



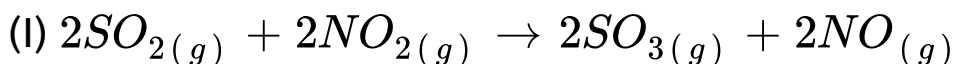
# CHEMISTRY

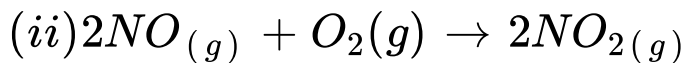
## BOOKS - MHTCET PREVIOUS YEAR PAPERS AND PRACTICE PAPERS

### MHTCET 2018

#### Chemistry

1. A certain reaction occurs in two steps as





In the reaction ,\_\_\_\_\_.

A.  $NO_2(g)$  is intermediate

B.  $NO(g)$  is intermediate

C.  $NO(g)$  is catalyst

D.  $O_2(g)$  is intermediate

**Answer: B**



**Watch Video Solution**

2. Which among the following equations represents the first law of thermodynamics under isobaric conditions ?

A.  $\Delta U = q_p - p_{ex} \cdot \Delta V$

B.  $q_v = \Delta U$

C.  $\Delta U = W$

D.  $W = -q$

**Answer: A**



**Watch Video Solution**

3. During galvanisation of iron, which metal is used for coating iron surface ?

A. Copper

B. Zinc

C. Nickel

D. Tin

**Answer: B**



**Watch Video Solution**

4. Formation of  $PCl_3$  is explained on the basis of what hybridisation of phosphorus atom?

A.  $sp^2$

B.  $sp^3$

C.  $sp^3d$

D.  $sp^3d^2$

**Answer: B**



**Watch Video Solution**

5. Identify the element that forms amphoteric oxide.

A. Carbon

B. Zinc

C. Calcium

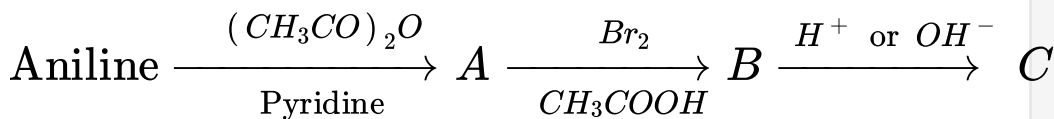
D. Sulphur

**Answer: B**



**Watch Video Solution**

6. Identify the product 'C' in the following reaction.



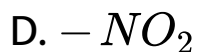
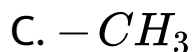
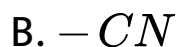
- A. Acetanilide
- B. p-bromoacetanilide
- C. p-bromoaniline
- D. o-bromoaniline

Answer: C



Watch Video Solution

7. Identify the functional group that has electron donating inductive effect.



**Answer: C**



**Watch Video Solution**



8. Which among the following metals crystallise as a simple cube ?

A. Polonium

B. Iron

C. Copper

D. Gold

**Answer: A**



**View Text Solution**

9. Which among the following oxoacids of phosphorus shows a tendency of disproportionation ?

- A. Phosphinic acid ( $H_3PO_2$ )
- B. Orthophosphoric acid ( $H_3PO_4$ )
- C. Phosphonic acid ( $H_3PO_3$ )
- D. Pyrophosphoric acid ( $H_4P_2O_7$ )

**Answer: C**



**Watch Video Solution**

10. What is the oxidation number of gold in the complex  $[AuCl_4]^{1-}$  ?

A. +4

B. +3

C. +2

D. +1

**Answer: B**



**Watch Video Solution**

11. Which symbol replaces the unit of atomic mass, amu ?

A. u

B. A

C. M

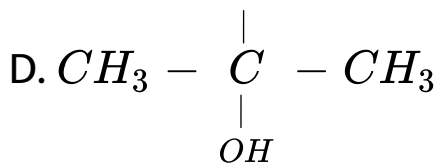
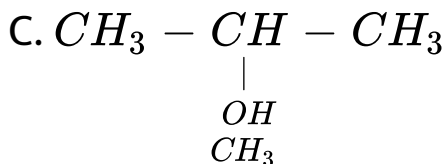
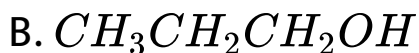
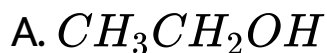
D. n

