



CHEMISTRY

BOOKS - MHTCET PREVIOUS YEAR PAPERS AND PRACTICE PAPERS

MHTCET 2016

Chemistry

1. If 'n' represents total number of asymmetric carbon atoms in a compound, then the

possible number of optical isomers of the compound is

A. $2n$

B. n^2

C. 2^n

D. $2n + 2$

Answer: C



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2. The equation that represents general van't Hoff equation is

A. $\pi = \frac{n}{V}RT$

B. $\pi = nRT$

C. $\pi = \frac{V}{n}RT$

D. $\pi = nVRT$

Answer: A



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3. Which is the most stable allotrope of sulphur?

A. Octahedral sulphur

B. Monoclinic sulphur

C. Plastic sulphur

D. Colloidal sulphur

Answer: A



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4. Correct statement for thermoplastic polymer is

A. It does not become soft on heating

under pressure

B. It cannot be remoulded

C. It is either linear or branched chain

polymer

D. It is a cross-linked polymer

Answer: C



5. How many Faradays of electricity are required to deposit 10 g of calcium from molten calcium chloride using inert electrodes? (Molar mass of calcium = 40g mol^{-1})

A. $0.5F$

B. $1F$

C. $0.25F$

D. $2F$

Answer: A



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6. Name the reagent that is used in leaching of gold.

- A. Carbon
- B. Sodium cyanide
- C. Carbon monoxide
- D. Iodine

Answer: B



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7. Which of the following is not an analgesic?

A. Ofloxacin

B. Penicillin

C. Aminoglycosides

D. Paracetamol

Answer: D



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8. The compound which is not formed when a mixture of n-butyl bromide and ethyl bromide treated with sodium metal in the presence of dry ether is

A. butane

B. octane

C. hexane

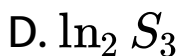
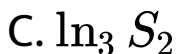
D. ethane

Answer: D



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9. What is the general molecular formula of the products obtained on heating lanthanoids (Ln) with sulphur?



Answer: D



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10. Butylated hydroxy anisole is a/an

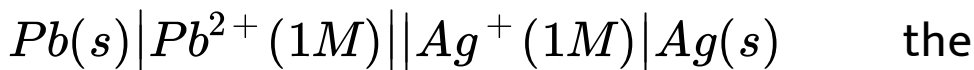
- A. antioxidant
- B. cleansing agent
- C. disinfectant
- D. antihistamine

Answer: A

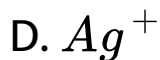
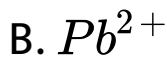


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11. In the cell represented by



reducing agent is



Answer: A



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12. Which metal crystallises in a simple cubic structure ?

A. Polonium

B. Copper

C. Nickel

D. Iron

Answer: A



13. The amine 'A' when treated with nitrous acid gives yellow oily substance. The amine A is

- A. triethylamine
- B. trimethylamine
- C. aniline
- D. methylphenylamine

Answer: D



14. The element that does not form acidic oxide is

A. carbon

B. phosphorus

C. chlorine

D. barium

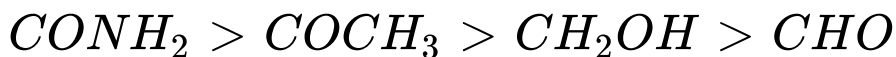
Answer: D



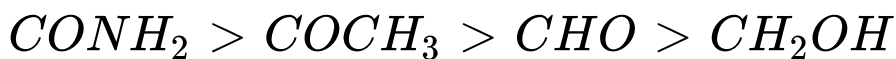
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15. While assigning R,S configuration the correct order of priority of groups attached to chiral carbon atom is

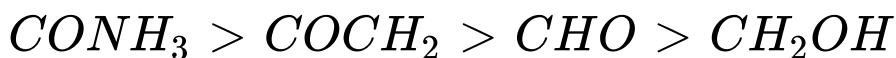
A.



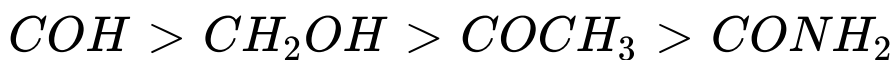
B.



C.



D.



