

Ques # :1

If two physical quantities P and Q have different dimensions, which of the following operation is possible

- 1) $P+Q$
- 2) $P-Q$
- 3) P/Q
- 4) $1-\frac{P}{Q}$

Ques # :2

If $\vec{A} \cdot \vec{B} = \frac{-AB}{2}$ then angle between \vec{A} on \vec{B} is

- 1) 30°
- 2) 60°
- 3) 90°
- 4) 120°

Ques # :3

If a particle travels in a circle, covering equal angles in equal times, its velocity vector

- 1) changes in magnitude only
- 2) remains constant
- 3) changes in direction only
- 4) changes both in magnitude and direction

Ques # :4

A metre scale is moving with uniform velocity. This implies

- 1) the force acting on the scale is zero, but a torque about the centre of mass can act on the scale.
- 2) the force acting on the scale is zero and torque acting about the centre of mass of the scale is also zero.
- 3) the total force acting on it need not be zero but the torque on it is zero.
- 4) neither the force nor the torque to be zero.

Ques # :5

A person of 50kg is in an elevator that is moving upward at 3m/s and slowing down at 2m/s². The persons apparent weight will be

(take $g=10\text{m/s}^2$)

- 1) 60kg
 - 2) 51kg
 - 3) 40kg
 - 4) zero
-

Ques # :6

Which of the statement is not true

- 1) Friction make the things slowdown.
 - 2) Friction produces heat.
 - 3) Friction can stop the moving things.
 - 4) Friction is not useful at all.
-

Ques # :7

During inelastic collision between two bodies, which of the following quantities always remain conserved?

- 1) Total kinetic energy.
 - 2) Total mechanical energy.
 - 3) Total linear momentum.
 - 4) Speed of each body.
-

Ques # :8

For which of the following does the centre of mass lie outside the body?

- 1) A pencil
 - 2) A short-put
 - 3) A dice
 - 4) A bangle
-

Ques # :9

A particle executes SHM with an amplitude 4cm. At what displacement from the mean position its energy is half kinetic and half potential?

- 1) $2\sqrt{2}$ cm
- 2) $\sqrt{2}$ cm
- 3) 2 cm

4) 1 cm

Ques # :10

If the Earth is at one fourth of its present distance from the Sun, the duration of the year will be

- 1) one fourth of the present year
 - 2) half the present year
 - 3) one-eighth the present year
 - 4) one-sixth the present year
-

Ques # :11

A wire fixed at the upper end stretches by length l by applying a force F . The work done in stretching is

- 1) $2Fl$
 - 2) Fl
 - 3) $\frac{Fl}{4}$
 - 4) $\frac{Fl}{2}$
-

Ques # :12

A square frame of side l is dipped in a soap solution. When the frame is taken out, a soap film is formed. The force due to surface tension T of the soap solution is

- 1) $8Tl$
 - 2) $4Tl$
 - 3) $2Tl$
 - 4) Tl
-

Ques # :13

A perfect Carnot engine works between 227°C and 127°C . If the work output of the engine is 100 J, Then the amount of heat receive from the source will be

- 1) 100 J
 - 2) 300 J
 - 3) 400 J
 - 4) 500 J
-

Ques # :14

The internal energy of a perfect gas is

- 1) partly kinetic and partly potential
 - 2) wholly potential
 - 3) wholly kinetic
 - 4) depends on the ratio of two specific heats
-

Ques # :15

A beaker full of hot water is kept in a room at 40°C . If it cools from 70°C to 65°C in t_1 minutes, from 65°C in t_2 minutes and from 60°C to 55°C in t_3 minutes, then

- 1) $t_1 = t_2 = t_3$
 - 2) $t_1 < t_2 = t_3$
 - 3) $t_1 < t_2 < t_3$
 - 4) $t_1 > t_2 > t_3$
-

Ques # :16

When a wave passes from one medium to another, there is change of

- 1) frequency and velocity
 - 2) frequency and wavelength
 - 3) wavelength and velocity
 - 4) frequency, wavelength and velocity
-

Ques # :17

If the electric flux entering and leaving on closed surface are ϕ_1 and ϕ_2 respectively, the net electric charge inside the surface will be

