



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA JEE MOCK TEST 76

Chemistry

1. Consider the following ions



Atomic number : $Cr = 24$, $Fe = 26$, $Co = 27$, $Ni = 28$.

The correct sequence of increasing order of the number of unpaired electrons in these ions is

A. 1, 2, 3, 4

B. 4, 2, 3, 1

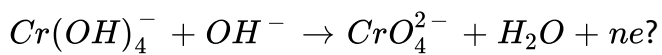
C. 1, 3, 2, 4

D. 3, 4, 2, 1

Answer: A

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2. What is the value of n in the following equation :



A. 3

B. 6

C. 5

D. 2

Answer: A

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3. For given first order reaction, the reactant reduced to 1/4th its initial value in 10 min. The rate constant of the reaction is

A. 0.1386 min^{-1}

B. 0.0693 min^{-1}

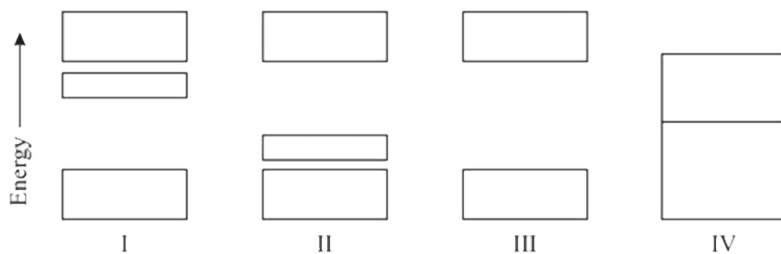
C. $0.1386 \text{ mol L}^{-1}\text{min}^{-1}$

D. $0.0693 \text{ mol L}^{-1}\text{min}^{-1}$

Answer: A

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4. The band structure in n - type semiconductor is



A. I

B. II

C. III

D. IV

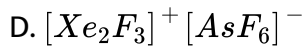
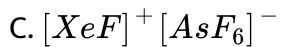
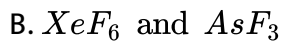
Answer: A



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5. The reaction of solid XeF_2 with AsF_5 in 1 : 1 ratio affords

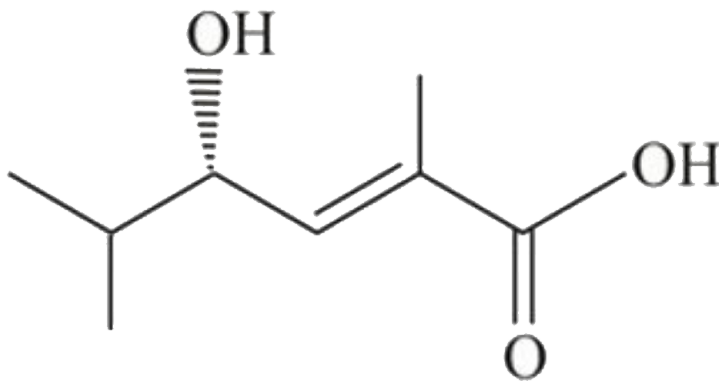
A. XeF_4 and AsF_3



Answer: C

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6. For the compound.



the stereochemical notations are

A. 2Z, 4R

B. 2Z, 4S

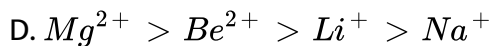
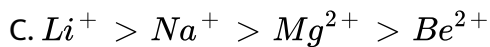
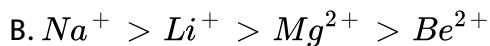
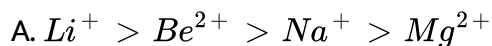
C. 2E, 4R

D. 2E, 4S

Answer: D

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7. The set representing the correct order of ionic radius is



Answer: B

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8. When X amperes of current is passed through molten $AlCl_3$ for 96.5 s. 0.09 g of aluminium is deposited. What is the value of X?

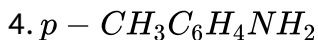
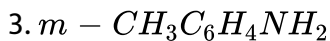
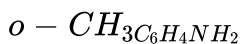
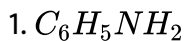
- A. 10A
- B. 20 A
- C. 30 A
- D. 40 A

Answer: A



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9. Arrange the following anilines in decreasing order of basicity



A. $4 > 1 > 2 > 3$

B. $2 > 4 > 3 > 1$

C. $1 > 2 > 3 > 4$

D. $4 > 3 > 2 > 1$

Answer: B

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10. Heat of neutralisation of strong acid and strong base under 1atm and 25°C is -13.7kcal . If standard Gibbs energy change for dissociation of water to H^+ and OH^- is -19.14kcal , the change in standard entropy for dissociation of water is:

A. 18.25

B. 110.2

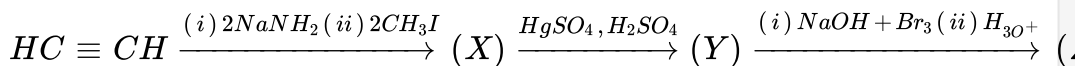
C. -18.25

D. None of these

Answer: B

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11. What is (Z) is the following sequence of reaction?



