

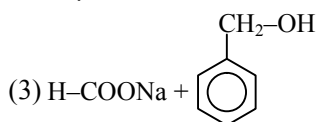
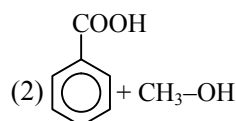
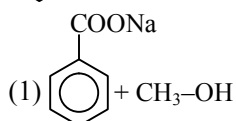
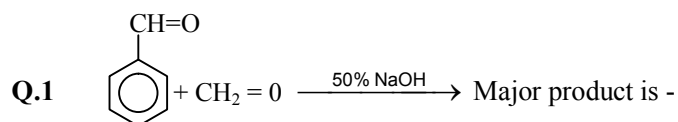
# JEE Main Online Exam 2019

## Questions & Solutions

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

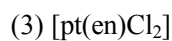
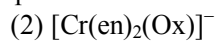
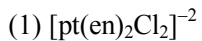
(Memory Based)

### CHEMISTRY



**Ans.** [3]

**Q.2** In which of the following complex cis-trans isomerism is possible -



**Ans.** [1]

**Q.3** Which of the following is a condensation polymer ?

(1) BUNA-S

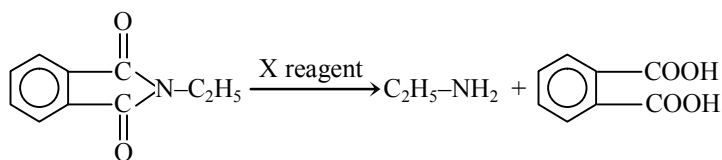
(2) NYLON-66

(3) TEFLON

(4) BUNA-N

**Ans.** [2]

**Q.4** Phthalamide



X is -

(1) CO<sub>2</sub>

(2) NH<sub>2</sub>-NH<sub>2</sub>

(3) H<sub>2</sub>O

(4) C<sub>2</sub>H<sub>5</sub>-Cl

**Ans.** [3]

**Q.5** In Amylopectin type of linkage -

(1) α ± 14 and α-1, 6 glycosidic linkage

(2) only α-1,4 glycosidic linkage

(3) only α-1,4 glycosidic linkage

(4) α-1,1 glycosidic linkage

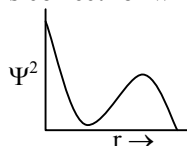
**Ans.** [1]

**Q.6** Which of the following does not have s-s linkage ?

- (1)  $\text{H}_2\text{S}_2\text{O}_5$                       (2)  $\text{H}_2\text{S}_2\text{O}_7$                       (3)  $\text{H}_2\text{S}_2\text{O}_3$                       (4)  $\text{H}_2\text{S}_2\text{O}_6$

**Ans.** [2]

**Q.7** Graph is correct for which orbital :



- (1) 2s                                      (2) 1s                                      (3) 3s                                      (4) 2p

**Ans.** [1]

**Q.8**

gases	a	b
x	200	0.04
y	400	0.01
z	400	0.02
m	200	0.03

Correct statement is -

- (1) compressibility of y is greater than x and volume of x is less than y.  
(2) compressibility of y is greater than x and volume of x is greater than y.  
(3) both  
(4) none

**Ans.** [2]

**Q.9** Which statement is correct -

- (a) Le Chatelier's principle is not applicable for common Ion effect.  
(b) pH of solution mixed with 0.1M, 400 ml  $\text{H}_2\text{SO}_4$  and 0.1 M, 400 ml NaOH is equal to 1.3.  
(c) HA weak acid  $K_a = 10^{-5}$ , pH = 5 then  $\alpha$  will be equal to 50 %.  
(d) Ionic product of water is depends upon temperature.
- (1) a, b                                      (2) b, d                                      (3) a, b, c                                      (4) a, b, c, d

**Ans.** [2]

**Q.10** 0.6 gm Urea is present in 360 gm water if vapour pressure of water is 35 mm Hg, then calculate V.P. of solution -

- (1) 34.9                                      (2) 30                                      (3) 28.2                                      (4) 27

**Ans.** [1]

**Q.11** Correct statement is -

- (1) Conductivity increases with concentration and  $\lambda_m$  increases with concentration.  
(2) both decreases with concentration  
(3) conductivity increases with increase in concentration and  $\lambda_m$  decreases with increase in concentration.  
(4) none