**Answer: A**



**Watch Video Solution**

12. Which of the following compounds reacts immediately with Lucas reagent ?



Answer: D



Watch Video Solution

13. What is the catalyst used for oxidation of  $SO_2$  to  $SO_3$  in lead chamber process for manufacture of sulphuric acid ?

- A. Nitric oxide
- B. Nitrous oxide
- C. Potassium iodide
- D. Dilute HCl

**Answer: A**



**Watch Video Solution**

14. The number of moles of electrons passed when current of 2 A is passed through an solution of electrolyte for 20 minutes is \_\_\_\_\_.

A.  $4.1 \times 10^{-4} \text{mole}^{-}$

B.  $1.24 \times 10^{-2} \text{mole}^{-}$

C.  $2.487 \times 10^{-2} \text{mole}^{-}$

D.  $2.487 \times 10^{-1} \text{mole}^{-}$

**Answer: C**



**Watch Video Solution**

15. The molarity of urea (molar mass  $60 \text{ g mol}^{-1}$ ) solution by dissolving  $15 \text{ g}$  of urea in  $500 \text{ cm}^3$  of water is

A.  $2 \text{ mol dm}^{-3}$

B.  $0.5 \text{ mol dm}^{-3}$

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

D.  $0.0005 \text{ mol dm}^{-3}$

**Answer: B**



**Watch Video Solution**



16. Which carbon atom of deoxyribose sugar in DNA

does not contain  $\begin{array}{c} | \\ -C- \\ | \end{array}$  OH bond ?

A.  $C_5$

B.  $C_3$

C.  $C_2$

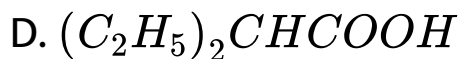
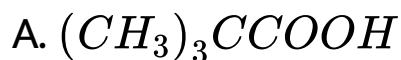
D.  $C_1$

**Answer: C**



**Watch Video Solution**

17. Which of the following carboxylic acids is most reactive toward esterification ?



**Answer: C**



**View Text Solution**

**18. Molarity is**

A. the number of moles of solute present in

$1\text{dm}^3$  volume of solution

B. the number of moles of solute dissolved in 1

kg of solvent

C. the number of moles of solute dissolved in 1

kg of solution

D. the number of moles of solute dissolved in

$100\text{dm}^3$  volume of solution

**Answer: A**



[View Text Solution](#)

19. Which of the following is a tricarboxylic acid ?

A. Citric acid

B. Malonic acid

C. Succinic acid

D. Malic acid

**Answer: A**



[Watch Video Solution](#)

20. What is the number of donor atoms in dimethylglyoxinato ligand ?

A. 1

B. 2

C. 3

D. 4

**Answer: B**



**Watch Video Solution**

21. In which substance does nitrogen exhibit the lowest oxidation state ?

- A. Nitrogen gas
- B. Ammonia
- C. Nitrous oxide
- D. Nitric oxide

**Answer: B**



**View Text Solution**

22. Which of the following is most reactive towards addition reaction of hydrogen cyanide to form corresponding cyanohydrin ?

