



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA JEE MOCK TEST 36

Chemistry

1. Equal masses of methane and ethane have their total translational kinetic energy in the ratio 3:1, then their temperature are in the ratio is

A. 5:8

B. 45:8

C. 15:8

D. 8:5

Answer: D



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2. Which of the following statements is true for all the alkali metals ?

A. Their nitrates decomposes on heating to give the corresponding nitrites and oxygen

B. Their chlorides are deliquescent and crystallize as hydrates.

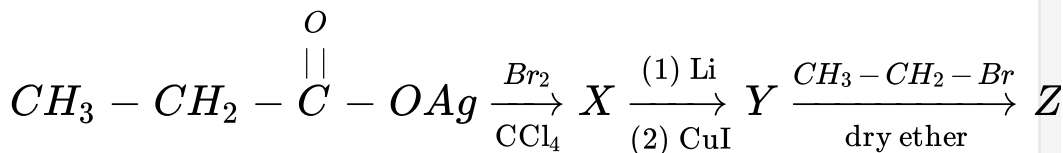
C. They react with water to form hydroxide and hydrogen

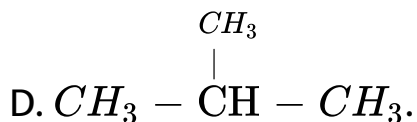
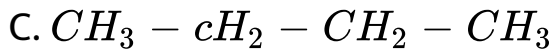
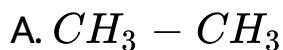
D. They react with halogens to form only ionic halides $M^+ X^-$.

Answer: C

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3.





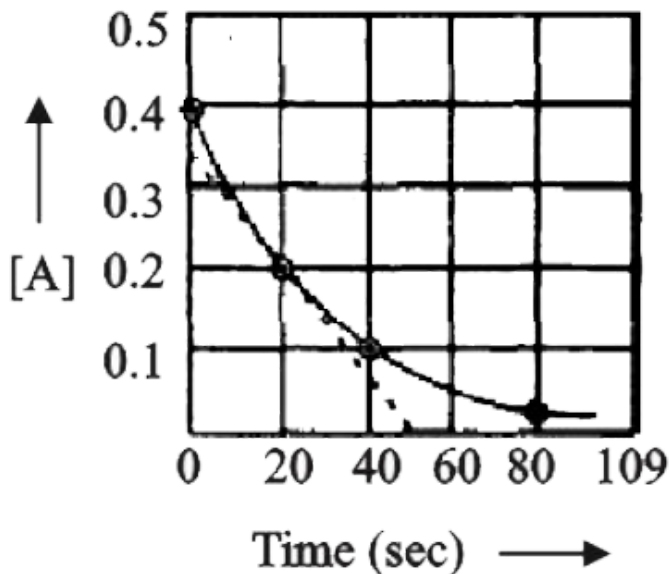
Answer: C



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4. A certain reaction $A \rightarrow B$ follows the given concentration (molarity) - time graph. Which of the

following statement is true?



- A. The reaction is of second order with respect to A
- B. The rate for this reaction at 40 second will be approximately $3.5 \times 10^{-3} M s^{-1}$
- C. The rate for this reaction at 80 second will be $1.75 \times 10^{-3} M s^{-1}$

D. The [B] will be 0.25 M at 60 second

Answer: B



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5. Select the most ionic and most covalent compounds respectively from the following.

CrO_5 , Mn_2O_7 , PbO , P_4O_{10} , SnO_2

A. CrO_5 , Mn_2O_7

B. PbO , Mn_2O_7

C. CrO_5 , Fe_2O_3

D. CrO_5 , SnO_2

Answer: B



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6. For $[FeF_6]^{3-}$ and $[CoF_6]^{3-}$, the correct statement is

