



CHEMISTRY

BOOKS - MHTCET PREVIOUS YEAR PAPERS AND PRACTICE PAPERS

MOCK TEST 5

Mcqs

1. What type of linkage is present in $S_2O_3^{2-}$?

A. S-S linkage

B. S-O linkage

C. both (a) and (b)

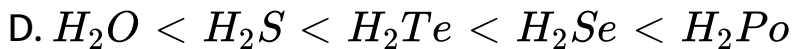
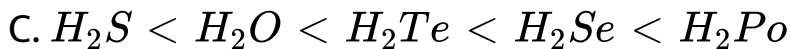
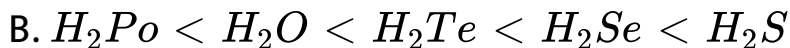
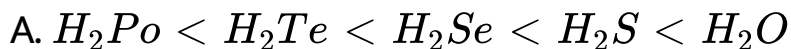
D. None of these

Answer: C



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2. The thermal stability of the hydrides of oxygen family is in order :



Answer: A



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3. The bond angle in OF_2 out of OF_2 , Cl_2O , Br_2O is minimum. This is due to

A. electrons are nearer to fluorine due to high electronegativity of F compared to Cl or Br

B. lone pair-lone pair repulsion bond angle decreases

C. both (a) and (b)

D. none of these

Answer: C

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4. Maximum distortion in structure takes place in



Answer: C

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5. An element of group 2 forms covalent oxide, which is amphoteric in nature and dissolves in water to give an amphoteric hydroxide. Identify the element.

A. Beryllium

B. Magnesium

C. Calcium

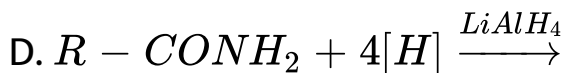
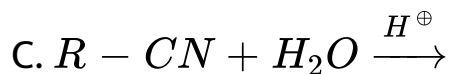
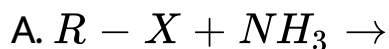
D. Barium

Answer: A



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6. Which of the following reactions does not yield an amine?

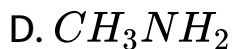
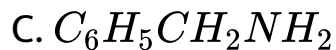
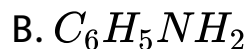


Answer: C



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7. Which of the following is the weakest base?



Answer: B



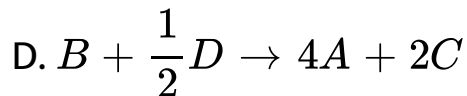
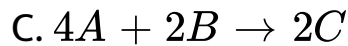
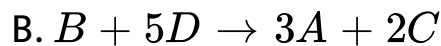
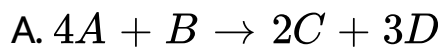
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8. The rate of a reaction is expressed in different ways

as follows

$$+\frac{1}{2} \frac{d[C]}{dt} = -\frac{1}{5} \frac{d[D]}{dt} = +\frac{1}{3} \frac{d[A]}{dt} = -\frac{d[B]}{dt}$$

The reaction is



Answer: B



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9. The decomposition of hydrocarbon follows the

equation $k = (4.5 \times 10^{11} \text{ s}^{-1}) e^{-28000K/T}$

Calculate E_a .

A. $232.79 \text{ kJ mol}^{-1}$

B.

C. $425.25 \text{ kJ mol}^{-1}$

D. 300 kJ mol^{-1}

Answer: A



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10. Polarisation of electrons in acrolein may be written

as :





Answer: D



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11. How much portion of an atom located at corner and at body centred of a cubic unit cell?

A. $1, \frac{1}{2}$

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

C. $\frac{1}{8}, 1$

D. $\frac{1}{8}, \frac{1}{2}$

Answer: C



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12. For a reaction at $25^{\circ}C$, enthalpy and entropy change are

$$-11.7 \times 10^3 J \text{ mol}^{-1} \text{ and } -150 J \text{ mol}^{-1} K^{-1}$$

respectively. What is the Gibbs free energy?

A. 15.05 kJ/mol

B. 19.59 kJ/mol

C. 2.55 kJ/mol

D. 25.55 kJ/mol

Answer: B



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13. In the process of dissolving sugar in water, the entropy increases. This means that the signs of ΔS is . . . , and that the randomness of the system . . .

A. undetermined, increases

B. positive, decreases

C. positive, increases

D. negative, decreases

Answer: C



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14. Which of the following reactions can be used to prepare methane?

A. Clemmensen reduction

B. Wurtz reaction

C. Reduction of $CH_2 = CH_2$ by $LiAlH_4$

D. Reduction of methyl iodide by using a zinc-copper couple

Answer: D



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15. At 25° and 1 atm, which one(s) of the following has nonzero ΔH°_f ?

A. Fe

B. O

C. C(s)

D. Ne

Answer: B



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16. Which of the following is amphoteric oxide?

