

# CHEMISTRY

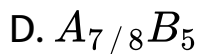
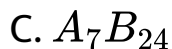
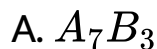
## NTA MOCK TESTS ENGLISH

### NEET MOCK TEST 10

#### Chemistry

1. In a *f. c. c.* arrangement of  $A$  and  $B$  atoms, where  $A$  atoms are at the corners of the unit cell and  $B$  atoms at the face – centres, one of the  $A$  atom is

missing from one corner in each unit cell. The formula of compound is :



**Answer:**



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2. In a first order reaction the concentration of reactant decreases from  $800 \text{ mol/dm}^3$  to  $50 \text{ mol/dm}^3$

in  $2 \times 10^2 s$ . The rate constant of reaction in  $s^{-1}$  is

A.  $2 \times 10^{-4} s^{-1}$

B.  $1.386 \times 10^{-2} s^{-1}$

C.  $3.45 \times 10^5 s^{-1}$

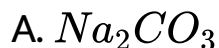
D.  $2 \times 10^4 s^{-1}$

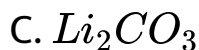
**Answer:**



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3.  $CO_2$  cannot be obtained by heating





**Answer:**



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4. A gas can be compressed to a fraction of its volume. The same volume of a gas can be spread all over a room. The reason for this is that

A. The volume occupied by molecules of a gas is negligible as compared to the total volume of

the gas

B. Gases consists of molecules which are in a state of random motion

C. Gases consist of molecules having very large-molecular space which can be reduced or increased

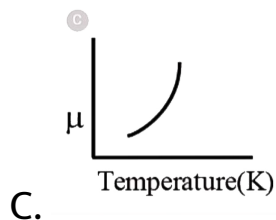
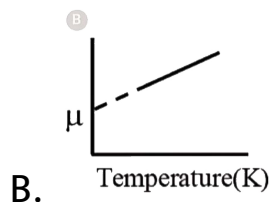
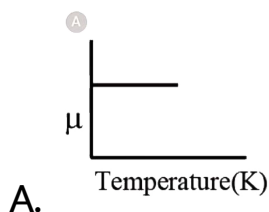
D. none of these

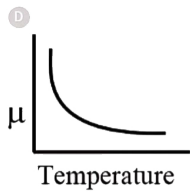
**Answer:**



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5. An ideal gas is initially at temperature  $T$  and volume  $V$ . ITS volume is increased by  $\Delta V$  due to an increase in temperature  $\Delta T$ , pressure remaining constant. The quantity  $\delta = \Delta V / V \Delta T$  varies with temperature as





**Answer:**



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**6. Which of the vitamins given below is water soluble ?**

A. Vitamin K

B. Vitamin C

C. Vitamin D

D. Vitamine E

**Answer:**



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7. What is the composition of the vapour which is in equilibrium at  $30^\circ\text{C}$  with a benzene-toluene solution with a mole fraction of benzene of (a) 0.400 and (b) 0.600?

$$P_b^\circ = 119 \text{ torr}, P_t^\circ = 37.0 \text{ torr}$$

A. 0.237

B. 0.367

C. 0.428



D. 0.318

**Answer:**



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**8.** A compound that easily undergoes bromination is

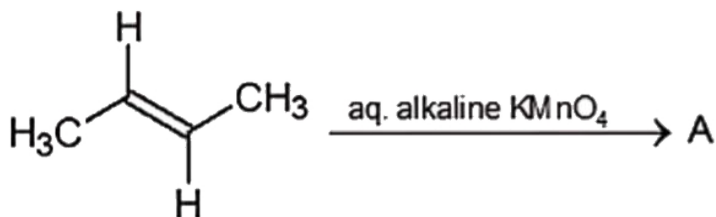
A. Phenol

B. Toluene

C. Benzene

D. Benzoic acid

**Answer:**



9.

Which one of the following is true about this reaction

?

- A. A is meso-2,3-butanediol formed by syn addition
- B. A is meso -2,3-butanediol formed by anti-additon
- C. A is a racemic mixture of d and l-2,3-butanediol formed by anti-addition

D. A is a racemic mixture of d and l-2,3-butanediol  
formed by syn addition

**Answer:**



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10. If  $Na^+$  ion is larger than  $Mg^{2+}$  ion and  $S^{2-}$  ion is larger than  $Cl^-$  ion, which of the following will be least soluble in water?

