



# CHEMISTRY

## BOOKS - NTA MOCK TESTS

### NEET MOCK TEST 3

#### Chemistry

1. An ionic compound has a unit cell consisting of A ions at the corners of a cube and B ions on the centers of the faces of the cube .The empirical formula for this compound would be

A.  $AB_2$

B.  $A_3B$

C.  $AB$

D.  $A_2B$

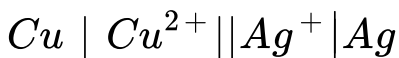
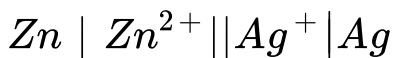
**Answer: A**



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2. The standard electrode potentials of  $Zn^{2+}|Zn$ ,  $Cu^{2+}|Cu$  and  $Ag^+|Ag$  are respectively  $-0.76$ ,  $0.34$  and  $0.8V$ . The following cells were constructed.





What is the correct order  $E_{\text{cell}}^0$  of these cell?

A.  $II > III > I$

B.  $II > I > III$

C.  $I > II > III$

D.  $III > I > II$

**Answer: B**



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3. The electrons identified by the following quantum numbers  $n$  and

$l$ : (i)  $n = 4, l = 1$ , (ii)  $n = 4, l = 0$ , (iii)  $n = 3, l = 2$ ,

and (iv)  $n = 3, l = 1$  can be placed in the order of increasing energy from the lowest to the highest as

A.  $(ii) < (iv) < (i) < (iii)$

B.  $(i) < (iii) < (ii) < (iv)$

C.  $(iii) < (i) < (iv) < (ii)$

D.  $(iv) < (ii) < (iii) < (i)$

**Answer: D**



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4. pH of  $0.1(M)BOH$  (weak base) is found to be 12 .The solution at temperature T K will display an osmotic pressure equal to

A.  $0.01 RT$

B.  $0.01(RT)^2$

C.  $0.11 RT$

D.  $1.1 RT$

**Answer: C**



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5. The artificial sweetener that has the highest sweetness value in comparison to cane sugar is :

- A. Sucralose
- B. Aspartame
- C. Saccharin
- D. Alitame

**Answer: D**



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6. For the first order reaction  $A(g) \rightarrow 2B(g) + C(g)$ , the initial pressure is  $P_A = 90mHg$ , the pressure after

10 minutes is found to be  $180\text{mmHg}$ . The rate constant of the reaction is

A.  $1.15 \times 10^{-3}\text{s}^{-1}$

B.  $2.30 \times 10^{-3}\text{s}^{-1}$

C.  $3.45 \times 10^{-3}\text{s}^{-1}$

D.  $4.60 \times 10^{-3}\text{s}^{-1}$

**Answer: A**



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7. A gaseous mixture contains oxygen and nitrogen in the ratio of 1:4 by weight therefore the ratio of their

number of molecules is

A. 1 : 4

B. 7 : 32

C. 1 : 8

D. 3 : 16

**Answer: B**



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**8.** Some statements about heavy water are given below

:

(i) Heavy water is used as a moderator in nuclear



reactors

(*ii*) Heavy water is more associated than ordinary water.

(*iii*) Heavy water is more effective solvent than ordinary water

Which of the above statements are correct ?

A. (b) and (c)

B. (a) and (b)

C. (a), (b) and (c)

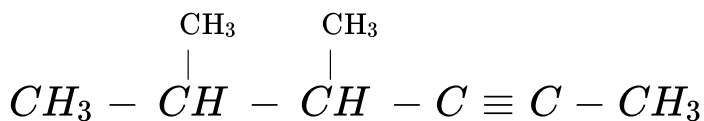
D. (a) and (c)

**Answer: B**



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9. Choose the correct IUPAC name of the compound



A. 2,3-dimethyl-4-hexyne

B. 4,5-dimethyl-2-hexyne

C. 5-Propyl-2-pentyne

D. 2-Propyl-3-pentyne

**Answer: B**



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10. Alizarin is an example of

A. Triaryl dye

B. Azo dye

C. Vat dye

D. Anthraquinone dye

**Answer: D**



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11. Although zirconium belongs to 4d transition series and hafnium to 5d transition series even then they show similar physical and chemical properties because

..... .

