

Sample MCQs for students of Semester IV Physical Chemistry

- 1 The unit of the Plank's constant is
 - a) Joule seconds
 - b) Seconds
 - c) Minutes
 - d) Hour
- 2 Borm-Oppenheimer approximation holds good for molecule od
 - a) Excited state
 - b) Ground state
 - c) Both Excited state and ground state
 - d) None of the above
- 3 The s-subshell has a shape....
 - a) Dumbbell
 - b) Circle
 - c) Oval
 - d) Spherical
- 4 Which of the following belongs to the C_{3v} point group?
 - a) SO₃
 - b) BBr₃
 - c) NH₃
 - d) AlCl₃
- 5 Which molecule dose not have T_d symmetry?
 - a) SiF₄
 - b) P₄
 - c) CH₄
 - d) XeF₄
- 6 The diffusion current in the polarography does not depends on
 - e) life time of mercury drop
 - f) capillary diameter
 - g) charge of the electrolyte
 - h) temperature
- 7 Current in electrochemical cell due to oxidation or reduction is called as
 - a) residual current
 - b) charging current
 - c) faradaic current

- d) non faradaic current
- 8 Which of these biosensors use the principle of heat released or absorbed by a reaction?
- a) potentiometric biosensor
 - b) optical biosensors
 - c) piezo-electric biosensors
 - d) calorimetric biosensors
- 9 In SDS-PAGE, separation is based on
- a) molecular mass
 - b) shape
 - c) charge
 - d) all of these
- 10 _____ converts biochemical events into measurable signals.
- a) Amplifier
 - b) Opamp
 - c) Rectifier
 - d) transducer
- 11 In addition polymerization Monomer involved are;
- a) Saturated
 - b) Unsaturated
 - c) Inactive
 - d) With functional groups
- 12 In condensation polymerization Monomer involved are ;
- a) Having at list two or more functional groups
 - b) Unsaturated
 - c) Inactive
 - d) Saturated
- 13 Which one of the following is the molecular weight of the polymer?
- a) M_x
 - b) M_y
 - c) M_z
 - d) M_c
- 14 Polyethylene is the example of ;
- a) Condensation polymerization
 - b) Step growth polymerisation
 - c) Polycondensation
 - d) Addition polymerisation
- 15 For polymers, molecular weight ' M_v ' can be determined by;

- a) Osmometry
 - b) Sedimentation
 - c) Light scattering
 - d) Viscometric method
- 16 Which of the following are the reactions in which molecules absorbing light do not themselves react but induce other molecules to react?
- a) Free radical reactions
 - b) Chain reactions
 - c) Reversible reactions
 - d) Photosensitized reactions
- 17 Identify the incorrect statement for photochemical reactions?
- First step in photochemistry is excited state (photoexcitation)
 Only ultraviolet radiations can induce photochemical reactions
 When a molecule or atom in the ground state (S_0) absorbs light, one electron is excited to a higher orbital level
 Upon absorption of radiation of specific wavelength, there occurs transition from S_0 → S_1
- 18 Identify the allowed transition from the following
- 1s → 2p
 - 1s → 3d
 - 2p → 4f
 - 1s → 2s
- 19 Identify the instrument that was conventionally used to monitor quantum yield of reactions?
- a) Scanning electron microscope
 - b) Polarimeter
 - c) Atomic force microscope
 - d) The chemical actinometer
- 20 P-type delayed fluorescence is also referred as _____
- Phosphorescence
 - α - phosphorescence
 - Biphotonic delayed emission
 - Monophotonic delayed emission
- 21 The literature review will examine
- a) Only opinions
 - b) Only one side of the main argument.
 - c) Only facts
 - d) All aspects of a topic.
- 22 The starting point for a literature search is:

- a) Tertiary data
 - b) Primary data
 - c) Secondary data
 - d) Some other data
- 23 Which of these will not help you to decide whether a publication is reputable?
- a) Citation rate
 - b) Audience
 - c) Advertising inside
 - d) Importance of peers
- 24 Temperature (°C) is example -----variable
- a) Nominal variable
 - b) Ordinal variable
 - c) Interval variable
 - d) Ratio
- 25 The most common data point is called
- a) Mean
 - b) Mode
 - c) Median
 - d) Variance
- 26 Which of these is not important in an oral presentation?
- a) Words
 - b) Body language
 - c) Gestures
 - d) The number of people as audience.
- 27 Which of these is the best way to establish a proper rapport with audience?
- a) Pointing a finger
 - b) Making eye contact
 - c) Waving your hands
 - d) Standing erect.
- 28 Which of these must be avoided in any presentation?
- a) Proper grammar
 - b) Complex words
 - c) Short sentences
 - d) Clear voice
- 29 What is full form of MSDS Sheet?
- a) Material safety data sheet
 - b) Material service data sheet
 - c) Molecular safety data sheet
 - d) Manufacturer service data sheet