A. Sodium chloride

B. Sodium sulphide

C. Magnesium chloride

D. Magnesium sulphide

**Answer:**



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**11.** The chemical processes in the production of steel from haematite ore involve

A. Reduction

B. Oxidation

C. Reduction followed by oxidation

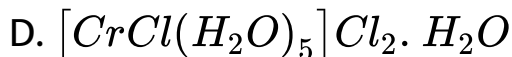
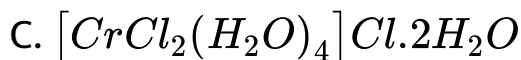
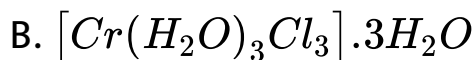
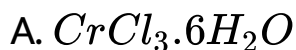
D. Oxidation followed by reduction

Answer:



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12. Which of the following is most likely structure of  $CrCl_3 \cdot 6H_2O$  if  $1/3$  of total chlorine of the compound is precipitated by adding  $AgNO_3$  to its aqueous solution?



**Answer:**



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**13.** The radiation with maximum frequency is

- A. X-rays
- B. Radio waves
- C. UV rays
- D. IR rays

**Answer:**



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14. Which of the following factors is of no significance for roasting sulphide ores to the oxide and not subjecting the sulphide ores in carbon reduction directly ?

A.  $CO_2$  is more volatile than  $CS_2$

B. Metal sulphides are thermodynamically more stable than  $CS_2$

C.  $CO_2$  is thermodynamically more stable than  $CS_2$

D. Metal sulphides are less stable than the corresponding oxides

**Answer:**



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**15.** When benzene or its derivative is treated with carbon monoxide and hydrogen chloride in the presence of anhydrous aluminium chloride, it gives

- A. Benzaldehyde
- B. Benzophenon
- C. Benzyl alcohol
- D. Benzal chloride

**Answer:**





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16. Which of the following is a true nut?

- A. Two fused cyclic system
- B. Three fused cyclic system
- C. Four fused cyclic system
- D. Five fused cyclic system

**Answer:**



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17. Which of the following is NOT a tranquilizer ?

- A. Meprobamate
- B. Equanil
- C. Chlordiazepoxide
- D. Bromopheniramine

**Answer:**



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18.  $N_0/2$  atoms of  $X_{(g)}$  are converted into  $X_{(g)}^{\oplus}$  by energy  $E_1$ ,  $N_0/2$  atoms of  $X_{(g)}$  are converted into

$X_{(g)}^{\ominus}$  by energy  $E_2$ . Hence ionisation potential and electron affinity of  $X_{(g)}$  per atom are

A.  $\frac{2E_1}{N_0}, \frac{2(E_1 - E_2)}{N_0}$

B.  $\frac{2E_1}{N_0}, \frac{2E_2}{N_0}$

C.  $\frac{(E_1 - E_2)}{N_0}, \frac{2E_2}{N_0}$

D. None is correct

**Answer:**



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**19.** Nitrogen forms  $N_2$  but phosphorus forms  $P_4$  due to

A. Triple bond is present between phosphorus atom

B.  $p\pi - p\pi$  bonding is strong in nitrogen

C.  $p\pi - p\pi$  bonding is weak in nitrogen

D. Multiple bond is formed easily

**Answer:**



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**20.** An aqueous solution of an acid is so weak that it can be assumed to be practically unionised, boiled at  $100.4^{\circ}C$  25 ml of this solution was neutralised by 38.5

ml of 1 N solution of NaOH. Calculate basicity of the acid if  $k_b(H_2O) = 0.52 \text{ k mol}^{-1} \text{ kg}$ . Assume molality is equal to molarity.