A. belong to d-block

B. have same number of electrons

C. belongs to the same group of the periodic table

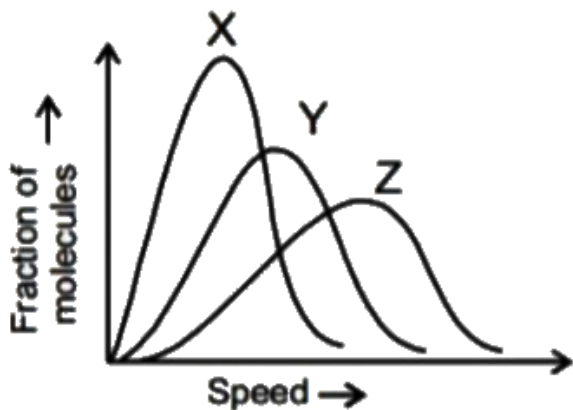
D. have similar atomic radius

**Answer: D**



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12. Consider the following graph:



X, Y and Z can be respectively

A. Ne, Ar and Xe

B. Ar, Xe and He

C. Kr, Ar and Ne

D. Ar, He and Ne

**Answer: C**

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**13.** In a period, atom with smaller radius is

A. Chalcogen

B. Halogen

C. Aerogen

D. Pnicogen

**Answer: B**

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14. The potential difference between the fixed particles layer and the diffused layer having opposite charge is called :

- A. Water potential
- B. Zeta potential
- C. Electrode potential
- D. None of these

**Answer: B**



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15. On reacting with neutral ferric chloride, phenol gives

A. red colour

B. blue colour

C. violet colour

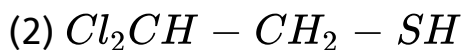
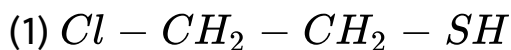
D. green colour

**Answer: C**

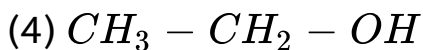
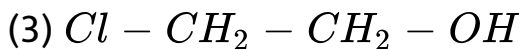


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**16.** Arrange the compounds in order of decreasing acidity:







A.  $IV > III > II > I$

B.  $I > II > III > IV$

C.  $I > II > IV > III$

D.  $II > I > III > IV$

**Answer: D**



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17. The number of oxygen atoms in 4.4 g of  $CO_2$  is

(Given that atomic mass C and O are 12 and 16 g/mol)

A.  $1.2 \times 10^{23}$

B.  $1.2 \times 10^{24}$

C.  $6 \times 10^{22}$

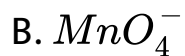
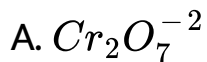
D.  $6 \times 10^{23}$

**Answer: A**



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**18.** Which of the following species has  $O - O$  bond?





**Answer: C**



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**19.** Urea can be detected by

A. benedict test.

B. molisch test.

C. ninhydrine test.

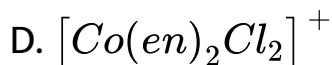
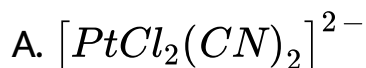
D. biuret test.

**Answer: D**



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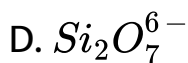
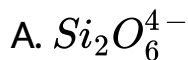
20. Which one of the following has largest number of isomers?



**Answer: D**



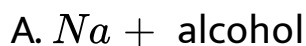
21. The basic structural unit in silicates is



**Answer: C**

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22. Which reagent can convert acetic acid into ethanol?



B.  $LiAlH_4$  + ether

C.  $H_2$  +  $Pt$

D.  $Sn$  +  $HCl$

**Answer: B**



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**23.** Formic acid is obtained when :

A. Calcium acetate is heated with conc.  $H_2SO_4$

B. Calcium formate is heated with calcium acetate

C. Glycerol is heated with oxalic acid at 373 K

D. Acetaldehyde is oxidised with



**Answer: C**



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**24.** If rate of diffusion of A is 5 times that of B what will be the density ratio of A and B?