A. Acetone

B. Formaldehyde

C. Acetadehyde

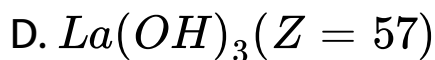
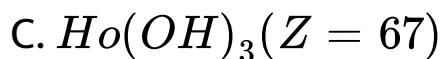
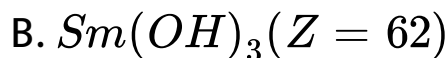
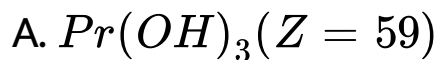
D. Diethylketone

**Answer: B**



**Watch Video Solution**

23. The most basic hydroxide from following is



**Answer: D**



**View Text Solution**

24. What is the SI units of density ?



A.  $\text{g cm}^{-3}$

B.  $\text{gm}^{-3}$

C.  $\text{kg m}^{-3}$

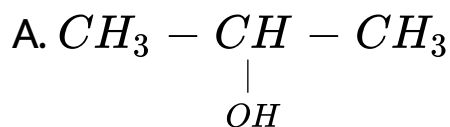
D.  $\text{kg cm}^{-3}$

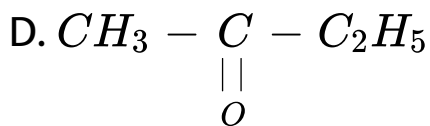
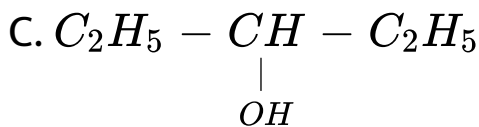
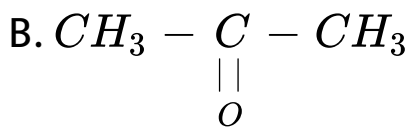
**Answer: C**



**View Text Solution**

25. Which of the following compounds does not undergo haloform reaction ?





**Answer: C**



**Watch Video Solution**

**26.** Two moles of an ideal gas are allowed to expand from a volume of  $10\text{dm}^3$  to  $m^3$  at 300 K against a pressure of 101.325 kPa. Calculate the work done

A.  $-20.16kJ$

B.  $13.22kJ$

C.  $-810.6J$

D.  $-18.96kJ$

**Answer: A**



**View Text Solution**

**27.** In which among the following solids, Schottky defect is not observed ?

A. ZnS

B. NaCl

C. KCl

D. CsCl

**Answer: A**



**View Text Solution**

**28.** What are the products of auto - photolysis of water ?

A.  $H_2$  and  $O_2$

B. Steam

C.  $H_3O^+$  and  $OH^-$

D. Hydrogen peroxide

**Answer: A**



**View Text Solution**

**29.** Bauxite, the ore of aluminium is purified by which process ?

A. Hoop's process

B. Hall's process

C. Mond's process

D. Liquefaction process

**Answer: B**



**Watch Video Solution**

**30.** Phenol in presence of sodium hydroxide reacts with chloroform to form salicylaldehyde. The reaction is known as

The reaction is known as

A. Kolbe's reaction

B. Reimer-Tiemann reaction

C. Stephen reaction

D. Etard reaction

**Answer: B**



**Watch Video Solution**

**31.** Which among the following elements of groups-2 exhibits anomalous properties ?

A. Be

B. Mg

C. Ca

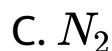
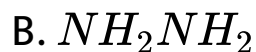
D. Ba

**Answer: A**



**Watch Video Solution**

**32.** Excess of ammonia with sodium hypochlorite solution in the presence of gule or gelatin gives





**Answer: B**



**View Text Solution**

**33.** What is the density of solution of sulphuric acid used as an electrolyte in lead accumulator ?

A.  $1.5\text{gmL}^{-1}$

B.  $1.2\text{gmL}^{-1}$

C.  $1.8\text{gmL}^{-1}$

D.  $2.0\text{gmL}^{-1}$

**Answer: B**



[Watch Video Solution](#)

**34.** Which of the following polymers is used to manufacture clothes for firefighters ?

A. Thiokol

B. Kevlar

C. Nomex

D. Dynel

**Answer: C**



[Watch Video Solution](#)

**35.** Which element is obtained in the pure form by van - Arkel method ?

A. Aluminium

B. Titanium

C. Silicon

D. Nickel

**Answer: B**



**Watch Video Solution**

36. Which of the following is not a tranquiliser ?

- A. Meprobamate
- B. Equanil
- C. Chlordiazepoxide
- D. Bromopheniramine

**Answer: D**



**Watch Video Solution**

37. Conversion of hexane into beznene involves the reaction of

A. hydration

B. hydrolysis

C. hydrogenation

D. dehydrogenation

**Answer: D**



**Watch Video Solution**

**38.** The element that does not exhibit allotropy is

A. phosphorus

B. arsenic

C. antimony

D. bismuth

**Answer: D**



**Watch Video Solution**

**39.** The of the following reactions is used to prepare aryl fluorides from diazonium salts and fluorides from diazonium salts and fluoroboric acid ?

