ & Theory)

(Thursday, 11-10-2018)

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.

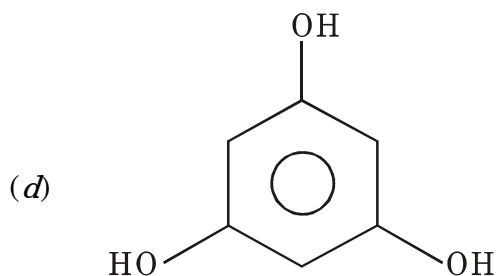
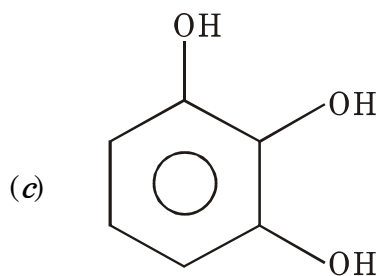
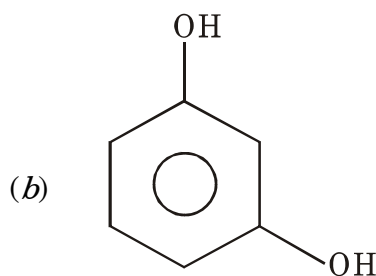
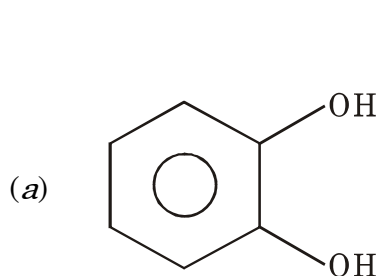
(iii) Use OMR sheet for Question No. 1.

(iv) Only one answer-sheet should be used for Sections A and B.

MCQ

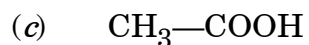
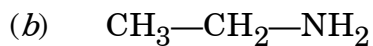
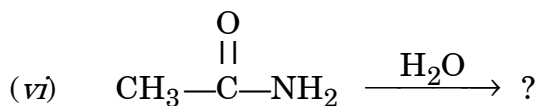
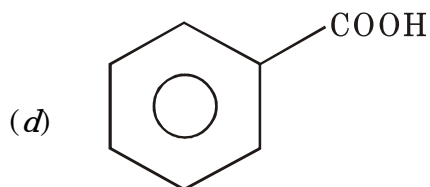
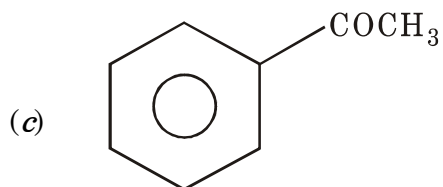
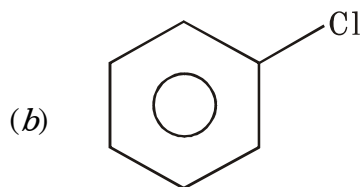
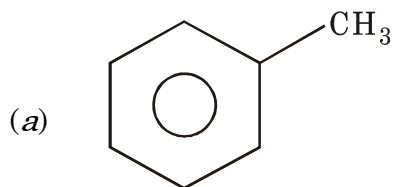
1. Select the *correct* answer for each of the following Multiple Choice Questions :

(i) Which of the following is pyrogallol ?



P.T.O.

- (ii) is an antiaromatic compound.
- (a) Furan (b) Pyrrole
(c) Naphthalene (d) Cyclobutadiene
- (iii) is a characteristic reaction of aromatic compounds.
- (a) Electrophilic substitution reaction
(b) Electrophilic addition reaction
(c) Nucleophilic substitution reaction
(d) Nucleophilic addition reaction
- (iv) $n \text{CH}_2 = \underset{\text{Cl}}{\text{CH}} \xrightarrow{\text{Peroxide}} ?$
- (a) Allyl chloride (b) Polyvinyl chloride
(c) Acetic acid (d) Acetyl chloride
- (v) Acetic anhydride reacts with benzene in presence of AlCl_3 to gives :



- (vii) Which of the following is coupling reaction ?
- (a) Perkin (b) Gattermann
(c) Hunsdiecker (d) Ullmann
- (viii) Increase in ionisation energy across a period generally increases :
- (a) Reducing character (b) Oxidising character
(c) Atomic size (d) Both (a) and (b)
- (ix) According to Lux-Flood concept an acid is :
- (a) Oxide ion donor (b) Oxide ion acceptor
(c) Hydride ion donor (d) Hydride ion acceptor
- (x) H_2O is :
- (a) Lewis base (b) Lowry-Bronsted base
(c) Both (a) and (b) (d) None of these

Theory

Section A

(Organic Chemistry)

2. Answer any *two* of the following :
- (a) What are aromatic compounds ? Give their sources.
- (b) Explain acidic nature of phenol and compare the acidity of phenol with ethanol.
- (c) Write a note on the following :
- (i) Hunsdiecker reaction
(ii) Balz-Schiemann reaction.
- (d) How will you prepare acetic anhydride from :
- (i) Sodium acetate
(ii) Acetic acid ?
- What is the action of ammonia on acetic anhydride ?

3. Answer any *two* of the following :
- (a) Explain Birch reduction with mechanism.
 - (b) How will you prepare ortho and para hydroxy acetophenone from phenyl acetate ? Explain with mechanism.
 - (c) What are haloalkenes ? Explain resonance in vinyl chloride and give their preparation from ethyne.
 - (d) How will you convert the following :
 - (i) Vinyl chloride to polyvinyl chloride
 - (ii) Benzene diazonium chloride to chlorobenzene
 - (iii) Benzene to nitrobenzene
 - (iv) Benzene to acetophenone
 - (v) Ethanamide to ethanoic acid.

Section B

(Inorganic Chemistry)

4. Solve any *two* of the following :
- (a) Discuss the diagonal relationship between B and Si.
 - (b)
 - (i) Give the variation in oxidizing and reducing properties of P-block elements.
 - (ii) Define acids and bases according to Cady-Elsey concept.
 - (c) Give the characteristics of hard and soft acids.
 - (d) Explain Lewis and Bronsted-Lowry concept of acids and bases.