A. 1: 25

B. 1: 5

C. 25: 1

D. 5: 1

**Answer: A**



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25. Which of the following is the energy of a possible excited state of hydrogen?

A.  $+6.8eV$

B.  $+13.6eV$

C.  $-6.8eV$

D.  $-3.4eV$

**Answer: D**



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26. Dissociation constants of  $CH_3COOH$  and  $NH_4OH$  are  $1.8 \times 10^5$  each at  $25^\circ C$ . The equilibrium constant for the reaction of  $CH_3COOH$  and  $NH_4OH$  will be -

A.  $\frac{1.8 \times 1.8}{10^4}$

B.  $\frac{1.8}{10^{-9}}$

C.  $1.8 \times 1.8 \times 10^4$

D.  $3.24 \times 10^{-10}$

**Answer: C**



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27. Which of the following metal is extracted by amalgamation process?

A. Tin

B. Silver

C. Copper

D. Zinc

**Answer: B**



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28. The inactivation of a viral preparation in a chemical bath is found to be a first order reaction. The rate

constant for the viral inactivation if in beginning 1.5 %  
of the virus is inactivated per minute is (Given :  $\ln \frac{100}{98.5} = 0.01511$ )

A.  $1.25 \times 10^{-4} \text{sec}^{-1}$

B.  $2.5 \times 10^{-4} \text{sec}^{-1}$

C.  $5 \times 10^{-4} \text{sec}^{-1}$

D.  $2.5 \times 10^{-4} \text{min}^{-1}$

**Answer: B**



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29. Consider the following standard electrode potentials

( $E^\circ$  in volts) in aqueous solution:

<u>Element</u>	$M^{3+} / M$	$M^+ / M$
Al	-1.66	+0.55
Tl	+1.26	-0.34

Based on these data, which of the following statements

is correct ?

- A.  $Tl^+$  is more stable than  $Al^{3+}$
- B.  $Al^+$  is more stable than  $Al^{3+}$
- C.  $Tl^{3+}$  is more stable than  $Al^{3+}$
- D.  $Tl^+$  is more stable than  $Al^+$

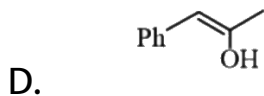
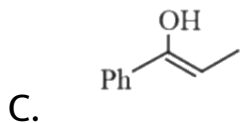
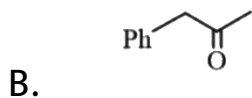
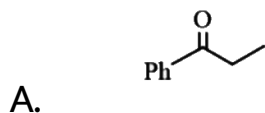
**Answer: D**



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The major product (A) formed is -



**Answer: A**



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31. Molecular weight of an organic acid is given by:

A. Equivalent weight  $\times$  basicity

B.  $\frac{\text{Equivalent Weight}}{\text{Basicity}}$

C.  $\frac{\text{Basicity}}{\text{Equivalent Weight}}$

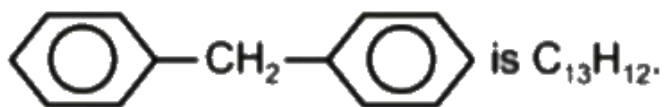
D. Equivalent weight  $\times$  Valency

**Answer: A**



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32. The molecular formula of diphenyl methane,



How many structural isomers are possible when one of the hydrogen is replaced by a chlorine atom?

A. 6

B. 4

C. 8

D. 7

**Answer: B**



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33.  $6 \times 10^{-3}$  mole  $K_2Cr_2O_7$  reacts completely with  $9 \times 10^{-3}$  mole  $X^{n+}$  to give  $XO_3^-$  and  $Cr^{3+}$ . The value of  $n$  is :

A. 1

B. 3

C. 2

D. 4

**Answer: A**



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34. Which of the following is an intensive property?