A. both are coloured

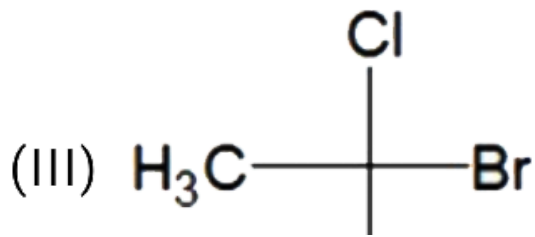
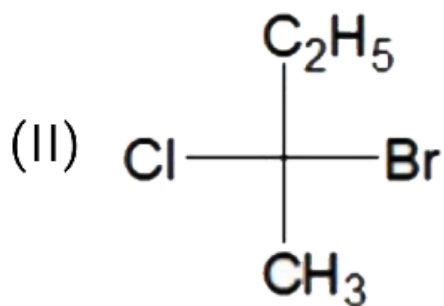
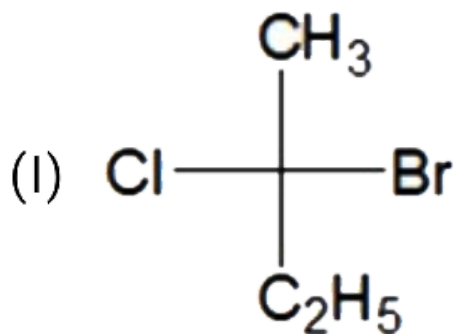
B. both are colourless

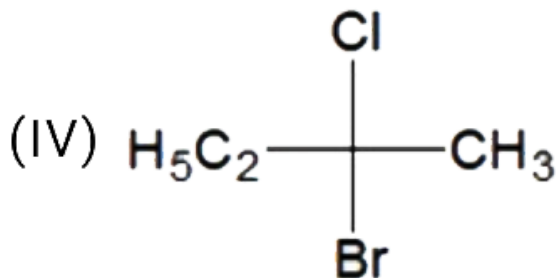
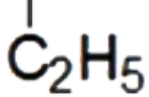
C. $[FeF_6]^{3-}$ is coloured and $[CoF_6]^{3-}$ is colourless

D. $[FeF_6]^{3-}$ is colourless and $[CoF_6]^{3-}$ is coloured

Answer: D

7. Consider the following structures (I), (II), (III) and (IV).





Which of the following statements is not correct?

- A. II and III are identical
- B. I and II are enantiomers
- C. I and III are enantiomers
- D. II and IV are enantiomers.

Answer: D



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8. Which of the following statements is incorrect?

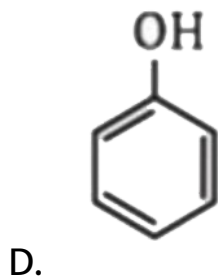
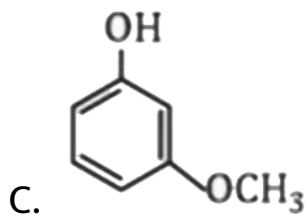
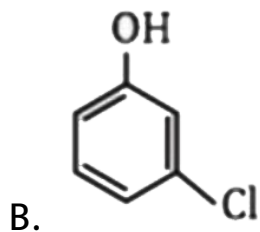
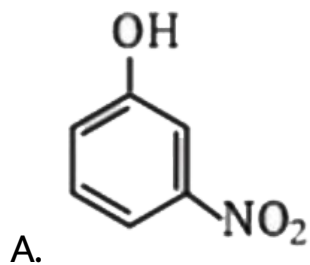
- A. Calamine and siderite are carbonates Argentite and cuprite are oxides
- B. Argentite and cuprite are oxides
- C. Zinc blende and pyrites are sulphides.
- D. Malachite and azurite are ores of copper

Answer: B



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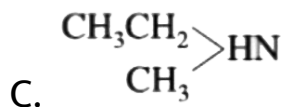
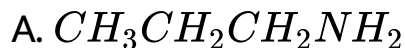
9. Which one of the following is most acidic ?



Answer: A

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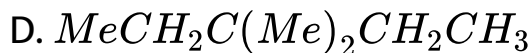
10. Which of the following volatile?



Answer: B

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11. Which of the following alkanes will give a single product with a methylene insertion?



Answer: A



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12. Which of the following can possibly be used as analgesic without causing addiction and modification?