Mn_2O_7 , CrO_3 , Cr_2O_3 , CrO , V_2O_5 , V_2O_4

A. $V_2O_5Cr_2O_3$

B. Mn_2O_7 , CrO_3

C. CrO , V_2O_5

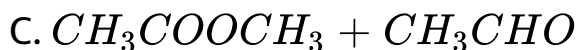
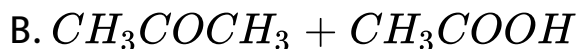
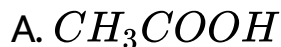
D. V_2O_5 , V_2O_4

Answer: A



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17. The compound $CH_3 - \overset{CH_3}{\underset{|}{C}} = CH - CH_3$ on reaction with $NaIO_4$ in the presence of $KMnO_4$ gives



Answer: B



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18. What quantity of ammonium sulphate is necessary for the production of NH_3 gas sufficient to neutralize a solution containing 292 g of HCl?

[$HCl = 36.5$, $(NH_4)_2SO_4 = 132$, $NH_3 = 17$]

A. 272g

B. 403g

C. 528g

D. 1056g

Answer: C



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19. Which of the following lanthanoids show +2 oxidation state besides the characteristic oxidation state +3 of lanthanoids?

A. *Ce*

B. *Eu*

C. Ho

D. None of these

Answer: B



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20. $[CoBr(NH_3)_5]SO_4$ and $[CoSO_4(NH_3)_5]Br$ are related to each other as

- A. ionisation isomers
- B. linkage isomers
- C. coordination isomers
- D. optical isomers

Answer: A



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21. What should be the correct IUPAC name for diethylbromomethane?

A. 1-bromo-1,1-diethyl methane

B. 3-bromo pentane

C. 1-bromo-1-ethyl propane

D. 1-bromo pentane

Answer: B

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22. Which of the following ligand has lowest Δ_0 value?

A. CN^-

B. CO

C. F^-

D. NH_3

Answer: C



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23. At what temperature will most probable speed of the molecules of the second member of alkyne series be the same as that of SO_2 at $527^\circ C$?

A. $347^\circ C$

B. $227^{\circ}C$

C. $800^{\circ}C$

D. $254^{\circ}C$

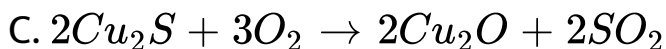
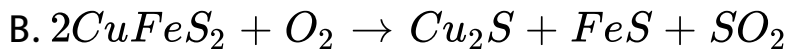
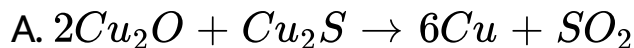
Answer: B

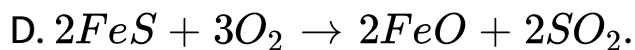


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24. In the extraction of Cu the reaction takes place

Bessemer converter is:



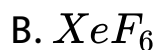


Answer: A



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25. XeO_2F_2 is obtained by partial hydrolysis of



C. both (a) and (b)

D. None of these

Answer: C



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26. During electrolysis, the species discharged at cathode are .

A. anion

B. cation

C. ions

D. all of these

Answer: B



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27. Which of the following statement is false?

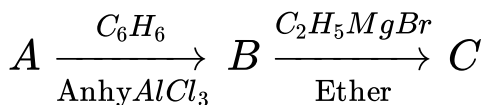
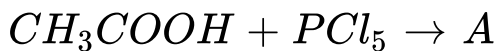
- A. Radon is obtained from the decay of radium
- B. helium is inert gas
- C. Xenon is the most reactive among the rare gases
- D. The most abundant rare gas found in the atmosphere is helium

Answer: D

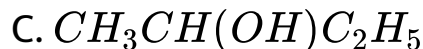
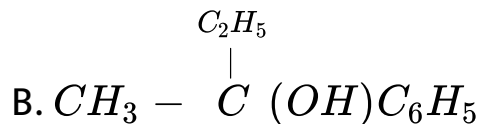
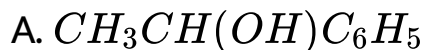


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28. In a set of the given reactions, acetic acid yields a product C.



Product C would be



Answer: B



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29. Which of the following ketone will not give yellow precipitate with $NaOH / I_2$?