**Ans.** [3]

- Q.12** Reaction is always (at all temperature) spontaneous -  
(1)  $\Delta H = +$ ,  $\Delta S = +$                       (2)  $\Delta H = -$ ,  $\Delta S = -$                       (3)  $\Delta H = -$ ,  $\Delta S = \oplus$                       (4)  $\Delta H = \oplus$ ,  $\Delta S = \ominus$   
**Ans.** [3]

- Q.13** In Freundlich isotherm

$$\frac{x}{m} = KP^{1/2}$$

Correct statement is -

- (1) adsorption increases with increase in pressure and temperature.  
(2) adsorption increases with decrease in pressure and temperature.  
(3) adsorption increases with increase with pressure and decrease in temperature.  
(4) adsorption increases with decreases in pressure and increase in temperature.

**Ans.** [3]

- Q.14** A hydrocarbon  $C_xH_y$  of 10 ml on combustion by 55 ml  $O_2$  provide 40 ml  $CO_2$ , then Hydrocarbon is -  
(1)  $C_4H_8$                       (2)  $C_4H_6$                       (3)  $C_4H_{10}$                       (4)  $C_2H_5$

**Ans.** [2]

- Q.15** Alloy used in manufacturing of aircraft -

- (1) Mg + Al                      (2) Mg + Sn                      (3) Mg + Fe                      (4) Mg + Mn

**Ans.** [1]

- Q.16**  $CO + H_2$  is known as -

- (1) Syn. gas                      (2) Natural gas                      (3) Laughing gas                      (4) Marsh gas

**Ans.** [1]

- Q.17** Match the following element with the process of extraction -

Process	Element
(a) Mond	(i) Ga
(b) Van Arkel	(ii) Sn
(c) Liquation	(iii) Ni
(d) Zone refining	(iv) Zr

- (1) a-(ii), b-(i), c-(iii), d(iv)                      (2) a-(iii), b-(iv), c-(ii), d(i)  
(3) a-(ii), b-(iii), c-(i), d(iv)                      (4) a-(iii), b-(iv), c-(i), d(ii)

**Ans.** [2]

- Q.18** Give correct order of spin magnetic moment -

- (1)  $Ti^{+2} > Ti^{+3} > Sc^{+3} > V^{+2}$                       (2)  $Ti^{+2} > Sc^{+3} > V^{+2} > Ti^{+3}$   
(3)  $Ti^{+3} > Sn^{+3} > V^{+2} > Ti^{+2}$                       (4)  $V^{+2} > Ti^{+2} > Ti^{+3} > Sc^{+3}$

**Ans.** [4]

- Q.19** Which region of earth clouds are formed and Human being reside -

- (1) Stratosphere, Troposphere                      (2) Stratosphere, Stratosphere  
(3) Troposphere, Troposphere                      (4) Troposphere, Stratosphere

**Ans.** [3]

**Q.20** Column chromatography is based on -  
 (1) Solid adsorption (2) Solid absorption (3) Gravitational force (4) Distillation

**Ans.** [1]

**Q.21** When  $O_2 \rightarrow O_2^-$ , then  $e^-$  will move in to which orbital -  
 (1)  $\pi 2p_x$  (2)  $\pi^* 2p_x$  (3)  $\sigma 2p_2$  (4)  $\sigma^* 2p_2$

**Ans.** [2]

**Q.22** Which is the correct decreasing order of wavelength absorbed:  
 $[Cr(NH_3)_6]^{+3}$  (a),  $[Cr(NH_3)_5Cl]^{+2}$  (b),  $[Cr(NH_3)_5(H_2O)]^{+3}$  (c)  
 (1)  $a > b > c$  (2)  $a > c > b$  (3)  $b > c > a$  (4)  $c > a > b$

**Ans.** [3]

**Q.23** Which of the following is isoelectronic series -  
 (1)  $Li^{+1}, O^{-2}, Mg^{+2}$  (2)  $Mg^{+2}, Na^+, F^-, N^{-3}$  (3)  $Ca^{+2}, Mg^{+2}, Cl^-$  (4)  $Cl^-, O^{-2}, Mg^{+2}$

**Ans.** [2]

**Q.24** The order of catenation property amongst 14<sup>th</sup> group elements is -  
 (1)  $C < Si < Ge < Sn$  (2)  $C > Si > Ge > Sn$   
 (3)  $C \gg Si \gg Ge > Sn$  (4)  $C \approx Si \gg Ge \approx Sn$

