



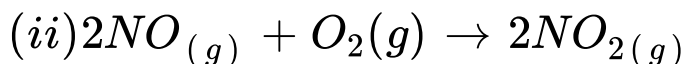
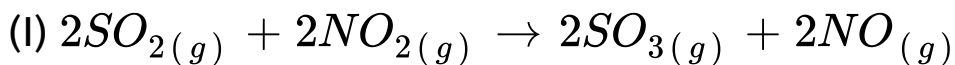
## CHEMISTRY

### BOOKS - MARVEL CHEMISTRY (HINGLISH)

#### QUESTION PAPER - 2018

##### Mcqs

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**



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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.  $\Delta V = W$

D.  $W = -q$

**Answer: A**



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**3.** During galvanisation of iron. Which metal is used for coating iron surface ?

A. Copper

B. Zine

C. Nickel

D. Tin

**Answer: B**



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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**



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5. Identify the element that forms amphoteric oxide.

A. Carbon

B. Zine

C. Calcium

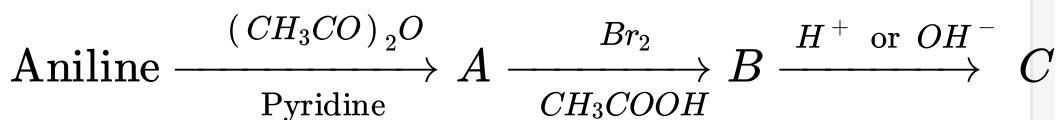
## D. Sulphur

Answer: B



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



A. Acetanitide

B. p- Bromoacetanilide

C. p- Bromoniline

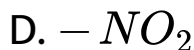
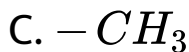
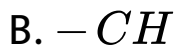
D. o- Bromoaniline

**Answer: C**



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



**Answer: C**



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

A. Polonium

B. Iron

C. Copper

D. Gold

**Answer: A**



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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**



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

A. +4

B. +3

C. +2

D. +1

**Answer: B**



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

A. u

B. A

C. M

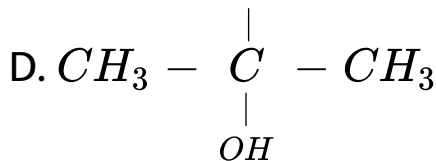
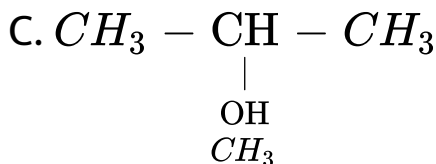
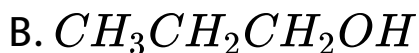
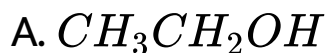
D. n

**Answer: A**



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



**Answer: D**



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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 oxide
- D. Dilute HCl

**Answer: A**



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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.  $4.1 \times 10^{-4} \text{ mol e}^{-}$

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

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

D.  $2.478 \times 10^{-1} \text{ mole}^{-}$

**Answer: C**



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**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**



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16. Which carbon atom of dextrose sugar in DNA

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

A.  $C_5$

B.  $C_3$

C.  $C_2$

D.  $C_1$

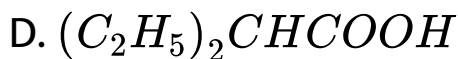
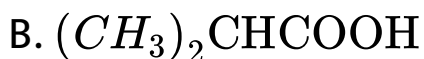
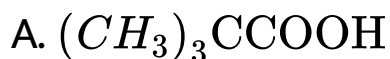
**Answer: C**



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



**Answer: C**



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**18.** Molarity is defined as

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**



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

A. Citric acid

B. Malonic acid

C. Succinic acid

D. Malic acid

**Answer: A**



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

A. 1

B. 2

C. 3

D. 4

**Answer: B**



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

A. Nitrogen gas

B. Ammonia

C. Nitrous oxids

D. Nitric oxide

**Answer: B**



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

A. Acetone

B. Formaldehyde

C. Acetaldehyde

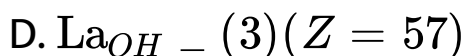
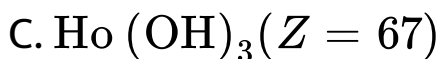
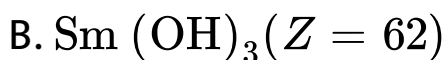
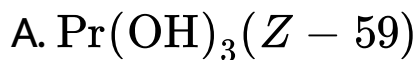
D. Diethylketone

**Answer: B**



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23. The most basic hydroxide from the following is



**Answer: D**



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24. Define density .What is the SI unit of density ?

(b) Define relative density .What is the SI unit of

relative density ?