A. pentan-2-one

B. benzophenone

C. acetone

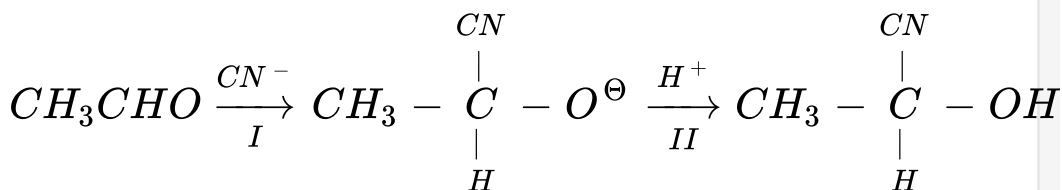
D. Hexan-2-one

Answer: B



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30. In the following, slow step is



- A. Only I
- B. Only II
- C. both (a) and (b)
- D. None of these

Answer: A



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31. In the formation of NO^+ from NO, the electron is removed from

- A. a σ orbital
- B. a π orbital
- C. a σ^* orbital
- D. a π^* orbital

Answer: D



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32. The standard reduction potential for Fe^{2+} / Fe and Sn^{2+} / Sn electrodes are -0.44 and -0.14V respectively. For the given cell reaction, $Fe^{2+} + Sn \rightarrow Fe + Sn^{2+}$, the standard EMF is

A. 0.42 V

B. - 0.42V

C. - 0.30V

D. - 1.10V

Answer: C



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33. Which of the following statement is incorrect?

- A. Some antiseptics can be added to soaps
- B. Dilute solutions of some disinfectants can be used as antiseptic
- C. Disinfectants are antimicrobial drugs
- D. Antiseptic medicines can be ingested

Answer: C



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34. If relative decrease in vapour pressure is 0.4 for a solution containing 1 mole of NaCl in 3 moles H_2O ,

NaCl is ... Ionised.

A. 0.6

B. 0.5

C. 1

D. 0.4

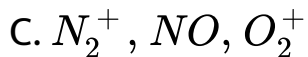
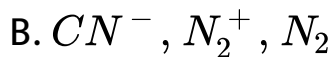
Answer: C



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35. In which of the following diatomic molecules/ions is the bond order of each molecule/ion=2.5?

A. O_2^+ , NO , CN^-



Answer: C



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36. Select the correct statement.

A. Osmosis, like all colligative properties, results from an increase in entropy as pure solvent

passes through the membrane and mixes with the solution

B. Desalination of sea-water is done by reverse osmosis

C. Both (a) and (b) are correct statement

D. none of these

Answer: C



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37. Which of the following statements is not correct?

- A. The oxidation number of S in $(NH_4)_2S_2O_8$ is +6
- B. The oxidation number of Os in OsO_4 is +8
- C. The oxidation number of S in H_2SO_5 is +8
- D. The oxidation number of I in KO_2 , is $-1/2$.

Answer: C



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38. Which of the following colligative property can provide molar mass of proteins (or polymers or colloids) with greatest precision?

A. Osmotic pressure

B. Elevation in boiling point

C. Depression in freezing point

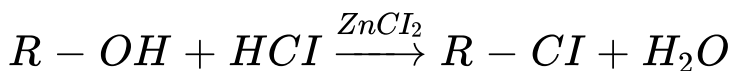
D. Relative lowering of vapour pressure

Answer: A



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39. What is the correct order of reactivity of alcohols in the following reaction ?



A. $1^\circ > 2^\circ > 3^\circ$

B. $1^\circ < 2^\circ > 3^\circ$

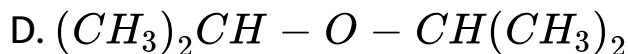
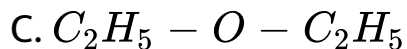
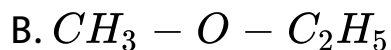
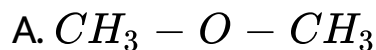
C. $3^\circ > 2^\circ > 1^\circ$

D. $3^\circ > 1^\circ > 2^\circ$.

Answer: C

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40. $C - O - C$ bond angle would be maximum in



Answer: D



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41. What is the role of activated charcoal in gas mask used in coal mines?

- A. Absorption of poisonous gases
- B. Adsorption of poisonous gases
- C. Neutralisation of gases
- D. None of the above

Answer: B



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42. Which of the following statement is false about sucrose?

- A. It is also called table sugar
- B. It may be fermented by yeast to produce alcohol
- C. it reduces Fehling's solution
- D. It does not reduce Tollens' reagent

Answer: C



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43. The amino acids are the end-products of the digestion of

A. lipid

B. fats

C. protein

D. alcohol

Answer: C



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44. Cholesterol that is present in the blood serum is closely associated with

- A. hardening of the arteries
- B. overactive kidneys
- C. diabetes
- D. osteoperosis

Answer: A



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45. Which of the following statement is incorrect?

- A. Cationic detergents have germicidal properties
- B. Bacteria can degrade the detergents containing highly branched chains
- C. some synthetic detergents can give foam even in ice cold water
- D. Synthetic detergents are not soaps.

Answer: B

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46. Non-stoichiometric hydrides are

- A. hydrides of all d-block elements
- B. deficiencies in hydrogen
- C. the hydrides having hydrogen atom in interstitial sites
- D. both (b) and (c)

Answer: D



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47. Vulcanisation makes rubber

- A. more elastic

B. soluble in inorganic solvent

C. crystalline

D. less stiff

Answer: A



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