

Time: One Hour

Max. Marks: 25

Instruction:

- Solve any 25 questions

- The radiations given out by the blackbody is dependent on the ...
(A)temperature of the cavity (B)nature of the interior material (C)both the temperature and internal material of cavity (D)none of the above
- According to Plank radiation law, the oscillator absorbs energy
(A)continuously (B)discontinuously (C)constantly (D)none of the above
- The photoelectric effect is shown by
- According to Compton effect, the scattered radiation havethan the incident radiation
(A)greater wavelength (B)shorter wavelength (C)equal wavelength (D)constant wavelength
- The splitting of spectral lines in magnetic field is called ...
(A)Stark effect (B)Zeeman effect (C)Compton effect (D)Photoelectric effect
- According to de Broglie's hypothesis, the wavelength of a particle in motion is ----- to its momentum
(A)inversely proportional (B)directly proportional (C)equal (D)none of the above
- A photochemical reaction takes place by the absorption of ...
(A)visible and ultraviolet radiations (B)infrared radiations (C)heat energy (D)none of above
- According to Plank radiation law, the oscillator absorbs energy
(A)continuously (B)discontinuously (C)constantly (D)none of the above
- Only the fraction of incident light that is absorbed by the substance can bring about a chemical change is the statement of ...
(A)first law of photochemistry (B)second law of photochemistry (C)third law of photochemistry (D)none of these
- The non-radiative loss of energy that occurs between electronic energy manifold of the same spin type: singlet-singlet or triplet-triplet is called ...
(A)fluorescence (B)phosphorescence (C)internal conversion (D)intersystem crossing
- The substance which on absorption of light does not apparently undergoes any chemical change but initiate a photochemical reaction in another substance is called
(A)photosensitizer (B)catalyst (C)promoter (D)inhibitor
- When a molecule of the reactant when exposed to light absorbs one quantum per second the quantum efficiency of a reaction will be ...
(A)1 (B)2 (C)3 (D)0
- Surface tension is ...
(A)additive property (B)constitutive property (C)intensive Property (D)extensive property
- The light which vibrates in only one plane is called ...
(A)ordinary light (B)rotated light (C)plane polarised light (D)none of the above
- Dipole moment is ...
(A)scalar quantity (B)vector quantity (C)both a and b (D)none of the above
- The geometry of symmetrical triatomic molecule is ...
(A)linear (B)triangular (C)tetrahedral (D)pyramidal
- The substance having magnetic permeability less than one is ...
(A)diamagnetic substance (B)paramagnetic substance (C)ferromagnetic substance (D)none of the above
- In Guoy method the magnetic susceptibility is determined by measuring the change in ...
(A)volume (B)mass (C)both mass and volume (D)none of above
- Nuclear Magnetic Resonance (NMR) and Electron Spin Resonance (ESR) spectroscopy is studied in ...
(A)microwave region (B)infrared region (C)visible region (D)radio wave region
- In UV spectroscopy the radiation source is ...
(A)tungsten filament lamp (B)deuterium lamp (C)gun diode (D)ceramic filament
- Microwave active molecules are ...
(A)homo-nuclear diatomic molecules (B)hetero-nuclear diatomic molecules (C)linear polyatomic molecules (D)nonpolar polyatomic molecules
- In rotational spectroscopic work; the energy is expressed in terms of ...
(A)joule (B)erg (C)wavenumber (D)caloric
- Which of the following transitions between rotational energy levels is not allowed
(A) $J = 1 \leftarrow J = 2$ (B) $J = 1 \rightarrow J = 0$ (C) $J = 0 \leftarrow J = 1$ (D) $J = 1 \leftarrow J = 3$
- Rotational energy levels are studied in ...
(A)visible region (B)microwave region (C)infrared region (D)ultraviolet region
- Nanomaterial is the substance having one of its dimensions in the range ...
(A)1-100 nm (B)10-1000 nm (C)100-1000 nm (D)1-1000 nm
- Which of the following method of synthesis of nanomaterial is example of bottom up approach?

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- (A) reverse-Micelle Route (B) sol-Gel synthesis (C) colloidal precipitation (D) all of these
- 27 The method of synthesis of nanomaterial by physical methods is ...
- (A) high energy ball milling (B) physical vapour deposition method (C) laser ablation (D) all of these
- 28 In physical vapour deposition method for synthesis of nanomaterial, crucibles used are made up of ...
- (A) Copper (B) Steel (C) Tungsten (D) None of these
- 29 The Nano particles can be synthesised with the help of ...
- (A) bacteria (B) fungi (C) yeast (D) All of these
- 30 Leaves of germanium plant are used for the synthesis of Nano particles of
- (A) Ag (B) Au (C) Cd (D) Zn