CHEMISTRY

BOOKS - AIIMS PREVIOUS YEAR PAPERS

AIIMS 2019 26 MAY EVENING SHIFT

Chemistry

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1. Assertion : Phenol is more acidic then m-methoxy phenol

Reason : $-OCH_3$ shows $+I$ effect

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2. Assertion : Glyceraldehyde reacts with Br_2/H_2O to form achiral compound

Reason : $-CHO$ and $-CH_2OH$ both are oxidized

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3. Assertion : Propene reacts with HI in presence of peroxide give 1-iodopropane.

Reason : $1°$ free radical is less stable than $2°$ free radical

4. Assertion : Anhydrides are more reactive than ester for nucleophilic substitution

Reason : R.COO– is better leaving group than R–O–

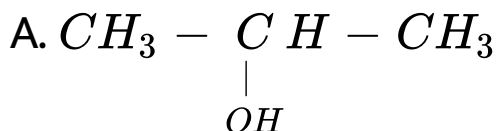**5.** Assertion : m-Bromo tolune can be prepared
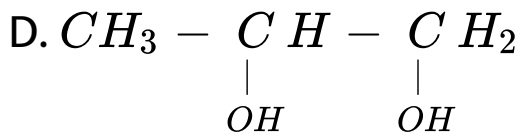
by m-toluidene

Reason : Amino group is meta directing

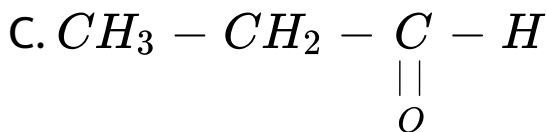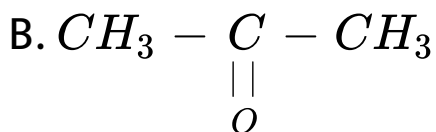**6.** $CH_3C \equiv CH \xrightarrow{2HBr} \xrightarrow{H_2O}$ Product, Product

is :

A. $CH_3 - \underset{\underset{OH}{|}}{C} H - CH_3$

B. $CH_3 - \underset{\underset{O}{||}}{C} - CH_3$

C. $CH_3 - CH_2 - \underset{\underset{O}{||}}{C} - H$

D. $CH_3 - \underset{\underset{OH}{|}}{C}H - \underset{\underset{OH}{|}}{C}H_2$

Answer: B

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7. Which is the chemical test for polysaccharide

A. Iodine solution

B. Ninhydrine test

C. Tollen's test

D. Banedict solution

Answer: A

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8. Assertion : BO_{3}^{-3} and SO_{3}^{-2} are not isostructural

Reason : In SO_3^{-2-} sulphur has one lone pair of electron

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9. Assertion : Vapour pressure of solvent increases when solvent B is added.

Reason : B is more volatile therefor vapour pressure of B is greater than of A.

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10. H_2O_2 is obtained by which of the following

A. BaO_2

B. MnO_2

C. SeO_2

D. TeO_2

Answer: A

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11. Graph between P & V below critical temperature is

A.

B.

C.

D.

Answer: D

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12. At what temperature rate becomes double than at 300 K ? Given $\ln k = 10 - \dfrac{69(KJ)}{RT}$

A. 329

B. 307.7

C. 292.03

D. 323.5

Answer: B

13. Assertion : U is state function

Reason : T is an intensive propertive

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14. Assertion : In a process, if work = 0 then

$\Delta U = q$

Reason : q is difference between initial state

and final state of a system.

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15. Which alkali metal during flame test will show colour corresponding to maximum wavelength?

A. Li

B. Na

C. K

D. Cs

Answer: A

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16. Which pair of elements has maximum electronegativity difference?
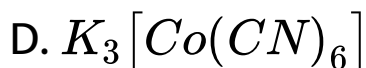
    A. Li & F
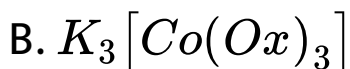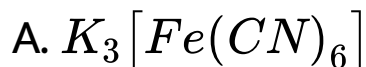
    B. Na & F

    C. Na & Br

    D. Na & Cl

Answer: B

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17. Which of the following complexes has maximum CFSE?

