

National Testing Agency

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Online Refresher Course in Chemistry for Higher Education Faculty

Group Number : 1
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Show Attended Group? : No
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Group Marks: 100
Is this Group for Examiner?: No

Online Refresher Course in Chemistry for Higher Education Faculty

Section Id : 28860733
Section Number : 1
Section type : Online
Mandatory or Optional: Mandatory
Number of Questions: 100
Number of Questions to be attempted: 100
Section Marks: 100

Sub-Section Number: 1
Sub-Section Id: 28860733
Question Shuffling Allowed : Yes

**Question Number : 1 Question Id : 2886072671 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0**

One of the recipients of the Nobel Prize 2018 in Chemistry “for the directed evolution of enzymes” was

- a. Frances H. Arnold
- b. Allen MacDiarmid
- c. George P. Smith
- d. Sir Gregory P. Winter

Options :

28860710674. 1

28860710675. 2

28860710676. 3

28860710677. 4

Question Number : 2 Question Id : 2886072672 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

What is the theme of American Chemical Society “National Chemistry Week 2019” ?

- a. Chemistry Rocks
- b. Marvelous Metals
- c. Chemistry is out of the world
- d. Periodic Table

Options :

28860710678. 1

28860710679. 2

28860710680. 3

28860710681. 4

Question Number : 3 Question Id : 2886072673 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

What is the focal theme of Indian Science Congress 2020?

- a. Future India: Science & Technology
- b. Digital and Scientific India
- c. Growth & Development of Science
- d. Science & Technology: Rural Development

Options :

28860710682. 1

28860710683. 2

28860710684. 3

28860710685. 4

Question Number : 4 Question Id : 2886072674 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Which of the following research was conducted by NASA in 2018?

- a. Conversion of carbon dioxide into coal
- b. Developing carbon nanotubes using sodium rich household ingredients
- c. Developing world's thinnest material
- d. Detection of liquid water and evidence of hydrated salts on Mars

Options :

28860710686. 1

28860710687. 2

28860710688. 3

28860710689. 4

Question Number : 5 Question Id : 2886072675 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Which scientist overcame the limitation of experiment on Atomic model performed by Rutherford?

- a. Chadwick
- b. Neil Bohr
- c. J.J.Thomson
- d. Max Planck

Options :

28860710690. 1

28860710691. 2

28860710692. 3

28860710693. 4

Question Number : 6 Question Id : 2886072676 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Which of the following statements is correct in context of Rutherford Model of an atom?

- a. Most of the atom is an empty space.
- b. Mass of atom is evenly distributed
- c. Electrons do not move around the nucleus.
- d. Angular momentum of electron is quantized.

Options :

28860710694. 1

28860710695. 2

28860710696. 3

28860710697. 4

Question Number : 7 Question Id : 2886072677 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

The following chemical symbol represents



- a. Oxidizing nature of chemical
- b. Corrosive nature of chemical
- c. Radioactive nature of chemical
- d. Toxic nature of chemical

Options :

28860710698. 1

28860710699. 2

28860710700. 3

28860710701. 4

Question Number : 8 Question Id : 2886072678 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

The following symbol represents



- a. Hot surface
- b. High temperature
- c. High voltage
- d. High current

Options :

28860710702. 1

28860710703. 2

28860710704. 3

28860710705. 4

Question Number : 9 Question Id : 2886072679 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

UN Globally Harmonized System (GHS) of classification and labelling of chemicals document is also known as

- a. Red Data Book
- b. Red Data Sheet
- c. Chemical Sheet
- d. Purple Book

Options :

28860710706. 1

28860710707. 2

28860710708. 3

28860710709. 4

Question Number : 10 Question Id : 2886072680 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

The following chemical symbol represents



- a. Oxidizing nature of chemical
- b. Explosive nature of chemical
- c. Lachrymatory nature of chemical
- d. Toxic nature of chemical

Options :

28860710710. 1

28860710711. 2

28860710712. 3

28860710713. 4

Question Number : 11 Question Id : 2886072681 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Which phenomena for the first time proposed the quantization behavior?

