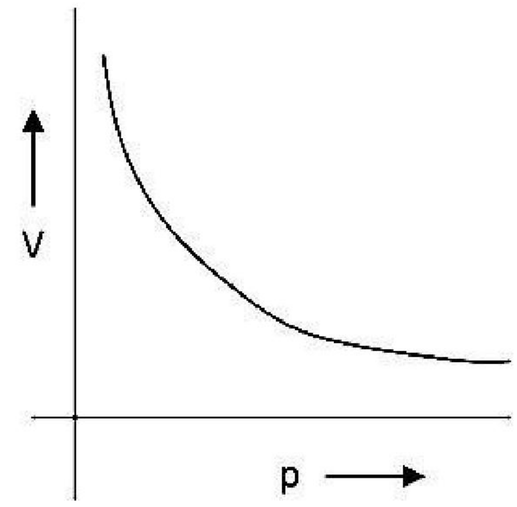
CHEMISTRY

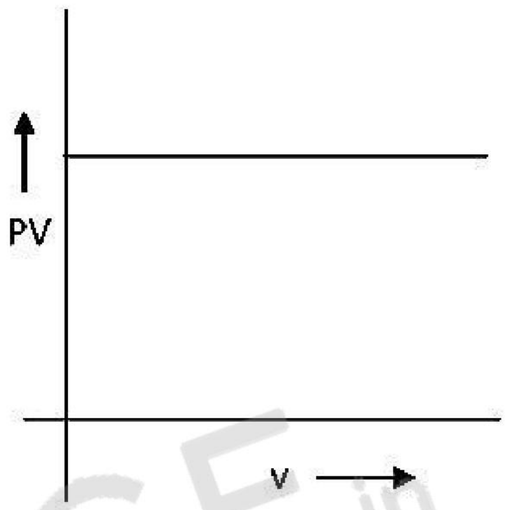
QUESTION SET –4

1. Some graphs are given below

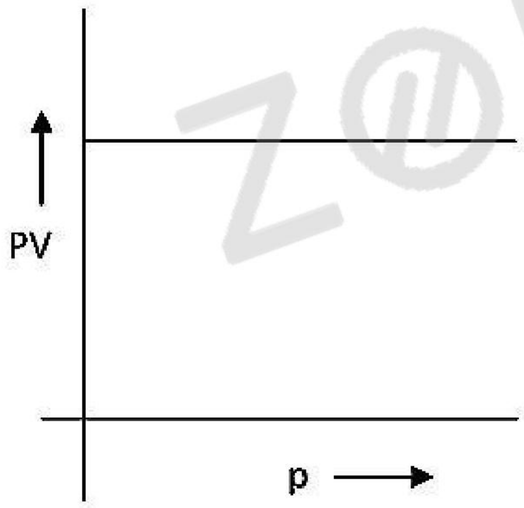
I.



II.



III.



Which of the above graph represents Boyle's law?

a. I and II b. I and III c. II and III d. II, II, III

2. Which is an extensive property?

a. Temperature b.Chemical Potential

c.Gibbs free energy d.Molar volume

3. Which one of the following is a disproportionate reaction?

a. $2H_2SO_4 + Cu \rightarrow CuSO_4 + 2H_2O + SO_2$

b. $As_2O_3 + 3H_2S \rightarrow As_2S_3 + 3H_2O$

c. $2KOH + Cl_2 \rightarrow KCl + KOCl + H_2O$

d. $Ca_3P_2 + 6\ H_2O \rightarrow 3\ Ca(OH)_2 + 2PH_3$

4. Hydrogen is prepared by the reaction of

a. crystal zinc with dilute HCl

b. granulated zinc with dil.HCl

c. granulated zinc with conc..HCl

d. crystal zinc with conc. HCl

5. The correct expression for the de-Broglie relationship is
   a. $\lambda = (h/mv)$ b. $p = (h/mv)$
   c. $\lambda m = (v/p)$ d. $\lambda = (h/p)$
6. Global warming can be controlled by
   a. reducing deforestation, cutting down use of fossil fuel.
   b. reducing reforestation, increasing the use of fossil fuel
   c. increasing deforestation ,slowly down the growth of human population.
   d. increasing deforestation , reducing efficiency of energy usage
7. Find out the millimoles of N_2 gas that is dissolved in 1 L of water if the N_2gas is bubbled through water at 298K.
   (partial pressure of $N_2$is 0.987 bar, Henry's law constant is 76.48kbar)
   a. 0.129 mmol b.0.716mmol
   c. 1.29 mmol d.7.16 mmol
8. Select the solution of highest conductivity
   a. 0.1 M NaCl b.0.1M HCl
   c. 0.1M KNO_3 d.0.1M CH_3COOH
9. Purification of colloidal solution is carried out by
   a. Dialysis b. Elecctrodialysis
   c.Ultrafiltration d.All of the above
10. Which of the following gives an aldehyde on dry distillation?
    a.Calciumformate + Calcium acetate b. Calcium acetate+ Calcium benzoate
    c. Calcium acetate d. Calcium benzoate
11. Which one of the following is a chain growth polymer?
    a.Starch b.Nuceic acid
    c.Polystyrene d.Protein
12. Organometalic complexes, the M-C bond is
    a. covalent b.ionic
    c. covalent with ionic character d.dative covalent bond
13. Which of the following molecules have dipole moment zero?
    a.HF b. H_2O
    c.BF_3 c. $CHCl_3$
14. Outer electronic configuration of *f*- block elements is
    a. $(n + 1)f^{1-14}(n - 1)d^{0-1}ns^2$
    b. $(n + 1)f^{1-14}(n + 1)d^{0-1}ns^2$
    c. $(n - 2)f^{1-14}(n-1)d^{0-1}ns^2$
    d. None of the above
15. A gas has molecular formula $(CH)_n$. If vapour density of the gas is 39, what should be the formula of the compound?
    a. CH_4 b. C_3H_8
    c. C_2H_6 d. C_6H_6
16. A compound 'X' with molecular formula C_3H_8O can be oxidized to a compound 'Y' with the molecular formula $C_3H_6O_2$. 'X' is most likely to be a

(a) Primary alcohol

(b) sec- alcohol

(c)Aldehyde

(d)Ketone

17. IUPAC name of CH_2=CH-CH_2-C≡CH is:

a) pent-1-en-4-yne
b) pent-4-en-1-yne
c) pent-4-yn-1-ene
d) pent-1-yn-4-en

. 18. Hardness of water is due to the presence of

a) Chlorides of Calcium and Magnesium

b) Sulphates of Calcium and Magnesium

c) Chlorides &sulphates of Calcium and Magnesium

d) Chlorides, Sulphates, Carbonates & Bicarbonates of Calcium and Magnesium

19. The alloy bronze is a mixture of

a) Cu & Zn
b) Cu & Sn
c) Fe & C
d) Al & Mg

20. Which of the following acid can show optical isomerism?

(a)2,2-Dimethylpropanic acid

(b)2-methylpropanoic acid

(c)2-methylbutanoic acid

(d)Ethanoic acid