



## JEE Main Online Exam 2019

### Questions & Solutions

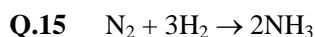
9<sup>th</sup> April 2019 | Shift - I

(Memory Based)

#### CHEMISTRY

- Q.1** Between the given element maximum difference in I<sup>st</sup> and II<sup>nd</sup> IE is -  
(1) Sc (2) Ba (3) Ca (4) K  
**Ans.** [4]
- Q.2**  $[\text{Cr}(\text{H}_2\text{O})_6]^{+3}$  which of the d-orbitals are used in hybridization -  
(1)  $d_{xy}, d_{z^2}$  (2)  $d_{x^2-y^2}, d_{z^2}$  (3)  $d_{xy}, d_{x^2-y^2}$  (4)  $d_{xz}, d_{z^2}$   
**Ans.** [2]
- Q.3** If Mg powder is heated in air which of the following is obtained -  
(1) MgO,  $\text{Mg}_3\text{N}_2$  (2) MgO (3)  $\text{Mg}_3\text{N}_2, \text{Mg}(\text{NO}_2)_2$  (4) MgO,  $\text{Mg}(\text{NO}_2)_2$   
**Ans.** [1]
- Q.4**  $\text{F}_2, \text{C}_2, \text{NO}$  and  $\text{O}_2$  which of the above molecule is most stable in anionic form -  
(1)  $\text{F}_2$  (2)  $\text{C}_2$  (3) NO (4)  $\text{O}_2$   
**Ans.** [2]
- Q.5** If  $\text{CO}_2$  is released in environment it results in -  
(1) Global warming (2) Ozone depletion (3) Smog (4) All of the above  
**Ans.** [1]
- Q.6** The structure of  $\text{C}_{60}$  fullerene contains hexagon and pentagon -  
(1) 20, 20 (2) 12, 12 (3) 20, 12 (4) 14, 16  
**Ans.** [3]
- Q.7**  $\text{N}_2\text{O}_2, \text{NO}, \text{NO}_2, \text{N}_2\text{O}$  arrange the increasing order of O.S. of nitrogen -  
(1)  $\text{N}_2\text{O}, \text{NO}, \text{N}_2\text{O}_3, \text{NO}_2$  (2)  $\text{N}_2\text{O}, \text{NO}_2, \text{N}_2\text{O}_3, \text{NO}$   
(3)  $\text{NO}_2, \text{N}_2\text{O}_3, \text{N}_2\text{O}_3, \text{NO}$  (4)  $\text{N}_2\text{O}_3, \text{NO}, \text{N}_2\text{O}, \text{NO}_2$   
**Ans.** [1]



In which case  $H_2$  is limiting Reagent -

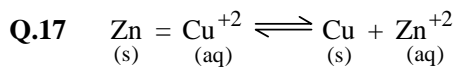
	$N_2$	$H_2$ (in gm)
(1)	28	60
(2)	28	12
(3)	14	3
(4)	28	3

**Ans.** [4]

V.P. of B = 700 mmHg

If x and y are mole fractions in solution and vapour state which of the following is correct option -

- (1)  $\frac{x_A}{x_B} = \frac{y_A}{y_B}$                       (2)  $\frac{x_A}{x_B} > \frac{y_A}{y_B}$                       (3)  $\frac{x_A}{x_B} < \frac{y_A}{y_B}$                       (4) none

**Ans.** [3]

$$E^{\circ}_{cell} = 2 \text{ volt}$$

$$F = 96000$$

Calculate  $\Delta G^{\circ}_{cell}$  in kJ/mole -

- (1) - 270                      (2) - 384                      (3) - 760                      (4) - 200

**Ans.** [2]**Q.18**

Element	a	b
X	4	0.2
y	1.2	0.1
z	5	0.1
k	6.7	0.01

- (1) X                      (2) Y                      (3) Z                      (4) K

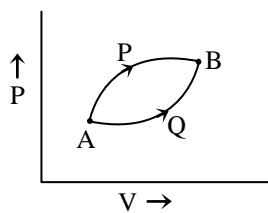
**Ans.** [4]**Q.19** Match the following -

Catalyst	Product
(A) $V_2O_5$	(i) Polyethylene
(B) $TiCl_4/\Delta l(Me)_3$	(ii) Ethanol
(C) $PdCl_2$	(iii) $H_2SO_4$
(D) Iron oxide	(iv) $NH_3$

(1)	(A)	(B)	(C)	(D)
(2)	(ii)	(i)	(iv)	(iii)
(3)	(iii)	(i)	(ii)	(iv)
(4)	(iv)	(ii)	(i)	(iii)
(5)	(iv)	(iii)	(ii)	(i)

**Ans.** [2]

**Q.20**


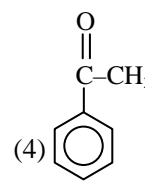
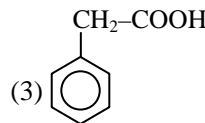
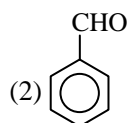
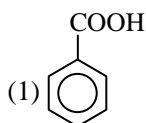
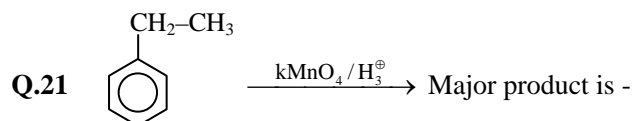
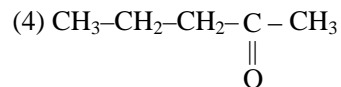
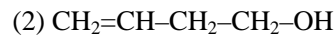
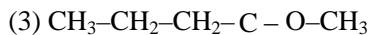
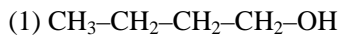
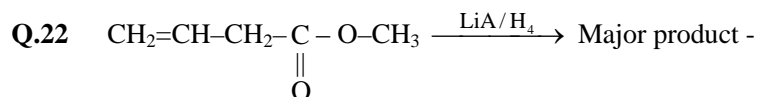
Which is correct for path P &amp; Q.