A. Density

B. Volume

C. Total heat capacity

D. Mass

**Answer: A**

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35. At  $80^{\circ}C$  the vapour pressure of pure liquid 'A' is 520 mm Hg and that of pure liquid 'B' is 1000 mm Hg. If a mixture solution of 'A' and 'B' boils at  $80^{\circ}C$  and 1 atm

pressure, the amount of 'A' in the mixture is (1 atm  
= 760mmHg)

A. 52 mole percent

B. 34 mole percent

C. 48 mole percent

D. 50 mole percent

**Answer: D**



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**36.** The number of S-S bonds in sulphur trioxide trimer  
( $S_3O_9$ ) is

A. 3

B. 2

C. 1

D. 0

**Answer: D**



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37. If  $\Delta H_f^\circ$  for  $H_2O_2$  and  $H_2O$  are  $-188$  kJ/mole and  $-286$  kJ/mole, what will be the enthalpy change of the reaction  $H_2O_2 \rightarrow H_2O + \frac{1}{2}O_2$

A.  $-196$  kJ

B.  $-494kJ$

C. 146 kJ

D.  $-98kJ$

**Answer: A**



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38. For the reaction,  $SO_2(g) + \frac{1}{2}O_2(g) \rightleftharpoons SO_3(g)$ , If

$K_p = K_c(RT)^x$  where the symbols have usual meaning

then, the value of x is (assuming ideality).

A. -1

B.  $-\frac{1}{2}$

C.  $\frac{1}{2}$

D. 1

**Answer: B**



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39. If  $H_2SO_4$  ionises as  $H_2SO_4 + 2H_2O \rightarrow 2H_3O^+ + SO_4^{2-}$ , then total number of ions produced by 0.1 Molar and 1 L aqueous  $H_2SO_4$  will be:

A.  $9.03 \times 10^{21}$

B.  $3.01 \times 10^{22}$

C.  $6.02 \times 10^{22}$

D.  $1.8 \times 10^{23}$

**Answer: D**



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**40.** A micelle formed during the cleansing action of soap is

A. a discrete particle of soap.

B. aggregated particles of soap and dirt.

C. a discrete particle of dust.

D. an aggregated particle of dust and water.

**Answer: B**



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**41.** You are given marbles of diameter  $10\text{mm}$ . They are to be placed such that their centres are laying in a square bound by four lines each of length  $40\text{mm}$ . What will be the arrangements of marbles in a plane so that maximum number of marbles can be placed inside the area? Sketch the diagram and derive expression for the number of molecules per unit area.

A.  $1.565 \text{ marbles } \text{cm}^{-2}$

B.  $2.754 \text{ marbles } \text{cm}^{-2}$

C. 1.000 marbles  $cm^{-2}$

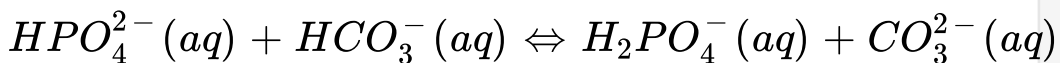
D. 1.985 marbles  $cm^{-2}$

**Answer: A**

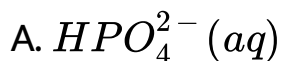


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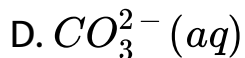
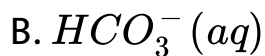
**42.** The equilibrium constant for the given reaction is approximately  $10^{-3}$



Which is strongest conjugate base in the given reaction?







**Answer: D**



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**43.** Which of the following would be the best (most reactive) nucleophile in the polar medium?



D.  $F^-$

**Answer: A**



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**44.** The value of  $\Delta H$  for the reaction  $X_2(g) + 4Y_2(g) \rightleftharpoons 2XY_4(g)$  is less than zero.

Formation of  $XY_4(g)$  will be favored at :

- A. high temperature and high pressure
- B. low pressure and low temperature
- C. high temperature and low pressure
- D. high pressure and low temperature

**Answer: D**

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**45.** Which one of the following undergoes reaction with 50 % sodium hydroxide solution to give the corresponding alcohol and acid?

- A. Phenol
- B. Butanol
- C. Benzoic acid
- D. Benzaldehyde

**Answer: D**



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