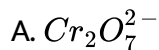
- A. $CH_3CH_2CH_2CHO$
- B. $CH_3CH_2COCH_3$
- C. CH_3CH_2COOH
- D. $CH_3CH_2CH_2COOH$

Answer: C

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12. When dilute H_2SO_4 and H_2O_2 are added to a solution of chromate ions, an intense blue colour is produced, which is stable in ether. This is

due to the formation of



Answer: C



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13. The vapour pressure of a pure liquid 'A' is 70 torr at $27^\circ C$. It forms an ideal solution with another liquid B. The mole fraction of B is 0.2 and total pressure of the solution is 84 torr at $27^\circ C$. The vapour pressure of pure liquid B at $27^\circ C$ is :

A. 140 torr

B. 56 torr

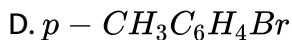
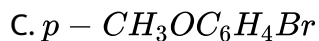
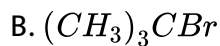
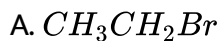
C. 14 torr

D. 70 torr

Answer: A

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14. Gabriel phthalimide synthesis can be used for the preparation of amine from



Answer: A

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15. The red colour of oxyhaemoglobin is mainly due to

- A. d - d transition
- B. metal to ligand charge transfer transition
- C. ligand to metal charge transfer transition
- D. intraligand $\pi - \pi^*$ transition

Answer: A



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16. The root mean square of gas molecules at 25 K and 1.5 bar is 100 m s^{-1} . If the temperature is raised to 100 K and the pressure to 6.0 bar, the root mean square speed becomes

- A. 200 m s^{-1}
- B. 100 m s^{-1}
- C. 400 m s^{-1}

D. $1600ms^{-1}$

Answer: A



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17. The sequence of an mRNA molecule produced from a DNA template strand with the composition

5'-AGCTACACT-3' is

A. 5' - AUGUAGCU - 3'

B. 5'- UCGAUGUGA-3'

C. 5'- AGTGTAGCT - 3'

D. 5' - TCGATGTGA - 3'

Answer: B



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18. Phosgene, COCl_2 , a poisonous gas decomposes according to the equation



If $K_c = 0.083$ at 900°C , What is the value of K_p ?

A. 0.125

B. 8.0

C. 6.1

D. 0.16

Answer: B



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19. Acrilan fibre used for cloth, carpets and blankets, it the polymer of

A. acrylonitrile

B. ethylacrylate

C. styrene

D. monochlorotrifluoro ethane

Answer: A

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20. The general trend in the properties of elements of carbon family shows that with increase in atomic number

A. the tendency towards catenation increases

B. the tendency to show +2 oxidation state increases

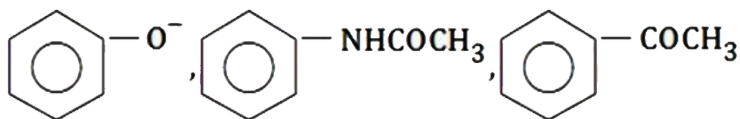
C. metallic character decreases

D. the tendency to form complexes with covalency higher than four decreases

Answer: B

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21. How many of these compounds are more reactive towards electrophilic substitution reaction than toluene. Phenol, Aniline, Anisole, Benzaldehyde, Chlorobenzene,



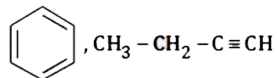
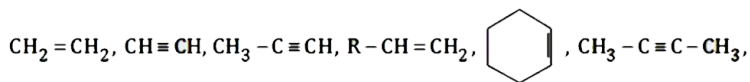
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22. How many interhalogen compounds are not possible ?

ICl , IBr , Brl , $ClBr_3$, ClF_3 , $BrCl_5$, BrI_5 , Icl_3 , IF_7

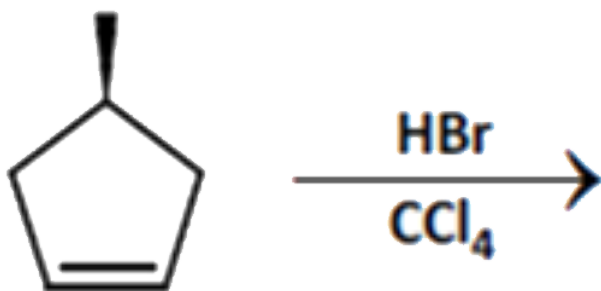
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23. How many of these compounds can react with ammonical silver nitrate solution to give white ppt.



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24. Find the total number of feasible products (including stereoisomers) in the following reaction. (No carbocation rearrangements is observed)



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25. The pH of a solution is 5.0. To this solution sufficient acid is added to decrease the pH to 2.0. The no. of times the concentration of H^+

increased is



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