- a. Black Body Radiation
- b. Compton Effect
- c. Bohr Model
- d. Photoelectric Effect

Options :

28860710714. 1

28860710715. 2

28860710716. 3

28860710717. 4

Question Number : 12 Question Id : 2886072682 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Planck's constant has the same units as

- a. Hamiltonian
- b. Frequency
- c. Wavelength
- d. Angular momentum

Options :

28860710718. 1

28860710719. 2

28860710720. 3

28860710721. 4

Question Number : 13 Question Id : 2886072683 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

The quantum of electromagnetic radiation is known as

- a. Electron
- b. Photon
- c. Neutron
- d. Proton

Options :

28860710722. 1

28860710723. 2

28860710724. 3

28860710725. 4

Question Number : 14 Question Id : 2886072684 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

The S_N2 reactions proceed via

- a. Carbocations
- b. Carbanions
- c. Pentavalent transition state
- d. Free radicals

Options :

28860710726. 1

28860710727. 2

28860710728. 3

28860710729. 4

Question Number : 15 Question Id : 2886072685 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

'Meisenheimer' complexes have been isolated as intermediates in nucleophilic substitution reactions proceeding by which of the following mechanism?

- a. S_N1
- b. S_{Ni}
- c. Addition-elimination
- d. Substitution-addition

Options :

28860710730. 1

28860710731. 2

28860710732. 3

28860710733. 4

Question Number : 16 Question Id : 2886072686 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

How to treat an acidic compound spill on someone's hand in laboratory?

- a. Wash with cold saturated sodium bicarbonate solution
- b. Wash with cold 1% Boric Acid Solution
- c. Wash with cold 1% Acetic Acid solution
- d. Wash with Dettol

Options :

28860710734. 1

28860710735. 2

28860710736. 3

28860710737. 4

Question Number : 17 Question Id : 2886072687 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

If someone has accidentally swallowed an alkaline poison, he/she can be provided first-aid by giving

- a. plenty of water followed by milk of magnesia or antacid to drink
- b. plenty of water followed by lemon juice to drink
- c. plenty of water followed by milk to drink
- d. plenty of water followed by common salt solution to drink

Options :

28860710738. 1

28860710739. 2

28860710740. 3

28860710741. 4

Question Number : 18 Question Id : 2886072688 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

How to treat a basic compound spill on someone's hand in laboratory?

- a. Wash with saturated sodium bicarbonate solution
- b. Wash with 1% Boric Acid Solution
- c. Wash with 1% Acetic Acid solution
- d. Wash with 1% NaOH solution

Options :

28860710742. 1

28860710743. 2

28860710744. 3

28860710745. 4

Question Number : 19 Question Id : 2886072689 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Someone who has swallowed a heavy metal salt can be treated using which of the following procedure:

- a. Drink plenty of water followed by antacid
- b. Drink plenty of water followed by lemon juice
- c. Drink milk followed by oral ingestion of powdered charcoal tablet with water
- d. Drink milk followed by common salt aqueous solution

Options :

28860710746. 1

28860710747. 2

28860710748. 3

28860710749. 4

Question Number : 20 Question Id : 2886072690 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

A well-behaved wave-function $\psi(x)$, for a one dimensional system must not be

- a. Single valued
- b. Continuous at all points
- c. Normalized
- d. Infinite

Options :

28860710750. 1

28860710751. 2

28860710752. 3

28860710753. 4

Question Number : 21 Question Id : 2886072691 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

The Schrödinger equation for a two particle system comprising of a nucleus of charge +e and an electron is of the form

a.
$$\left[-\frac{\hbar^2}{8\pi^2 m_e} \nabla_e^2 - \frac{\hbar^2}{8\pi^2 m_n} \nabla_n^2 - \frac{e^2}{4\pi \epsilon_0 r} \right] \psi = E\psi$$

b.
$$\left[-\frac{\hbar^2}{8\pi^2 m_e} \nabla_e^2 - \frac{e^2}{4\pi \epsilon_0 r} \right] \psi = E\psi$$

c.
$$\left[-\frac{\hbar^2}{8\pi^2 m_e} \nabla_e^2 \right] \psi = E\psi$$

d.
$$\left[-\frac{e^2}{4\pi \epsilon_0 r} \right] \psi = E\psi$$

Options :

28860710754. 1

28860710755. 2

28860710756. 3

28860710757. 4

Question Number : 22 Question Id : 2886072692 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Which of the following is a false statement?

- a. No two chemical systems can have same Schrödinger equation
- b. Kinetic energy of a microscopic particle can be zero
- c. Classical mechanics failed to explain the behavior of black body radiations at very short wavelengths
- d. The wave function for a particle must be normalized because the particle must be somewhere in the defined space.