A. Sandmeyer reaction

B. Balz-Schiemann reaction

C. Gattermann reaction

D. Swarts reaction

**Answer: B**



**Watch Video Solution**

**40.** The correct relation between elevation of boiling point and mass of solute is

$$\text{A. } m_2 = \frac{K_b \cdot w_2}{\Delta T_b \cdot w_1}$$

$$\text{B. } m_2 = \frac{K_b \cdot w_1}{\Delta T_b \cdot w_2}$$

$$C. M_2 = \frac{\Delta T_b \cdot K_b}{w_1 \cdot w_2}$$

$$D. M_2 = \frac{\Delta_b \cdot w_1}{K_b \cdot w_2}$$

**Answer: A**



**Watch Video Solution**

**41.** Which among the group-15 elements does not exist as tetra atomic molecule ?

A. Nitrogen

B. Phosphorus

C. Arsenic



D. Antimony

**Answer: A**



**Watch Video Solution**

**42.** Identify the monosaccharide containing only one asymmetric carbon atom in its molecule.

A. Ribulose

B. Ribose

C. Erythrose

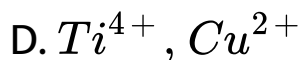
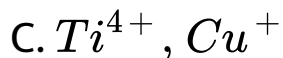
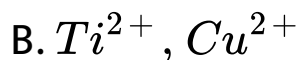
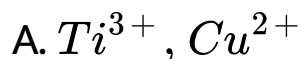
D. Glyceraldehyde

**Answer: D**



**Watch Video Solution**

**43.** Identify the oxidation states of titanium ( $Z=22$ ) and copper ( $Z=29$ ) in their colourless compounds.



**Answer: C**



Watch Video Solution

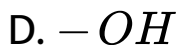
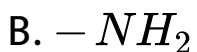
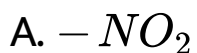
44. Arenes on treatment with chlorine in presence of ferric chloride as a catalyst undergo what type of reaction ?

- A. Electrophilic substitution
- B. Nucleophilic substitution
- C. Electrophilic addition
- D. Nucleophilic addition

**Answer: A**



45. In case of R, S configuration the group having highest priority is



**Answer: D**

46. Lactic acid and glycollic acid are the monomers used for preparation of polymer

A. nylon-2-nylon-6

B. dextran

C. PHBV

D. buna-N

**Answer: B**



**Watch Video Solution**

47. What is the geometry of water molecule ?

A. Distorted tetrahedral

B. Tetrahedral

C. Trigonal planar

D. Diagonal

**Answer: B**



**View Text Solution**

**48.** With which halogen the reactions of alkanes are explosive ?

A. Fluorine

B. Chlorine

C. Bromine

D. Iodine

**Answer: A**



**View Text Solution**

49. Calculate the work done during combustion of 0.138 kg of ethanol,  $C_2H_5OH(l)$  at 300 K.

Given :  $R=8.314 \text{ JK}^{-1}\text{mol}^{-1}$ , molar mass of ethanol =  $46\text{gmol}^{-1}$

A.  $-7482J$

B.  $7482J$

C.  $-2494J$

D.  $2494J$

**Answer: B**



**View Text Solution**



50. Slope of the straight line obtained by plotting  $\log_{10} k$  against  $1/T$  represents what term ?

A.  $-E_a$

B.  $-2303E_a/R$

C.  $-E_a/2303R$

D.  $-E_a/R$

**Answer: C**



**Watch Video Solution**