Answer: B



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16. Bulletproof helmets are made from

A. lexan

B. saran

C. glyptal

D. thiokol

Answer: A



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17. Which metal is refined by Mond's process?

A. Titanium

B. Copper

C. Nickel

D. Zinc

Answer: C



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18. Isopropyl methyl ether when treated with cold hydrogen iodide gives

- A. isopropyl iodide and methyl iodide
- B. isopropyl alcohol and methyl iodide
- C. isopropyl alcohol and methyl alcohol
- D. isopropyl iodide and methyl alcohol

Answer: B



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19. In face centred cubic unit cell, what is the volume occupied?

A. $\frac{4}{3}\pi r^3$

B. $\frac{8}{3}\pi r^3$

C. $\frac{16}{3}\pi r^3$

D. $\frac{64r^3}{3\sqrt{3}}$

Answer: C



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20. Glucose on oxidation with bromine water yields gluconic acid. This reaction confirms the presence of

- A. six carbon atoms linked in straight chain
- B. secondary alcoholic group in glucose
- C. aldehyde group in glucose
- D. primary alcoholic group in glucose

Answer: C



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21. How is sodium chromate converted into sodium dichromate in the manufacture of potassium dichromate from chromite ore?

- A. By the action of concentrated sulphuric acid
- B. By roasting with soda ash
- C. By the action of sodium hydroxide

D. By the action of limestone

Answer: A



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22. In dry cell, what acts as a negative electrode?

A. Zinc

B. Graphite

C. Ammonium chloride

D. Manganese dioxide

Answer: A



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23. Select the compound which on treatment with nitrous acid liberates nitrogen.

A. Nitroethane

B. Triethylamine

C. Diethylamine

D. Ethylamine

Answer: D



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24. 5.0 g of sodium hydroxide (molar mass 40 g mol) is dissolved in little quantity of water and the solution is diluted upto 100 mL. What is the molarity of the resulting solution?

A. 0.1 mol dm^{-3}

B. 1.0 mol dm^{-3}

C. $0.125 \text{ mol dm}^{-3}$

D. 1.25 mol dm^{-3}

Answer: D



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25. Which of the following compound when treated with dibenzyl cadmium yields benzyl methyl ketone?

A. Acetone

B. Acetaldehyde

C. Acetic acid

D. Acetyl chloride

Answer: D



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26. Which halide of magnesium has highest ionic character?

A. Chloride

B. Bromide

C. Iodide

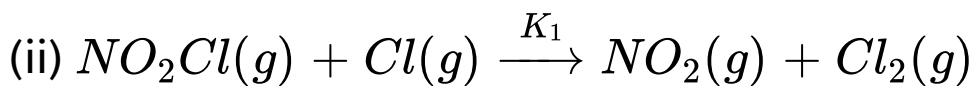
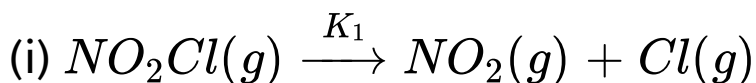
D. Fluoride

Answer: D



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27. The reaction takes place in two steps as



A. $NO_2Cl(g)$

B. $NO_2(g)$

C. $Cl_2(g)$

D. $Cl(g)$

Answer: D



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28. Which of the following amino acid is basic in nature ?

A. Valine

B. Tyrosine

C. Arginine

D. Leucine

Answer: C



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29. The law which indicates the relationship between solubility of a gas in liquid and pressure is _____

A. Raoult's law

B. van't Hoff- Boyle's law

C. van't Hoff- Charles' law

D. Henry's law

Answer: D



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30. Which among the following phenolic compounds is most acidic in nature?

A. p-aminophenol

B. Phenol

C. m-nitrophenol

D. p-nitrophenol

Answer: D



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31. Which among the following solid is a non-polar solid?

A. Hydrogen chloride

B. Sulphur dioxide

C. Water

D. Carbon dioxide

Answer: D



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32. Identify the metal that forms colourless compounds.

A. Iron ($Z = 26$)

B. Chromium ($Z = 24$)

C. Vanadium ($Z = 23$)

D. Scandium ($Z = 21$)

Answer: D



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33. What is the highest oxidation state exhibited by group 17 elements ?