A. 10.3

B. 11.3

C. 11

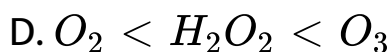
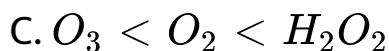
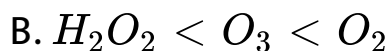
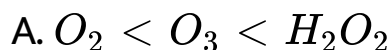
D. 4.3

**Answer:**



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21. The correct order in which the O-O bond length increases in the following is

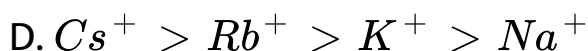
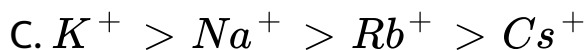
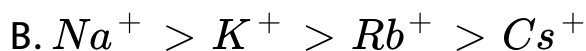
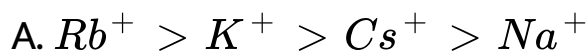


**Answer:**



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22. The sequence of ionic mobility in the aqueous solution is

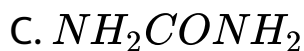
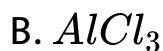
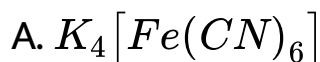


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23. For which of the following van't Hoff factor cannot be greater than unity ?



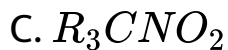
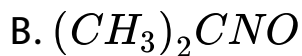
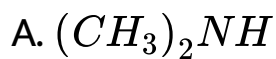
**Answer:**



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24. Which of the following exhibits tautomerism ?





**Answer:**



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**25.** Among the following solids, Schottky defect is NOT observed in-



C. KCl

D. CsCl

**Answer:**



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**26.** Which of the following relations gives the value of

$n =$

A.  $\frac{(\text{"Molecular Mass"})}{(\text{"Atomic Mass"})}$

B.  $\frac{\text{Molecular Mass}}{\text{Empirical Mass}}$

C.  $\frac{\text{Empirical Mass}}{\text{Molecular Mass}}$

D. None of these

Answer:



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27. The following data is obtained during the first order thermal decomposition of

$2A(g) \rightarrow B(g) + C(s)$  at constant volume and temperature

S.No.	Time	Total pressure
1.	At the end of 10 minutes	300
2.	After completion	200

The rate constant in  $\text{min}^{-1}$  is

A. 0.0693

B. 69.3

C. 6.93

D.  $6.93 \times 10^{-4}$

**Answer:**



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**28.** Which of the following is the most basic oxide?

A.  $SeO_2$

B.  $Al_2O_3$

C.  $Sb_2O_3$

D.  $Bi_2O_3$

**Answer:**



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**29.** Which of the following is a true nut?

- A. Propene is the major product
- B. Ethane and  $C_3H_7N(CH_3)_2$  are the only product
- C. Ethene and propene obtained while ethene as the major product
- D. Equimolar amounts of ethane and propene are obtained

**Answer:**



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**30.** Which of the following is a true nut?

- A. pyridinium chloro-chromate
- B. chromic anhydride in glacial acetic acid
- C. acidic dichromate
- D. acidic permanganate

**Answer:**



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31. On oxidation of  $S_2O_3^{2-}$  by  $MnO_4^-$  in neutral aqueous medium, the oxidation state of S would change from :

A. +6 to -2

B. -2 to +2

C. +2 to +6

D. +4 to +6

**Answer:**



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**32.** Consider the reaction

$2NO(g) + O_2(g) \rightarrow 2NO_2(g)$ , Predict whether the reaction is spontaneous at 298 K.

$\Delta_f G(NO) = 86.69 \text{ kJ/mol}$ ,  $\Delta_f G(NO_2) = 51.84 \text{ kJ/mol}$

- A. Yes , Spontaneous
- B. No, the reaction is Non-spontaneous
- C. Equilibrium
- D. Cannot predict

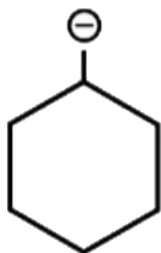
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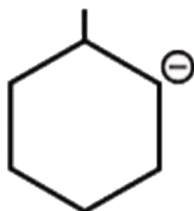
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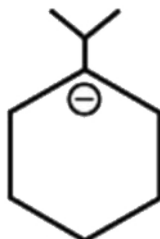
33. Determine the stability order of given carbanions :



i.



ii.



iii.

A.  $I > II > III$

B.  $III > I > II$

C.  $III > II > I$

D.  $II > III > I$

Answer:



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34. Which of the following relations is correct ?

