

Group - I

Chemistry (Objective Type)

Time: 20 Minutes

Marks: 17

NOTE: Write answers to the questions on objective answer sheet provided. Four possible answers A, B, C & D to each question are given. Which answer you consider correct, fill the corresponding circle A, B, C or D given in front of each question with marker or pen ink on the answer sheet provided.

- Quantum number value for 2S orbitals are:
 - $n = 2, l = 1$
 - $n = 1, l = 2$
 - $n = 1, l = 0$
 - $n = 2, l = 0$
- Which of the following species has unpaired electrons in the antibonding bonding molecular orbitals?
 - O_2^{-2}
 - N_2^{2-}
 - B_2
 - F_2
- Geometry of H_2O on the basis of VSEPR theory.
 - Linear
 - Trigonal planer
 - Tetrahedral
 - Bent
- The net heat change in a chemical reaction is same, whether it is brought about in two or different ways in one or several steps. It is known as.
 - Henry law
 - Joul's law
 - Hess's law
 - Law of conservation of energy
- For which system, does the equilibrium constant K_c has no units.
 - $N_2 + 3H_2 \rightleftharpoons 2NH_3$
 - $H_2 + I_2 \rightleftharpoons 2HI$
 - $2NO_2 \rightleftharpoons N_2O_4$
 - None of these
- Colligative properties are the properties of:
 - Dil solution which behave as nearly ideal solutions
 - Concentrated solution which behave as nearly non-ideal solution
 - Both (A) and (B)
 - None of there
- If the salt bridge is not used between half cells, then the voltage.
 - Decrease rapidly
 - Decrease slowly
 - Does not change
 - Drops to Zero
- If the equation at reaction $2A + B \rightarrow \text{Product}$ A is present in large excess, then order of reaction is.

$$\text{rate} = K[A]^2[B]$$
 - 1
 - 2
 - 3
 - 4
- One mole of SO_2 contain:
 - 6.02×10^{23} atoms of oxygen
 - 1.81×10^{23} molecule of SO_2
 - 6.02×10^{23} atoms of Sulphur
 - 4gram atoms of SO_2
- A limiting reactant is one which is:
 - Taken is small amount in gram as compared to other reactant
 - Taken in lesser amount in volume as compared to other reactant.
 - Give the maximum amount of product
 - Give minimum amount of product
- A filtration process could be very time consuming if it were not aided by suction which is developed:
 - If the paper covers the funnel up to the circumference
 - If the paper has got small sized pores in it
 - If the stem at the funnel in large so that it dips into the filtrate
 - If the paper fits tightly
- Solvent extraction is an equilibrium process and is controlled by.
 - Law of Mass action
 - Amount of solvent used
 - Partition law
 - Amount of solute
- Pressure remain constant, at which temperature the volume of gas will become twice of what it is at $0^\circ C$.
 - $546^\circ C$
 - $200^\circ C$
 - 546 K
 - 273 K
- The order of rate of diffusion of gases NH_3 , SO_2 , Cl_2 and CO_2 is:
 - $NH_3 > SO_2 > Cl_2 > CO_2$
 - $NH_3 > CO_2 > SO_2 > Cl_2$
 - $Cl_2 > SO_2 > CO_2 > NH_3$
 - $NH_3 > CO_2 > Cl_2 > SO_2$
- In order to raise the boiling point at H_2O up to $110^\circ C$, the external pressure should be.
 - Between 760 torr and 1200 torr
 - Between 200 torr and 760 torr
 - 576 torr
 - At any pressure
- Amorphous solids:
 - Have shape melting point
 - Under go clean cleavage when cut with knife
 - Have perfect arrangement of atoms
 - Have small region of orderly arrangement of atom
- The value of charge on electron is:
 - 2.602×10^{-19} Coulombs
 - 1.602×10^{-19} Coulombs
 - 1.6023×10^{-19} Coulombs
 - $1.602 \times 10^{-19} Kg$