A. + 1

B. + 3

C. + 5

D. + 7

Answer: D



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34. Mathematical equation of first law of thermodynamics for isochoric process is

A. $\Delta U = qv$

B. $-\Delta = qv$

C. $q = -W$

D. $\Delta U = W$

Answer: A



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35. Name the catalyst used in commercial method of preparation of phenol.

A. Silica

B. Calcium phosphate

C. Anhydrous aluminium chloride

D. Cobalt naphthenate

Answer: D



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36. The rate constant and half - life of a first order reaction are related to each other as _____.

$$\text{A. } t_{1/2} = \frac{0.693}{k}$$

$$\text{B. } t_{1/2} = 0.693$$

$$\text{C. } k = 0.693t_{1/2}$$

$$\text{D. } kt_{1/2} = \frac{1}{0.693}$$

Answer: A



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37. What is the combining ratio of glycerol and fatty acid when they combine to form triglyceride?

A. 3:4

B. 3:2

C. 1:3

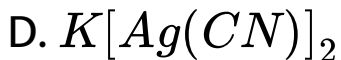
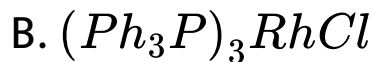
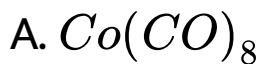
D. 1:2

Answer: C



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38. The molecular formula of Wilkinson's catalyst used in the hydrogenation of alkenes is



Answer: B



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39. The criterion for a spontaneous process is



B. $\Delta G < 0$

C. $\Delta G = 0$

D. $\Delta S_{Total} < 0$

Answer: B



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40. Brown ring test is used for detection of which radical?

A. Ferrous

B. Nitrite

C. Nitrate

D. Ferric

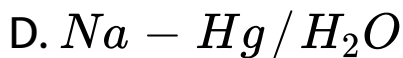
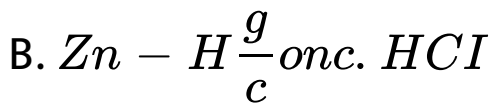
Answer: C



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41. The reagent used in Wolff-Kishner reduction is

A. $NH_2 - NH_2$ and KOH in ethylene glycol



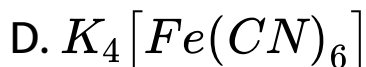
Answer: A



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42. Which of the following is a neutral complex?





Answer: A



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43. Identify the compound amongst the following of which 0.1 M aqueous solution has highest boiling point.

A. Glucose

B. Sodium chloride

C. Calcium chloride

D. Ferric chloride

Answer: D



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44. Which reagent is used in Etard reaction?

A. Chromyl chloride

B. Ethanoyl chloride

C. SnCl_2 and HCl

D. Cadmium chloride

Answer: A



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45. The most abundant noble gas in the atmosphere is

A. neon

B. argon

C. xenon

D. krypton

Answer: B



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46. Identify an extensive property amongst the following:

A. Viscosity

B. Heat capacity

C. Density

D. Surface tension

Answer: B



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47. Which of the following carboxylic acids is a tricarboxylic acid?

A. Oxalic acid

B. Citric acid

C. Succinic acid

D. Adipic acid

Answer: B



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48. Average rate of reaction for the following reaction, $2SO_2(g) + O_2(g) \rightarrow 2SO_3(g)$ is written as

A. $\frac{\Delta[SO_2]}{\Delta t}$

B. $-\frac{\Delta[O_2]}{\Delta t}$

C. $\frac{1}{2} \frac{\Delta[SO_2]}{\Delta t}$

D. $\frac{\Delta[SO_3]}{\Delta t}$

Answer: B



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49. What is the amount of work done when 0.5 mole of methane, $CH_4(g)$ is subjected to

combustion at 300 K? (given,

$$R = 8.314 \text{ J K}^{-1} \text{ mol}^{-1})$$

A. -2494 J

B. -4988 J

C. $+4988 \text{ J}$

D. $+2494 \text{ J}$

Answer: D



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50. Primary nitroalkanes are obtained in good yield by oxidising aldoximes with the help of

A. trifluoroperoxy acetic acid

B. acidified potassium permanganate

C. concentrated nitric acid

D. potassium dichromate and dilute sulphuric acid

Answer: A



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