**Ans.** [3]

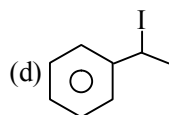
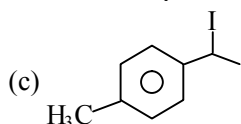
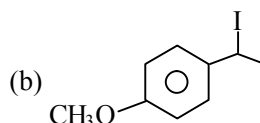
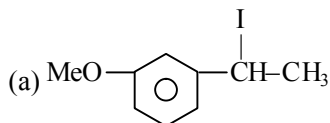
**Q.25** 
$$CH_3-\overset{\overset{OH}{|}}{CH}-CH_2-CH_2-NH_2 \xrightarrow[(C_2H_5)_3N]{\begin{matrix} O \\ || \\ H-C-O-C_2H_5 \end{matrix}}$$
 Product  
 (1)  $CH_3-CH=CH-CH_2-NH_2$  (2)  $CH_3-\overset{\overset{O-C-CH_3}{|}}{CH}-CH_2-CH_2-NH_2$   
 (3)  $CH_3-\overset{\overset{OH}{|}}{CH}-CH=CH_2$  (4)  $CH_3-\overset{\overset{OH}{|}}{CH}-CH_2-CH_2-NH-\overset{\overset{O}{||}}{C}-H$

**Ans.** [4]

**Q.26**  $CH_3-\overset{\overset{CH_3}{|}}{CH}-\overset{\overset{Cl}{|}}{CH}-CH_3 \xrightarrow{CH_3OH}$  Major product  
 (1)  $CH_3-\overset{\overset{OCH_3}{|}}{C}-CH_2-CH_3$  (2)  $CH_3-\overset{\overset{CH_3OCH_3}{|}}{CH}-CH-CH_3$   
 (3)  $CH_3-\overset{\overset{CH_3}{|}}{CH}-\overset{\overset{OCH_3}{|}}{CH}-CH_3$  (4)  $CH_3-\overset{\overset{CH_3}{|}}{CH}-CH=CH_2$

**Ans.** [1]

**Q.27** Order of rate of  $S_N1$



(1)  $a > b > c > d$

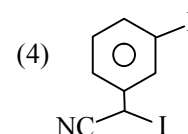
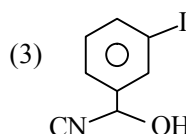
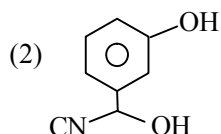
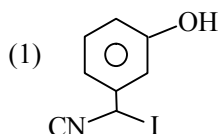
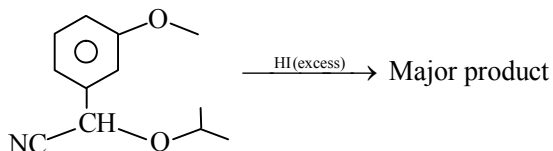
(2)  $b > c > a > d$

(3)  $b > c > d > a$

(4)  $d > c > b > a$

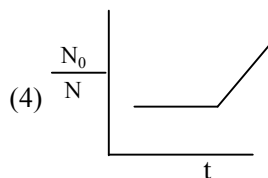
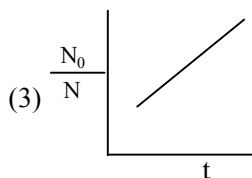
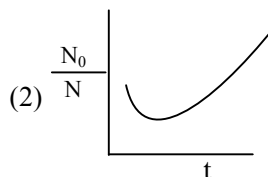
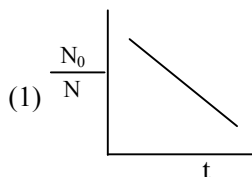
**Ans.** [3]

**Q.28**



**Ans.** [1]

**Q.29** Growth of bacteria is separated by  $Nt = N_0 e^{\lambda t}$  After one hour a drug is given which decreases bacterial growth as  $\frac{dN}{dt} = -5N^2$  Which one graph is correct -



**Ans.** [2]

**Q.30** Two radioactive substance having same initial number of nuclei disintegration constant of one substance is  $\lambda$ . How much time taken to nuclei become  $\frac{1}{e}$ .

(1)  $\frac{1}{\lambda}$

(2)  $\frac{1}{9\lambda}$

(3)  $\frac{1}{10\lambda}$

(4)  $\frac{1}{2\lambda}$

**Ans.** [2]