A. $K_3\left[Fe(CN)_6\right]$

B. $K_3\left[Co(Ox)_3\right]$

C. $K_3\left[CoF_6\right]$

D. $K_3\left[Co(CN)_6\right]$

Answer: A

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18. NH_3 reacts with bleaching powder to given :
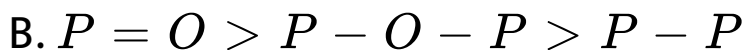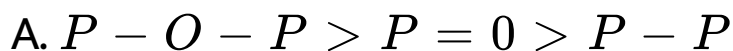
A. N_2

B. $Ca(OH)_2$

C. NCl_3

D. O_2
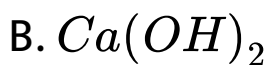
Answer: A

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19. In dimer of phosphorus pentaoxide, in what order number of $P - P, P = O$ & $P - O - P$ bonds are there ?

A. $P - O - P > P = 0 > P - P$

B. $P = O > P - O - P > P - P$

C. $P - O - P > P - P > P = O$

D. $P = O > P - P > P - O - P$

Answer: A

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20. For the reaction : $A + 2B \rightarrow C + D$, the expression of rate of reaction will be :

A. $\dfrac{-1}{1} \dfrac{d[A]}{dt} = \dfrac{-1}{2} \dfrac{d[B]}{dt}$

B. $\dfrac{1}{1} \dfrac{d[A]}{dt} = \dfrac{-1}{2} \dfrac{d[B]}{dt}$

C. $\dfrac{-1}{1} \dfrac{d[A]}{dt} = \dfrac{1}{2} \dfrac{d[B]}{dt}$

D. $\dfrac{1}{1} \dfrac{d[A]}{dt} = \dfrac{-1}{2} \dfrac{d[B]}{dt}$

Answer: A

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21. In a F.C.C arrangement edge length of unit cell is a, which of the following is correct distance between two nearest tetrahedral voids?

A. $\dfrac{a}{2}$

B. a

C. $\sqrt{3}a/2$

D. $\sqrt{3}a/4$

Answer: A

22. For the endothermic reaction $A_2 \rightarrow 2A$, which of the following will increase yield of monomer?

A. Increase in both temperature and concentration of reactant

B. Increase in temperature and decrease in concentration of reactant.

C. Decrease in temperature and increase in concentration of reactant.

D. Decrease in both temperature and concentration of reactant.

Answer: A

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23. Difference in ionization energy & Ionsation enthalpy is :

A. Zero

B. $\dfrac{5}{2}$ RT

C. $\dfrac{3}{2} RT$

D. None

Answer: B

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24. In $Fe(CO)$ is $Cr(CO)_6$, how many CO ligands can be replaced by NO?

A. 3,3

B. 3,6

C. 6,3

D. 2,4

Answer: D

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25. Which of the following has maximum iron content?

A. Cast Iron

B. Wrought Iron

C. Pig Iron

D. Stainless steel

Answer: B

26. Calculate Molarity of a 63% W/W HNO_3

solution if density is 5.4 g/mL :

A. 14M

B. 12M

C. 10M

D. 8M

Answer: A

27. pH of a salt solution of wak acid $(pK_a = 4)$ & weak base $(pK_b = 5)$ at $25°C$ is :

A. 6.5

B. 6

C. 7

D. 7.5

Answer: A

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28. Radius of 1st orbit of H & some orbit of Be^{3+} is same . Energy of their orbit of Be^{3+} is :

A. $-54.4eV$

B. $-13.6eV$

C. $-108.8eV$

D. $-27.2eV$

Answer: A

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29. Select the correct statement regarding shapes of PCl_5, BrF_5 & IF_7 :

A. All are square pyramidal

B. All are trigonal bipyramidal
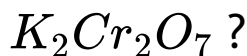
C. One of the following is square pyramidal

D. one of the following is tetrahedral

Answer: C

30. Which of the following is incorrect about

$K_2Cr_2O_7$?

A. It can be prepared from K_2CrO_4.

B. It is used in redox titrations.

C. It is stable in both acid & base.

D. It is orange in colour

Answer: C

31. The conductivity of a 0.05 M solution of a weak monobasic acid is $10^{-3}5cm^{-1}$, If λ_m^∞ for weak acid $5005cm^2mol^{-1}$, calculate Ka of weak monobasic acid :

A. 8×10^{-5}

B. 4×10^{-6}

C. 16×10^{-7}

D. 14×10^{-8}

Answer: A

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