A. Antibiotic

B. Tranquilizer

C. Antiseptic

D. Analgesic

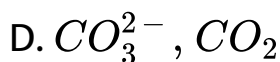
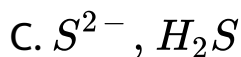
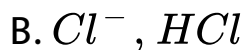
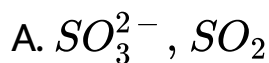
Answer:



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35.  $[X] + H_2SO_4 \rightarrow [Y]$  a colourless gas with irritating smell  $[Y] + K_2Cr_2O_7 + H_2SO_4 \rightarrow$  green

solution  $[X]$  and  $[Y]$  are



**Answer:**



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**36.** An acid solution of  $pH = 6$  is diluted 1000 times, the  $pH$  of the final solution is

A. 6.01

B. 9

C. 3.5

D. 6.99

**Answer:**



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**37.** Periodic classification of elements based on atomic volume curve was given by

A. Newland

B. Lothar Mayer

C. Dobereiner

D. Medeleev

**Answer:**



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**38.** Which of the following reagents convert the propene to 1-propanol?

A.  $H_2O$ ,  $H_2SO_4$

B. Aqueous KOH

C.  $MgSO_4$ ,  $NaBH_4 / H_2O$

D.  $B_2H_6$ ,  $H_2O_2$ ,  $OH^-$

**Answer:**



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**39.** The conversion of ethyl chloride into diethyl ether takes place by

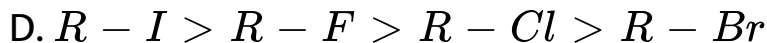
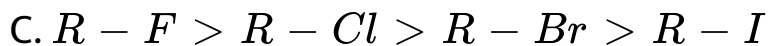
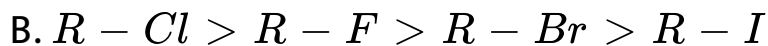
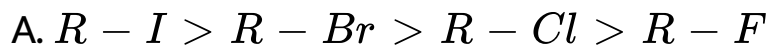
- A. Williamson's synthesis
- B. Perkin's reaction
- C. Wurtz reaction
- D. Grignard reaction

**Answer:**



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40. In the nucleophilic substitution reactions ( $S_N2$  or  $S_N1$ ), the reactivity of alkyl halides follows the sequence

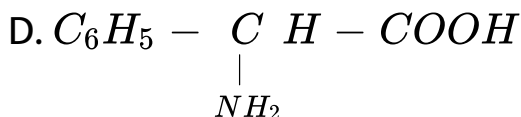
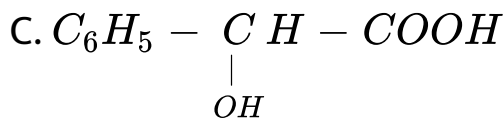
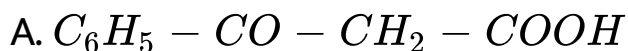


**Answer:**



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41. Which of the following are endothermic processes?



Answer:



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42. Which of the following does not represent the correct order of the properties indicated ?



A.  $Ni^{2+} > Cr^{2+} > Fe^{2+} > Mn^{2+}$  (size)

B.  $Sc > Ti > Cr > Fe$  ( size )

C.  $Mn^{2+} > Ni^{2+} < Co^{2+} < Fe^{2+}$  (unpaired  
electron )

D.  $Fe^{2+} > Co^{2+} > Ni^{2+} > Cu^{2+}$  ( unpaired  
electron )

**Answer:**



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**43.** Maltose on hydrolysis gives

A. Mannose + glucose

B. Galactose + glucose

C. Glucose

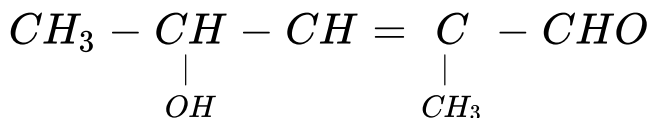
D. Mannose + fructose

**Answer: C**



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**44.** The *IUPAC* name of



is

- A. 4-Hydroxy-1- methylpentanal
- B. 4-Hydroxy-2-methylpent-2-en-1-al
- C. 2-Hydroxy-4-methylpent-3-en-5-al
- D. 2-Hydroxy-3-methylpent-2-en-5-al

**Answer:**



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**45.** Adsorption of gases on solid surface is generally exothermic because :

- A. Enthalpy is positive
- B. Entropy decreases

C. Entropy increases

D. Free energy increases

**Answer:**



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