The density of turpentine is  $840 \text{ kg/m}^3$ . What will be its relative density ? (Density of water  $= 1000 \text{ kg/m}^3$ )

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

B.  $\text{g m}^{-3}$

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

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

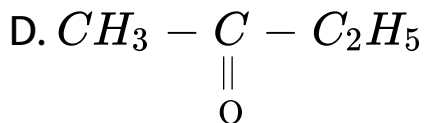
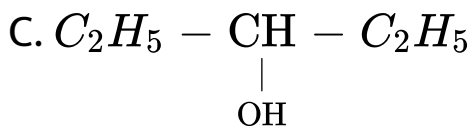
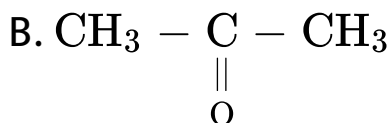
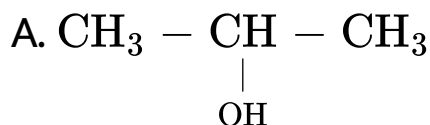
**Answer: C**



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



**Answer: C**



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26. Two moles of an ideal gas are allowed to expand from a volume of  $10\text{dm}^3$  to  $2\text{ m}^3$  at 300 K against a pressure of 101.325 kPa. Calculate the work done.

A.  $-210.6\text{kJ}$

B.  $13.22\text{kJ}$

C.  $-810.6\text{J}$

D.  $-10.96\text{kJ}$

**Answer: A**



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27. Among the following solids, Schottky defect is NOT observed in-

A. ZnS

B. NaCl

C. KCl

D. CsCl

**Answer: A**



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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**



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

- A. Hoope's process
- B. Hall's process
- C. Mond's process
- D. Liquation process

**Answer: B**



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**30.** Phenol in presence of sodium hydroxide reacts with chloroform to form salicylaldehyde.

The reaction is known as

- A. Kolbe's reaction
- B. Reimer - Tiemann reaction
- C. Stephen reaction
- D. Etard reaction

**Answer: B**



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

A. Be

B. Mg

C. Ca

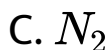
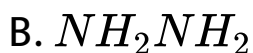
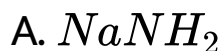
D. Ba

**Answer: A**



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32. Excess of ammonia with sodium hypochloride solution in the presence of glue or gelatine gives



**Answer: B**



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

A.  $1.5 \text{ g mL}^{-1}$

B.  $1.2 \text{ g mL}^{-1}$

C.  $1.8 \text{ g mL}^{-1}$

D.  $2.0 \text{ g mL}^{-1}$

**Answer: B**



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

A. Thiokol

B. Kevlar

C. Nomex

D. Dynel

**Answer: C**



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

A. Aluminium

B. Titanium

C. Silicon

D. Nickel

**Answer: B**



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**36.** Which of the following is not a tranwquilizer ?

A. Meprobamate

B. Equanil

C. Chlorodiazepoxide

D. Bromopheniramine

**Answer: D**



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**37.** Conversion of hexane into benzene involves the reaction of

- A. Hydration
- B. Hydrolysis
- C. Hydrogenation
- D. Dehydrogenation

**Answer: D**



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

A. Phosphorus

B. Arsenic

C. Antimony

D. Bismuth

**Answer: D**



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

- A. Sandmeyer reaction
- B. Balz - Schiemann reaction
- C. Gattermann reaction
- D. Swarte reaction

**Answer: B**



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

A.  $M_2 = \frac{K_b \cdot W_2}{\Delta T_b \cdot W_1}$

B.  $M_2 = \frac{K_b \cdot W_1}{\Delta T_b \cdot W_2}$

C.  $M_2 = \frac{\Delta T_2 \cdot K_2}{W_1 \cdot W_2}$

D.  $M_2 = \frac{\Delta T_b \cdot W_1}{K_b \cdot W_2}$

**Answer: A**



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

A. Nitrogen

B. Phosphorus

C. Arsenic

D. Antimony

**Answer: A**



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

A. Ribulose

B. Ribose

C. Erythrose

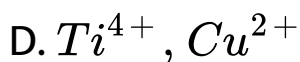
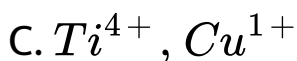
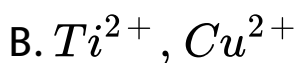
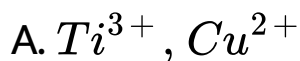
D. Glyceraldehyde

**Answer: D**



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



**Answer: C**



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

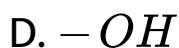
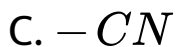
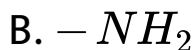
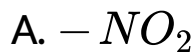
- A. Electrophilic substitution
- B. Nucleophilic substitution
- C. Electrophilic addition
- D. Nucleophilic addition

**Answer: A**



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



**Answer: D**



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

A. Nylon-2-nylon-6

B. Dextron

C. PHBV

D. Buna - N

**Answer: B**



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47. What is the geometry of water molecule ?

A. Distorted tetrahedral

B. Tetrahedral

C. Trigonal planar

D. Diagonal

**Answer: A**



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**48.** Which of the following reaction of alkanes is explosive ?

A. Fluorine

B. Chlorine

C. Bromine

D. Iodine

**Answer: A**



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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 =  $46 \text{ g mol}^{-1}$

A.  $-7482J$

B.  $7482J$

C.  $-2494J$

D.  $2494 \text{ J}$

**Answer: A**



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

A.  $-E_a$

B.  $-2.303E_a / R$

C.  $-E_a / 2.303R$

D.  $E_a / R$

**Answer: C**



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