Options :

28860710758. 1

28860710759. 2

28860710760. 3

28860710761. 4

Question Number : 23 Question Id : 2886072693 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Concentrated nitric acid is added to oxidize Fe^{2+} to Fe^{3+} . Why is this done after Group II and not during preparation of original solution?

- a. Nitrates of some metals may be precipitated.
- b. A yellow suspension will be obtained on passing H_2S
- c. Group I cations will be missed
- d. A black precipitate will be obtained on passing H_2S

Options :

28860710762. 1

28860710763. 2

28860710764. 3

28860710765. 4

Question Number : 24 Question Id : 2886072694 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

A white mixture produced a black precipitate on passing H_2S in ammoniacal medium in Group IV? What could be this due to?

- a. Cu^{2+} was missed in Group II
- b. Cd^{2+} was missed in Group II
- c. Pb^{2+} was missed in Groups I and II
- d. The mixture contained Ni^{2+}

Options :

28860710766. 1

28860710767. 2

28860710768. 3

28860710769. 4

Question Number : 25 Question Id : 2886072695 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

In the presence of which of these anions will the detection of Group IV metals be difficult?

- (a) SO_4^{2-}
- (b) BO_3^{3-}
- (c) SO_3^{2-}
- (d) Br^-

Options :

28860710770. 1

28860710771. 2

28860710772. 3

28860710773. 4

Question Number : 26 Question Id : 2886072696 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

A mixture of a blue salt (A) and a white salt (B) turned brown during grinding. Which of these are A and B?

- a. Nickel sulphate and potassium bromide
- b. Zinc sulphate and potassium iodide
- c. Copper sulphate and potassium nitrate
- d. Copper sulphate and potassium iodide

Options :

28860710774. 1

28860710775. 2

28860710776. 3

28860710777. 4

Question Number : 27 Question Id : 2886072697 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

What is the starting point for drug discovery?

- a. Study of properties
- b. Interactions of compound with target
- c. Recognizing virus
- d. Structure

Options :

28860710778. 1

28860710779. 2

28860710780. 3

28860710781. 4

Question Number : 28 Question Id : 2886072698 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Which software is useful for deducing the 3D structure of proteins from amino acid sequence?

- a. Bhageerath
- b. GAMESS
- c. Gaussian
- d. UniProt

Options :

28860710782. 1

28860710783. 2

28860710784. 3

28860710785. 4

Question Number : 29 Question Id : 2886072699 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Which of the following is not a suitable solvent for oils and fats?

- a. Benzene
- b. CCl_4
- c. CHCl_3
- d. Water

Options :

28860710786. 1

28860710787. 2

28860710788. 3

28860710789. 4

Question Number : 30 Question Id : 2886072700 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Which among the following is not an omega 3 essential fatty acid ?

- a. alpha – linolenic acid
- b. eicosapentaenoic acid (EPA)
- c. docosahexanoic acid (DHA)
- d. linolenic acid

Options :

28860710790. 1

28860710791. 2

28860710792. 3

28860710793. 4

Question Number : 31 Question Id : 2886072701 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Hydrogenation is the conversion of unsaturated acid groups into the saturated one by using which catalyst?

- a. Ti
- b. Pb
- c. Ni
- d. Sn

Options :

28860710794. 1

28860710795. 2

28860710796. 3

28860710797. 4

Question Number : 32 Question Id : 2886072702 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

The HDL are formed from:

- a. Saturated fatty acid
- b. Unsaturated fatty acid
- c. Both saturated and unsaturated fatty acid
- d. Bad fats

Options :

28860710798. 1

28860710799. 2

28860710800. 3

28860710801. 4

Question Number : 33 Question Id : 2886072703 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

The first element discovered scientifically was

- a. Gold
- b. Tin
- c. Phosphorus
- d. Copper

Options :

28860710802. 1

28860710803. 2

28860710804. 3

28860710805. 4

Question Number : 34 Question Id : 2886072704 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Mendeleev published his periodic table in the year

- a. 1869
- b. 1689
- c. 1889
- d. 1896

Options :

28860710806. 1

28860710807. 2

28860710808. 3

28860710809. 4

Question Number : 35 Question Id : 2886072705 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Who devised a procedure of grouping elements into a group of three where the atomic mass of the middle element is the arithmetic mean of other two elements?