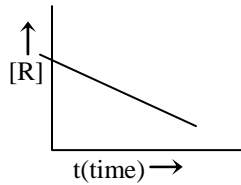
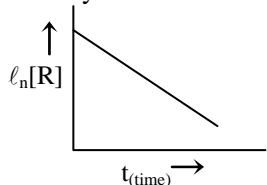
(1)  $q_p < q_Q$ ,  $\Delta U_p = \Delta U_Q$

(3)  $q_p = q_Q$ ;  $\Delta U_p < \Delta U_Q$

(2)  $q_p > q_Q$ ;  $\Delta U_p = \Delta U_Q$

(4)  $q_p = q_Q$ ;  $\Delta U_p = \Delta U_Q$

**Ans.** [2]

**Ans.** [1]

**Ans.** [2]

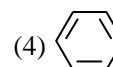
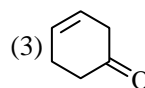
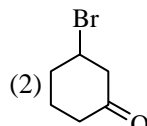
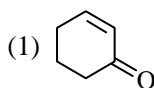
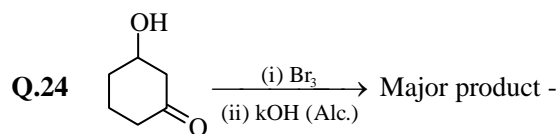
**Q.23** Identify the order of reaction  $R \rightarrow P$ 


(1) 0, 1

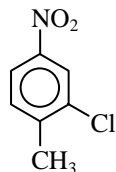
(2) 1, 2

(3) 1, 0

(4) 1, 1

**Ans.** [3]

**Ans.** [1]

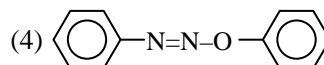
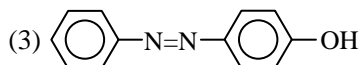
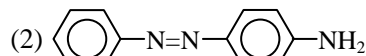
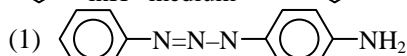
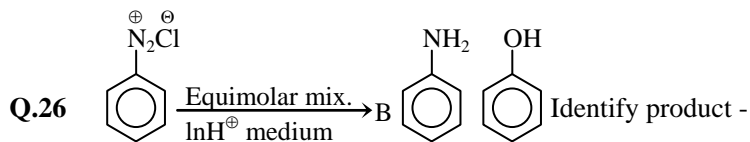
**Q.25** IUPAC name of the following compound :



- (1) 2-chloro-1-methyl-4-nitrobenze  
 (3) 2-methyl-1-chloro-5-nitrobenzene

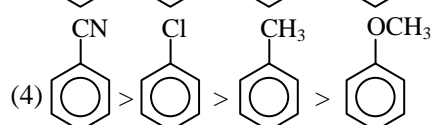
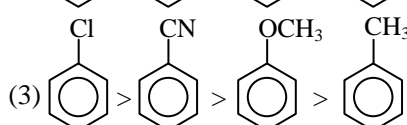
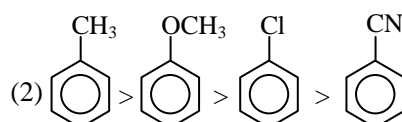
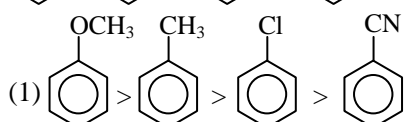
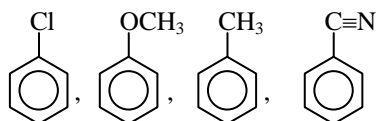
- (2) 1-chloro-2-methyl-5-nitrobenzene  
 (4) 1-nitro-4-chloro-6-methylbenzene

**Ans.** [1]

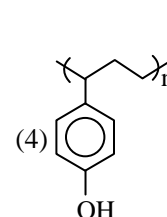
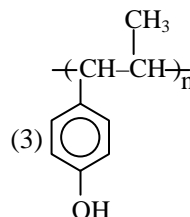
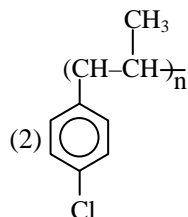
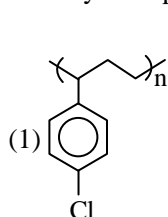
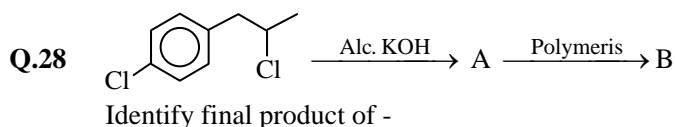


**Ans.** [2]

**Q.27** Order of rate of ESR

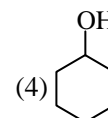
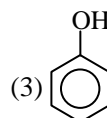
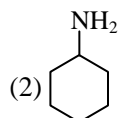
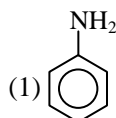


**Ans.** [1]



**Ans.** [3]

**Q.29** Which compound does not react with HCl, reacts with NaOH and decolourine Br<sub>2</sub> water ?



**Ans.** [3]