A. Morphine

B. N - Acetyl - para - aminophenol

C. Diazepam

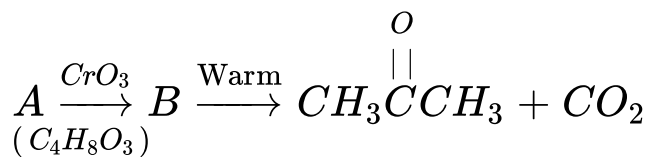
D. Tetrahydrocatenol

Answer: B

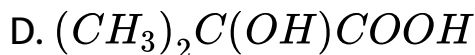
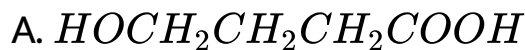


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13. Consider the following sequence of reactions



The compound (A) is :



Answer: B



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14. 1, 1- Dichloropropane on hydrolysis gives :

A. propanone

B. propanal

C. ethanal

D. 1, 1- Propanediol

Answer: B



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15. The maximum probability of finding electron in the

d_{xy} orbital is -

A. along the x - axis

B. along the y - axis

C. at the angle of 45° from the x - and y - axis

D. at the angle of 90° from the x - and y - axis

Answer: C



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16. The emf of the cell,

$Zn | Zn^{2+} (0.01M) || Fe^{2+} (0.001M) | Fe$ at 298 K is

0.2905 V then the value of equilibrium constant for the

cell reaction is :

A. $e^{0.32 / 0.0295}$

B. $10^{-.32 / 0.0295}$

C. $10^{0.26 / 0.295}$

D. $10^{0.32 / 0.0591}$

Answer: B



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17. In the mixture of ($NaHCO_3 + Na_2CO_3$) volume of HCl required is x mL with phenolphthalein indicator and then y mL with methyl orange indicator in same titration Hence, volume of HCl for complete reaction of Na_2CO_3 is

A. $2x$

B. y

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

D. $(y - x)$

Answer: A



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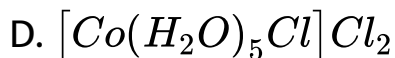
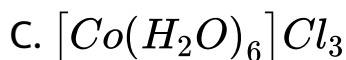
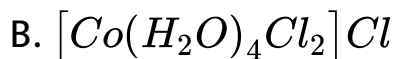
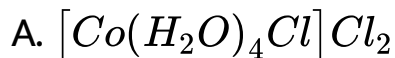
18. A complex is represented as $CoCl_3 \cdot XNH_3$. Its 0.1

molal solution in aqueous solution shows

$$\Delta T_f = 0.558^\circ. \left(K_f \text{ for } H_2O \text{ is } 1.86 K \text{molality}^{-1} \right)$$

Assuming 100% ionisation of complex and co-

ordination number of Co as six, calculate formula of complex.



Answer: D



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19. The shortest distance between two Na^+ ions in rock - salt arrangement having edge length equal to

$a\sqrt{2}$ picometers is -

A. $2a$

B. $2a\sqrt{2}$

C. $\frac{a}{\sqrt{2}}$

D. a

Answer: D



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20. The number of stereoisomers obtained by bromination of trans-2-butene is :

A. 1

B. 2

C. 3

D. 4

Answer: A



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21. Two moles of an ideal monoatomic gas at 5 bar and 300 K are expanded irreversibly up to an external pressure of 1 bar. The work is done by the gas is xR (in bar. Litre). The value of 'x' is [R is gas constant]



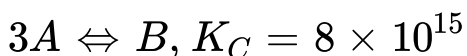
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22. The pH at the equivalent point for the titration of 0.10 M KH_2BO_3 with 0.1 M HCl is (K_a of $H_3BO_3 = 12.8 \times 10^{-10}$)

Report your answer by rounding it up to nearest whole number.

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23. Initially 3 moles of 'A' was taken in a 1 L container. The approx. moles of A left in the container when the following equilibrium established is $x \times 10^{-6}$. The value of 'x' is



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24. 0.15g of a substance dissolved in 15g of solvent boiled at a temperature higher at 0.216° than that of the pure solvent. Calculate the molecular weight of the substance. Molal elevation constant for the solvent is $2.16^\circ C$

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25. What hydrogen-like ion has the wavelength difference between the first lines of the Balmer Lyman series equal to $59.3nm$?

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