- a. Mendeleev
- b. Döbereiner
- c. Newland
- d. Meyer

Options :

28860710810. 1

28860710811. 2

28860710812. 3

28860710813. 4

Question Number : 36 Question Id : 2886072706 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Tetrahedral geometry is favored by

- a. Strong field ligands
- b. Weak Field ligands
- c. Positively charged ligands
- d. All ligands

Options :

28860710814. 1

28860710815. 2

28860710816. 3

28860710817. 4

Question Number : 37 Question Id : 2886072707 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

CFSE for d^3 tetrahedral high spin configuration comes out to be

- a. $-1.525 \Delta_0$
- b. $-0.130 \Delta_0$
- c. $-0.355 \Delta_0$
- d. $-1.250 \Delta_0$

Options :

28860710818. 1

28860710819. 2

28860710820. 3

28860710821. 4

Question Number : 38 Question Id : 2886072708 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Which of the following is a correct representation of SI Unit for a mass of 24 grams?

- a. 24 gms
- b. 24 gm
- c. 24 gs
- d. 24 g

Options :

28860710822. 1

28860710823. 2

28860710824. 3

28860710825. 4

Question Number : 39 Question Id : 2886072709 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

SI unit "Ampere" has been defined in terms of which physical constant?

- a. Elementary charge
- b. Avogadro's constant
- c. Planck's Constant
- d. Boltzmann constant

Options :

28860710826. 1

28860710827. 2

28860710828. 3

28860710829. 4

Question Number : 40 Question Id : 2886072710 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Which of the following is a correct representation of the initial burette reading taken during volumetric analysis

- a. 10.2 mL
- b. 10.2 g
- c. 10.2 ML
- d. 10.2

Options :

28860710830. 1

28860710831. 2

28860710832. 3

28860710833. 4

Question Number : 41 Question Id : 2886072711 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

The difference in wavelength of absorption and fluorescence is known as-

- a. Low extinction coefficients
- b. vertical transitions
- c. high ISC rates
- d. Stokes Shift

Options :

28860710834. 1

28860710835. 2

28860710836. 3

28860710837. 4

Question Number : 42 Question Id : 2886072712 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

In photochemistry, benzophenone is commonly used as a

- a. bioluminescent substance.
- b. photosensitizer.
- c. photoluminescent substance.
- d. all of these

Options :

28860710838. 1

28860710839. 2

28860710840. 3

28860710841. 4

Question Number : 43 Question Id : 2886072713 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

A photochemical reaction occurs in which of the following regions of the electromagnetic radiation?

- a. 20 nm and 800 nm
- b. 10 nm and 500 nm
- c. 200 nm and 800 nm
- d. 100 nm and 500 nm

Options :

28860710842. 1

28860710843. 2

28860710844. 3

28860710845. 4

Question Number : 44 Question Id : 2886072714 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

In a photochemical reaction the fission of carbonyl carbon and α -carbon bond takes place. Name this reaction



- a. Norrish type 1
- b. Norrish type 2
- c. Paterno Buchi Reaction
- d. Isomerization

Options :

28860710846. 1

28860710847. 2

28860710848. 3

28860710849. 4

Question Number : 45 Question Id : 2886072715 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

The law that states that light must be absorbed by a chemical substance in order for a photochemical reaction to take place is called

- First law of photochemistry (Grotthus and Draper law)
- Second law of photochemistry
- Lambert's law
- Beer's law Bottom of Form

Options :

28860710850. 1

28860710851. 2

28860710852. 3

28860710853. 4

Question Number : 46 Question Id : 2886072716 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Spin of an electron was discovered by

- Bohr
- Rutherford
- Thomson
- Uhlenbeck and Goudsmit

Options :

28860710854. 1

28860710855. 2

28860710856. 3

28860710857. 4

Question Number : 47 Question Id : 2886072717 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Orbital Angular Momentum (OAM) of an electron quantum mechanically is expressed as

- $\sqrt{(l+1)}h/2\pi$
- $\sqrt{l(l+2)}h/2\pi$
- $\sqrt{l(l+1)}h/2\pi$
- $\sqrt{l}h/2\pi$

Options :

28860710858. 1

28860710859. 2

28860710860. 3

28860710861. 4

Question Number : 48 Question Id : 2886072718 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Who received the Nobel Prize for the theory of Quantum Mechanics?

