

Name: _____						
Subject: Chemistry		Class: 12 <sup>th</sup>	Time: 60 minutes	Total Marks:	30	
Chapter No.9		MJDEXPERT.COM			Obtained marks	

**Note:** Please attempt any 7 short questions from Question 2. Also, attempt both parts (a and b) of Question 3. Cutting and removal of any content is strictly prohibited.

### Objective-Section

**Q. 1 Encircle the correct answer by filling the appropriate circle. (8x1=8)**

- The C — C bond length in benzene is  
(A) 1.32 °A (B) 1.397 °A (C) 1.20 °A (D) 1.54 °A
- The catalyst used for the halogenation of benzene is  
(A) FeX<sub>3</sub> (B) AlCl<sub>3</sub> (C) Pt (D) Ni
- M-Chlorobenzene is prepared by  
(A) Nitration of Chloro benzene (B) Nitration of Benzene  
(C) Chlorination of nitrobenzene (D) Nitration of m-Chloro benzene
- During nitration of benzene the active nitrating agent is  
(A) NO<sub>3</sub> (B) NO<sub>2</sub><sup>+</sup> (C) NO<sub>2</sub><sup>-</sup> (D) HNO<sub>3</sub>
- During Sulphonation of benzene the active sulphonating agent is  
(A) SO<sub>3</sub> (B) SO<sub>3</sub> (C) HSO<sub>4</sub> (D) H<sub>2</sub>SO<sub>4</sub>
- Which one is not a meta directing group?  
(A) -COOH (B) -CHO (C) -COR (D) -NH<sub>2</sub>
- One of the following can be used as a catalyst in Friedel- Crafts reactions:  
(A) AlCl<sub>3</sub> (B) NaCl (C) H<sub>2</sub>SO<sub>4</sub> (D) HNO<sub>3</sub>
- The extra-ordinary stability of benzene molecule is due to:  
(a) cyclic structure (b) large delocalization pi electrons  
(c) that it gives addition reactions (d) that it has three alternate single and double bonds

### Subjective-Section

**Q.2 Write short answers of any seven of the following questions: (7x2=14)**

- What are polycyclic aromatic compounds?
- Define Resonance, Draw different contributing structures of benzene
- Give two reactions that show that benzene is an unsaturated hydrocarbon?
- How does phenol can be converted to benzene?
- What is Wurtz-Fittig reaction? Give an example.
- Write the mechanism of Sulphonation of Benzene.
- How will you prepare m-chloronitrobenzene from benzene in two steps?
- Why is Benzene less reactive than ethene but more reactive than ethane?

**Q.No.3 Long Question: (4+4=8)**

- Explain structure of Benzene on the basis of Atomic orbital treatment
- How Benzene reacts with
  - Br<sub>2</sub> (in presence of sun light)
  - H<sub>2</sub>
  - Cl<sub>2</sub> (in presence of FeCl<sub>3</sub>)
  - CH<sub>3</sub>Cl (in presence of AlCl<sub>3</sub>)