

FBD-11-19-2-19

Roll No. _____

Objective
Paper Code
6488Intermediate Part First (New Scheme)
CHEMISTRY (Objective) GROUP - II
Time: 20 Minutes Marks: 17

Q.No.1

You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill the relevant circle in front of that question number on computerized answer sheet. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question. Attempt as many questions as given in objective type question paper and leave other circles blank.

S.#	Questions	A	B	C	D
1	Splitting of spectral lines of hydrogen atoms under magnetic field is called:	Stark effect	Zeeman effect	Compton effect	Splitting effect
2	When up to 6d orbitals are filled with electrons, next entering electron goes to:	7s	7p	7d	7f
3	Ammonia (NH ₃) shows maximum boiling point among hydrides of group 5A, it is due to:	Very small size of N atom	Least electronegative character of N atom	Most electronegative character of N atom	Pyramidal structure of NH ₃ molecule
4	In order to mention the boiling point of water at 110°C, the external pressure should be:	Between 200 torr & 760 torr	Between 760 torr & 1200 torr	765 torr	760 torr
5	The molar volume of O ₂ gas is maximum at:	STP	127°C and 1 atm	0.00°C and 2 atm	273°C and 2 atm
6	Considering van der Waals constant "a" and "b", a real gas behaves as ideal if:	Both "a" and "b" are large	Both "a" and "b" are small	"a" is large but "b" is small	"a" is small but "b" is large
7	The comparative rate at which solute travels on chromatographic paper depends upon:	R _f value	The size of paper	Mobile phase	Temperature
8	During combustion analysis CO ₂ produced is absorbed by:	Mg(ClO ₄) ₂	KOH(50%)	CaCl ₂	P ₂ O ₅
9	Fractional atomic mass is mainly due to:	Mass of atom is in fraction	Atomic mass is average mass of isobars	Elements mostly consist of isotopes having different fractional abundances	Atomic mass is average masses of isotopes
10	The rate law of a reaction is rate = k [A] ² [B], if "A" is in large excess then order of reaction is:	2	3	4	5
11	Oxidation number of Cr in K ₂ Cr ₂ O ₇ is:	-2	+3	+6	+7
12	Molarity of pure water is:	1.00	6.00	18.0	55.5
13	An azeotropic mixture of two liquids boils at lower temperature than either liquid when:	It shows negative deviation from Raoult's law	It shows positive deviation from Raoult's law	It is metastable	It is saturated
14	The pH of 1.0 × 10 ⁻³ M H ₂ SO ₄ solution is:	1.5	2.0	2.7	3.0
15	While q _p is heat at constant pressure, q _v is heat at constant volume then the relationship most probably correct is:	q _p = q _v	q _p + q _v = 0	q _p < q _v	q _p > q _v
16	Which species has unpaired electrons in its molecular orbitals	B ₂	F ₂	N ₂	O ₂
17	Which molecule has zero dipole moment	BF ₃	CHCl ₃	HOCl	NH ₃

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CHEMISTRY (Subjective) GROUP - II

Time: 02:40 Hours

Marks: 68

SECTION - I

2. Write short answers of any EIGHT parts.

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- Define gram atom and gram formula.
- 2g H_2 , 16g CH_4 , 44g CO_2 occupy same volume. Why?
- How efficiency of chemical reaction be expressed?
- How crystals are derived by using filter paper?
- Why there is need to crystallize crude products?
- State Joule-Thomson effect.
- H_2 and He cannot be liquefied by Lind's method. Why?
- Define the terms critical temperature and critical pressure.
- Give general principle of liquefaction of gasses.
- Relative lowering in vapour pressure is independent of temperature. Explain.
- Define hydrates. How are they formed?
- Why hydration energy of Mg^{2+} ion is higher than Na^+ ion?

3. Write short answers of any EIGHT parts.

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- Define dipole-dipole forces. Give examples.
- What is polarizability? How it affects London dispersion forces?
- HF is a weaker acid than HCl , HBr , HI . Justify it.
- Why evaporation causes cooling?
- Write any two properties of positive rays.
- Calculate the mass of electron with help of e/m .
- Write two defects of Rutherford atomic model.
- What is continuous spectrum? Give example.
- Differentiate between reversible and irreversible reaction.
- How direction of reaction is determined by K_c ?
- Define average and instantaneous rate of reaction.
- Describe specific rate constant or velocity constant of a reaction.

4. Write short answers of any SIX parts.

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- 75.4pm is compromise distance between two hydrogen atoms. Why?
- Why dipole moment of CO_2 is zero but that of CO is 0.12D?
- Why energy of antibonding molecular orbitals are greater than that of bonding molecular orbitals?
- Discuss the trend of ionization energy in periodic table.
- Describe spontaneous process. Give an example.
- Define enthalpy of atomization. Give an example.
- Lead accumulator is a chargeable battery. Justify.
- Give difference between electrolytic and voltaic cell.
- How copper can be purified?

SECTION - II Attempt any THREE questions. Each question carries 08 marks.

- (a) Define actual yield and theoretical yield. Why the actual yield is lesser than theoretical yield? Also give the formula to calculate the percent yield. 04
(b) Write four properties of covalent solids. 04
- (a) Calculate the density of CH_4 at $0^\circ C$ and one atmospheric pressure. 04
(b) Derive radius of revolving electron in n th orbit of H-atom on the basis of Bohr's atomic model. 04
- (a) Explain the structure of the given compounds with the help of V.S.E.P.R theory (i) NH_3 (ii) H_2O 04
(b) How do you measure the heat of combustion of substance by Bomb Calorimeter? 04
- (a) $N_2(g)$ and $H_2(g)$ combine to give $NH_3(g)$. The value of K_c in this reaction at $500^\circ C$ is 6.0×10^{-2} . 04
Calculate the value of K_p for this reaction. 04
(b) Discuss any four factors which influence the rates of chemical reactions. 04
- (a) Write the rules for assigning oxidation number to an element in a compound 04
(b) How is lowering in vapour pressure as colligative property used to find out molecular mass of solutes? 04

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