- a. Thomson & Dirac
- b. Schrödinger & Dirac
- c. Bohr & Rutherford
- d. Fermi & Dirac

Options :

28860710862. 1

28860710863. 2

28860710864. 3

28860710865. 4

Question Number : 49 Question Id : 2886072719 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Intensity of spectral lines is proportional to

- a. Population difference between the energy levels
- b. Internal energy of the molecules
- c. Translational energy of the molecules
- d. Absorbance

Options :

28860710866. 1

28860710867. 2

28860710868. 3

28860710869. 4

Question Number : 50 Question Id : 2886072720 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

COSY Stands for

- a. COmmon Spectroscopy
- b. COrrrelation Spectroscopy
- c. COrrrected Spectroscopy
- d. COordinated Spectroscopy

Options :

28860710870. 1

28860710871. 2

28860710872. 3

28860710873. 4

Question Number : 51 Question Id : 2886072721 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

NOSEY Stands for

- a. Nuclear Static Spectroscopy
- b. Nuclear Spin Spectroscopy
- c. Nuclear Overhauser Effect Spectroscopy
- d. Nuclear Spectroscopy

Options :

28860710874. 1

28860710875. 2

28860710876. 3

28860710877. 4

Question Number : 52 Question Id : 2886072722 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

The viscous, syrupy secretion of raw materials used in manufacture of carbon fibres is called-

- a. Precursor dope
- b. Raw dope
- c. Pitch
- d. Monoacrylonitrile

Options :

28860710878. 1

28860710879. 2

28860710880. 3

28860710881. 4

Question Number : 53 Question Id : 2886072723 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

During surface treatment, the carbon fibers are subjected to-

- a. Mild reduction
- b. Mild oxidation
- c. Pressure heating
- d. Freezing

Options :

28860710882. 1

28860710883. 2

28860710884. 3

28860710885. 4

Question Number : 54 Question Id : 2886072724 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Carbon fibers are also called as

- a. Ceramic fibers
- b. Graphite fibers
- c. Nanotubes
- d. Graphene

Options :

28860710886. 1

28860710887. 2

28860710888. 3

28860710889. 4

Question Number : 55 Question Id : 2886072725 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

API stands for:

- a. Active Pharmacological Ingredient
- b. Active Pharmaceutical Ingredient
- c. Active Pharmacology Input
- d. Active Pharmaceutical Insertion

Options :

28860710890. 1

28860710891. 2

28860710892. 3

28860710893. 4

Question Number : 56 Question Id : 2886072726 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

What do we get upon methyl ester formation of salicylic acid which can be used as an analgesic or skin ointment?

- a. Oil of Wintergreen
- b. Aspirin
- c. Salicin
- d. Morphine

Options :

28860710894. 1

28860710895. 2

28860710896. 3

28860710897. 4

Question Number : 57 Question Id : 2886072727 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Which one of the following is the Drug regulatory body in India?

- a. Food & Drug Administration (FDA)
- b. European Medicine Agency (EMA)
- c. Indian Drug Control Association (IDCA)
- d. Central Drug Standard Control Organisation (CDSCO)

Options :

28860710898. 1

28860710899. 2

28860710900. 3

28860710901. 4

Question Number : 58 Question Id : 2886072728 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Who synthesized the pure drug Aspirin in 1899?

- a. Bayer
- b. Paracelsus
- c. Merck
- d. Stanley

Options :

28860710902. 1

28860710903. 2

28860710904. 3

28860710905. 4

Question Number : 59 Question Id : 2886072729 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Consider the following statements

Assertion: Syllabus is prescriptive

Reason: Curriculum is descriptive

Select the correct option:

- a) Assertion is correct and Reason is correct reasoning.
- b) Assertion is correct, but Reason is incorrect.
- c) Assertion is incorrect and Reason is a correct statement.
- d) Both Assertion and Reason are incorrect.

Options :

28860710906. 1

28860710907. 2

28860710908. 3

28860710909. 4

Question Number : 60 Question Id : 2886072730 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Which of the following is not a part of preamble of India?

- a. Injustice
- b. Liberty of thoughts
- c. Fraternity
- d. Equality

Options :

28860710910. 1

28860710911. 2

28860710912. 3

28860710913. 4

Question Number : 61 Question Id : 2886072731 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

The difference between ethics and values is

- a. Both are same
- b. Values are self-regulatory but ethics are hierarchical in nature
- c. Values are hierarchical in nature but ethics are self-regulatory.
- d. Both are hierarchical in nature

Options :

28860710914. 1

28860710915. 2

28860710916. 3

28860710917. 4

Question Number : 62 Question Id : 2886072732 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

LCD polymer is an example of

- a. Plasma
- b. Amorphous material
- c. Liquid crystal
- d. Crystalline material

Options :

28860710918. 1

28860710919. 2

28860710920. 3

28860710921. 4

Question Number : 63 Question Id : 2886072733 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Which of the following equations correctly represent Bragg's law?

