

# BITSAT 2024 May 22 Memory-Based Question Paper

- Q.1 What is the salt which is used in permanent hardness?
- Q.2 Choose the correct figure of SO<sub>2</sub> and SO<sub>3</sub>.
- Q.3 SF<sub>3</sub> and SF<sub>4</sub> lone pairs
- Q.4 Where kinetic energy  $h\nu$  is  $\frac{3}{2}$  then find DE Broglie wavelength?
- Q.5 Sum of the series of 10 terms  $\frac{1}{2} + \frac{3}{4} + \frac{7}{8} + \dots$
- Q.6 Alkali stability order of NaCl, KCl, CsCl, LiCl.
- Q.7 In time 48 min the concentration is 0.02 and in 98 min conc is 0.04 what is the order?
- Q.8 Is H<sub>2</sub>O<sub>2</sub> a redox agent?
- Q.9 Structure of P<sub>5</sub> in gaseous state.
- Q.10 Nomenclature of compounds.
- Q.11 Ti(H<sub>2</sub>O)<sub>6</sub> absorbs wavelength of light, find which ligand can make it absorb light at certain wavelength and absorb light beyond a certain wavelength?
- Q.12 Which of the following compounds will give the same amount of CO<sub>2</sub> on combustion?  
a) Benzene Toluene  
b) Benzene 1,3,5 Hexatriene  
c) Toluene Xylene  
d) Nitrobenzene Toluene
- Q.13 A bag contains 16 balls (4 red balls and others) The probability of getting at least 3 red balls.
- Q.14 10 Coins are simultaneously tossed find the probability of finding atmost one head.
- Q.15 A ball is given velocity V so that it reaches 1000m above earth's surface. Find the velocity V' so that the ball reaches 2000m above earth's surface (Radius of earth is 6000m).
- Q.16 Which type of hydrides do most of d and f block elements form?
- Q.17 Two balls one is thrown up and the second ball is thrown down with same velocity When the balls reach with V<sub>a</sub> and V<sub>b</sub> on the ground what is the Relation between V<sub>a</sub> and V<sub>b</sub>?
- Q.18  $\sin^4 x + \cos^4 x > \frac{1}{2}$  find the interval where this inequality holds.

Q.19 There is a first order reaction the rate constant is  $2 \times 10^{-2}$  the initial concentration is  $2 \times 10^{-2}$  then what is the final concentration after 100s.