- 1) $(\phi_1 + \phi_2) \epsilon_0$
 - 2) $(\phi_1 - \phi_2) \epsilon_0$
 - 3) $\frac{(\phi_1 + \phi_2)}{\epsilon_0}$
 - 4) $\frac{(\phi_1 - \phi_2)}{\epsilon_0}$
-

Ques # :18

The focal length of concave mirror is f in air. If this mirror is immersed in water ($n = \frac{4}{3}$). Its focal length will be

- 1) f
- 2) $\frac{4}{3}f$
- 3) $\frac{3}{4}f$
- 4) $\frac{f}{4}$

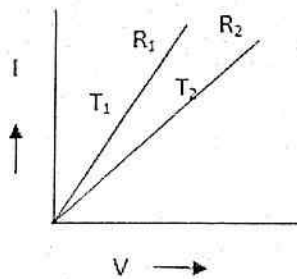
Ques # :19

A parallel plate air capacitor is charged to a potential difference of V volts. After disconnecting the charging battery the distance between the plates of the capacitor is increased using an insulating handle. As a result the potential difference between the plates:-

- 1) Decreases
- 2) Does not change
- 3) Becomes zero
- 4) Increases

Ques # :20

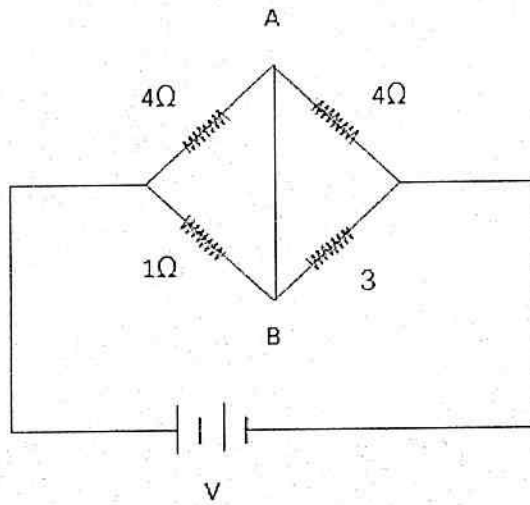
A graph is plotted between potential difference and current for a conductor at two different temperatures T_1 and T_2 as shown in figure. The resistances of conductor are R_1 and R_2 respectively for temperature T_1 and T_2 . Choose the correct statement.



- 1) $R_1 > R_2, T_2 > T_1$
- 2) $R_1 > R_2, T_1 > T_2$
- 3) $R_2 > R_1, T_1 > T_2$
- 4) $R_2 > R_1, T_2 > T_1$

Ques # :21

In the circuit shown, if a conducting wire is connected between points A and B, the current in this wire will-



- 1) Flow from A to B
- 2) Flow in the direction which will be decided by the value of V
- 3) Be zero
- 4) Flow from B to A

Ques # :22

If the direction of the initial velocity of a positive charged particle is in the direction of magnetic field, then particle will follow the path

- 1) Straight line
- 2) ellipse
- 3) helix
- 4) circle

Ques # :23

A square of side L meters lies in the x-y plane in a region, where the magnetic field is given by $\vec{B} = B_0 (2\hat{i} - 3\hat{j} + 4\hat{k})$ tesla where B_0 is constant. The Magnitude of flux passing through the square is

- 1) $2 B_0 L^2$ weber
- 2) $3 B_0 L^2$ weber
- 3) $4 B_0 L^2$ weber
- 4) $\sqrt{29} B_0 L^2$ weber

Ques # :24

Voltage applied to a series LCR circuit is $E = 140 \sin \frac{3}{4} t$ then rms value of voltage across resistance at resonance will be

- 1) $140\sqrt{2}$
 - 2) $\frac{140}{\sqrt{2}}$
 - 3) $\frac{70}{\sqrt{2}}$
 - 4) $70\sqrt{2}$
-

Ques # :25

In young's experiment, the third bright band for wavelength of light 6000 \AA coincides with the fourth bright band for another source in the same arrangement. The wavelength of the another source is

- 1) 4500 \AA
 - 2) 6000 \AA
 - 3) 5000 \AA
 - 4) 4000 \AA
-

Ques # :26

Light of wavelength λ falls on a metal having threshold wavelength λ_0 . Photo electric effect will take place only if