- a. $n\lambda = 2d \sin \theta$
- b. $\lambda = 3d \sin \theta$
- c. $n\lambda = d \sin \theta$
- d. $n\lambda = 2 \sin \theta$

Options :

28860710922. 1

28860710923. 2

28860710924. 3

28860710925. 4

Question Number : 64 Question Id : 2886072734 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Which of the following is correct matching?

- a. Monoatomic gases: short range order
- b. Amorphous material: long range order
- c. Liquid crystals: short range order
- d. Crystalline material: Long range order

Options :

28860710926. 1

28860710927. 2

28860710928. 3

28860710929. 4

Question Number : 65 Question Id : 2886072735 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

In the equation $F_{hkl} = \sum_1^N f_n e^{2\pi i(hu_n + kv_n)}$, f_n represents

- a. Scattering factor of a particular type of atom
- b. Number of atoms
- c. Co-ordinates of the atom in the lattice
- d. Indices of diffraction plane

Options :

28860710930. 1

28860710931. 2

28860710932. 3

28860710933. 4

Question Number : 66 Question Id : 2886072736 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Which of the following is not an electrophile?

- a. NH_4^+
- b. H^+
- c. Cl^+
- d. Br^+

Options :

28860710934. 1

28860710935. 2

28860710936. 3

28860710937. 4

Question Number : 67 Question Id : 2886072737 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

A tertiary alcohol on treatment with conc. HCl in presence of anhydrous ZnCl_2 will give

- a. No reaction
- b. Violent reaction
- c. Immediate turbidity
- d. Turbidity after 5 min

Options :

28860710938. 1

28860710939. 2

28860710940. 3

28860710941. 4

Question Number : 68 Question Id : 2886072738 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

The phenomena of scientific study at a very low temperature is known as

- a. Ornithology
- b. Selenography
- c. Cryogenics
- d. Petrology

Options :

28860710942. 1

28860710943. 2

28860710944. 3

28860710945. 4

Question Number : 69 Question Id : 2886072739 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Predict the correct order of decreasing Energy of activation required for formation of respective carbocations?

- a. $3^\circ > 2^\circ > 1^\circ$
- b. $2^\circ > 3^\circ > 1^\circ$
- c. $1^\circ > 2^\circ > 3^\circ$
- d. $1^\circ > 3^\circ > 2^\circ$

Options :

28860710946. 1

28860710947. 2

28860710948. 3

28860710949. 4

Question Number : 70 Question Id : 2886072740 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Which of the following is not true about equivalent hybrid orbitals?

- a. All hybrid orbitals have same s and p character irrespective of the number of combining orbitals
- b. All hybrid orbitals are identical in composition
- c. All hybrid orbitals are identical in spatial orientation
- d. All hybrid orbitals are identical in energy

Options :

28860710950. 1

28860710951. 2

28860710952. 3

28860710953. 4

Question Number : 71 Question Id : 2886072741 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Electronegativity of different hybrid orbitals decreases in the order

- a. $s > sp > sp^2 > sp^3 > p$
- b. $sp > sp^2 > sp^3 > s > p$
- c. $s > p > sp > sp^2 > sp^3$
- d. $s < sp < sp^2 < sp^3 < p$

Options :

28860710954. 1

28860710955. 2

28860710956. 3

28860710957. 4

Question Number : 72 Question Id : 2886072742 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

How many equatorial bonds are present in PCl_5 ?

- a. 5
- b. 2
- c. 3
- d. 1

Options :

28860710958. 1

28860710959. 2

28860710960. 3

28860710961. 4

Question Number : 73 Question Id : 2886072743 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Which of the following is not true about Valence Bond Theory?

- a. Valence atomic orbitals in a molecule are same as in isolated atoms
- b. Valence electrons are localized between atoms
- c. Half-filled orbitals overlap to form bonds
- d. Concept of hybridization

Options :

28860710962. 1

28860710963. 2

28860710964. 3

28860710965. 4

Question Number : 74 Question Id : 2886072744 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Sulphur exists in which form at room temperature

- a. S
- b. S₂
- c. S₃
- d. S₈

Options :

28860710966. 1

28860710967. 2

28860710968. 3

28860710969. 4

Question Number : 75 Question Id : 2886072745 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Which of the following is false about Born Oppenheimer approximation?

- a. Nuclei move faster than electrons
- b. Electrons move faster than nuclei
- c. Nuclear and electronic motions are separable
- d. Max Born and J. Robert Oppenheimer gave this approximation

Options :

28860710970. 1

28860710971. 2

28860710972. 3

28860710973. 4

Question Number : 76 Question Id : 2886072746 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Which of the following is diatomic at room temperature?

- a. Hydrogen
- b. Neon
- c. Phosphorus
- d. Sulphur

Options :

28860710974. 1

28860710975. 2

28860710976. 3

28860710977. 4

Question Number : 77 Question Id : 2886072747 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Who introduced the concept of an ionic bond?

- a. Einstein
- b. Abegg
- c. Thomson
- d. Lewis

Options :

28860710978. 1

28860710979. 2

28860710980. 3

28860710981. 4

Question Number : 78 Question Id : 2886072748 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Computational chemistry is also known as

- a. Synthetic Chemistry
- b. In-situ Chemistry
- c. Analytical chemistry
- d. In-silico chemistry

Options :

28860710982. 1

28860710983. 2

28860710984. 3

28860710985. 4

Question Number : 79 Question Id : 2886072749 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Which of the following is an Open source software for chemistry.

- a. Linux
- b. ArgusLab
- c. MS Office
- d. ChemDraw

Options :

28860710986. 1

28860710987. 2

28860710988. 3

28860710989. 4

Question Number : 80 Question Id : 2886072750 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

The default setting in ArgusLab for the geometry while drawing molecules is

- a. Linear
- b. Unspecified
- c. Trigonal planar
- d. Tetrahedral

Options :

28860710990. 1

28860710991. 2

28860710992. 3

28860710993. 4

Question Number : 81 Question Id : 2886072751 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

The commercial production of vanadium is mainly as

- a. ferrovandium
- b. Iron vanadium tetraoxide
- c. Vanadium Oxide
- d. Vanadium Nitride

Options :

28860710994. 1

28860710995. 2

28860710996. 3

28860710997. 4

Question Number : 82 Question Id : 2886072752 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

One of the following is not the outcome of preparing blue print of a question paper.

- a. The questions are purposeful and well defined.
- b. More than one question paper of almost the same level can be prepared.
- c. Different examiners can frame the question paper of almost the same level.
- d. No chances of any question which is out of syllabus.

Options :

28860710998. 1

28860710999. 2

28860711000. 3

28860711001. 4

Question Number : 83 Question Id : 2886072753 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Which of the following is ideally wrong while setting a question paper?

- a. Distribution of Difficulty level weightage
- b. Development of Blueprint
- c. Validation of content
- d. No consideration to scope and length of the answer

Options :

28860711002. 1

28860711003. 2

28860711004. 3

28860711005. 4

Question Number : 84 Question Id : 2886072754 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

In a mass spectrometer, a mass analyzer is mounted _____

- a. Before the ion source
- b. After the ion source
- c. After the detector
- d. Can be anywhere

Options :

28860711006. 1

28860711007. 2

28860711008. 3

28860711009. 4

Question Number : 85 Question Id : 2886072755 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

When mercury is rubbed over an aluminium sheet, it leads to production of

- a. Aluminium Oxide
- b. Aluminium Amalgam
- c. Fibrous Alumina
- d. Aluminium Nitride

Options :

28860711010. 1

28860711011. 2

28860711012. 3

28860711013. 4

Question Number : 86 Question Id : 2886072756 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

For surface analysis, Secondary Ionisation Mass Spectrometry (SIMS) is preferred over

Laser ablation-ICPMS since

- a) It does not ionize the surface molecules
- b) It has a different detector
- c) It does not create craters on the sample
- d) Lasers are difficult to handle

Options :

28860711014. 1

28860711015. 2

28860711016. 3

28860711017. 4

Question Number : 87 Question Id : 2886072757 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

What is the chemical composition of tooth enamel?

- a. Calcium carbonate
- b. Calcium
- c. Calcium hydroxide
- d. Calcium hydroxyapatite

Options :

28860711018. 1

28860711019. 2

28860711020. 3

28860711021. 4

Question Number : 88 Question Id : 2886072758 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

What is rose gold?

- a. Palladium in the alloy composition of gold.
- b. Copper in the alloy composition of gold.
- c. Zinc in the alloy composition of gold.
- d. Silver in the alloy composition of gold.

Options :

28860711022. 1

28860711023. 2

28860711024. 3

28860711025. 4

Question Number : 89 Question Id : 2886072759 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Which colorless gas is dissolved in water to yield a solution which is used as a biological preservative?

- a. Formaldehyde
- b. Carbon monoxide
- c. Carbon dioxide
- d. Hydrogen gas

Options :

28860711026. 1

28860711027. 2

28860711028. 3

28860711029. 4

Question Number : 90 Question Id : 2886072760 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

What is the red coloured ruby gemstone composed of chemically?

- a. Chromium oxide
- b. Aluminum oxide with Chromium
- c. Aluminum oxide
- d. Potassium permanganate

Options :

28860711030. 1

28860711031. 2

28860711032. 3

28860711033. 4

Question Number : 91 Question Id : 2886072761 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Which is the softest known chemical substance?

- a. Limestone
- b. Fuller's earth
- c. Talc
- d. Calcite

Options :

28860711034. 1

28860711035. 2

28860711036. 3

28860711037. 4

Question Number : 92 Question Id : 2886072762 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Purple benzene can be prepared by adding which of the following to a mixture of benzene and aqueous KMnO_4 ?

- a. NaCl
- b. Water
- c. Tetrachlorobenzene
- d. Tetraalkylammonium chloride

Options :

28860711038. 1

28860711039. 2

28860711040. 3

28860711041. 4

Question Number : 93 Question Id : 2886072763 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

Which of the following radioactive isotope is used most widely in the clinical imaging work?

- a. I-131
- b. Tc-99
- c. Ra-223
- d. P-32

Options :

28860711042. 1

28860711043. 2

28860711044. 3

28860711045. 4

Question Number : 94 Question Id : 2886072764 Question Type : MCQ Option Shuffling : No

Correct Marks : 1 Wrong Marks : 0

For formation of whipped cream, heavy cream is subjected to injecting which of the following bacteriostatic gas under high pressure conditions?

- a. Nitrogen
- b. Nitric Oxide
- c. Nitrous Oxide
- d. Carbon dioxide

Options :

28860711046. 1

28860711047. 2

28860711048. 3

28860711049. 4

Question Number : 95 Question Id : 2886072765 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Magic sand molecules on surface of sand are converted from their hydrophilic nature into hydrophobic nature by reacting with

- Oil
- Methanol
- Trimethylammonium chloride
- trimethylsilanol

Options :

28860711050. 1

28860711051. 2

28860711052. 3

28860711053. 4

Question Number : 96 Question Id : 2886072766 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

The sea water near magma is mainly acidic not due to

- Hydrogen bromide
- sulphur dioxide
- Nitrogen dioxide
- hydrogen sulphide

Options :

28860711054. 1

28860711055. 2

28860711056. 3

28860711057. 4

Question Number : 97 Question Id : 2886072767 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

Nobel prize in chemistry for the year 2019 has been awarded?

- for the development of lithium-ion batteries
- for the directed evolution of enzymes
- for developing cryo-electron microscopy for the high-resolution structure determination of biomolecules in solution
- for the design and synthesis of molecular machines

Options :

28860711058. 1

28860711059. 2

28860711060. 3

28860711061. 4

Question Number : 98 Question Id : 2886072768 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

According to Stevenson rule, when cleaving a bond, the charge preferentially remains on the fragment with the

- Highest ionization energy
- Lowest ionization energy
- Maximum number of Oxygen atoms
- Maximum number of vacant d orbitals

Options :

28860711062. 1

28860711063. 2

28860711064. 3

28860711065. 4

Question Number : 99 Question Id : 2886072769 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

In mass spectrometry, if the parent ion mass number is odd, it indicates presence of which atom(s) in the compound

- Even number of Nitrogen atoms
- Odd number of Nitrogen atoms
- Odd number of H atoms
- Even number of Nitrogen atoms and odd number of H atoms

Options :

28860711066. 1

28860711067. 2

28860711068. 3

28860711069. 4

Question Number : 100 Question Id : 2886072770 Question Type : MCQ Option Shuffling : No
Correct Marks : 1 Wrong Marks : 0

If two fragments have same ionization energy, the one which is formed in more yield has

- a. more number of atoms
- b. more number of electrons
- c. more number of lone pairs
- d. more number of unpaired electrons

Options :

28860711070. 1

28860711071. 2

28860711072. 3

28860711073. 4