- 1) $\lambda \geq \lambda_0$
 - 2) $\lambda \geq 2\lambda_0$
 - 3) $\lambda \leq \lambda_0$
 - 4) $\lambda < \frac{\lambda_0}{4}$
-

Ques # :27

The percentage of quantity of radioactive material that remains after 4 half lives will be

- 1) 93.75 %
- 2) 87.5 %
- 3) 12.5 %
- 4) 6.25 %

Ques # :28

In forward biasing of the p-n junction

- 1) The positive terminal of the battery is connected to p-side and the depletion region becomes thin
 - 2) The positive terminal of the battery is connected to p-side and the depletion region becomes thick
 - 3) The positive terminal of the battery is connected to n-side and the depletion region becomes thin
 - 4) The positive terminal of the battery is connected to n-side and the depletion region becomes thick
-

Ques # :29

The electric and the magnetic field, associated with an e.m.wave, propagating along the +z-axis, can be represented by

- 1) $[\vec{E} = E_0 \hat{j}, \vec{B} = B_0 \hat{k}]$
 - 2) $[\vec{E} = E_0 \hat{i}, \vec{B} = B_0 \hat{j}]$
 - 3) $[\vec{E} = E_0 \hat{k}, \vec{B} = B_0 \hat{i}]$
 - 4) $[\vec{E} = E_0 \hat{j}, \vec{B} = B_0 \hat{i}]$
-

Ques # :30

When light is incident on a metallic surface, then the maximum kinetic energy of emitted photoelectron depends on

- 1) velocity of incident light
 - 2) frequency of incident light
 - 3) intensity of incident light
 - 4) the time interval for which light is incident on metal
-

Ques # :31

If masses of a proton and an electron are denoted by m_p and m_e respectively then the correct representation of reduced mass of a hydrogen atom is

- 1) $\frac{m_p}{m_p + m_e}$
- 2) $\frac{m_e}{m_p + m_e}$
- 3) $\frac{m_e + m_p}{m_p m_e}$
- 4)

$$\frac{m_s m_p}{m_s + m_p}$$

Ques # :32

If a collision of two particles is viewed in a centre of mass frame, then velocity of the particles would

- 1) be parallel to each other
 - 2) be antiparallel to each other
 - 3) be perpendicular to each other
 - 4) depend on the initial velocities of the particles
-

Ques # :33

The motion of planets in the solar system is an example of the conservation of

- 1) Kinetic energy
 - 2) Linear momentam
 - 3) Angular momentam
 - 4) potential energy
-

Ques # :34

The equation of a damped harmonic oscillator is $\frac{d^2y}{dx^2} + 2b\frac{dy}{dx} + w_0^2 = 0$.

Damped oscillations will occur when

- 1) $b > w_0$
 - 2) $b = w_0$
 - 3) $b < w_0$
 - 4) $b < w_0^2$
-

Ques # :35

If bulk modulus of water is $2.25 \times 10^9 \text{ N/m}^2$ then speed of sound in water would be

- 1) 280 m/s
- 2) 332 m/s
- 3)

- 2.25 X 10⁹ m/s
4) 1.5 X 10³ m/s
-

Ques # :36

Which of the following is true for most probable speed V_p , average speed \bar{v} and rms speed V_{rms}

- 1) $V_p < \bar{v}$
2) $V_p > V_{rms}$
3) $V_{rms} < \bar{v}$
4) $V_{rms} = \sqrt{\frac{2}{3}} V_p$
-

Ques # :37

The waves having intensity in the ratio 25 : 4 produce interference. The ratio of the maximum to the minimum intensity is

- 1) 7 : 3
2) 49 : 9
3) 5 : 2
4) 29 : 21
-

Ques # :38

Choose the only false statement from the following :

- 1) Substances with energy gap of the order of 10 eV are insulators
2) The conductivity of a semiconductor increases with increases in temperature
3) In conductors the valence and conduction bands may overlap
4) The resistivity of a semiconductor increases with increase in temprature
-

Ques # :39

Which of the following is not true in case of a superconductor

- 1) A superconductor is perfectly diamagnetic
2)

A superconductor expels out magnetic field lines when it is brought in an external magnetic field

- 3) Above critical temperature a superconductor loses its superconducting nature gradually
- 4) Above lower critical magnetic field (H_{c_1}), type II superconductor loses its superconducting nature gradually, till higher critical magnetic field (H_{c_2}), is reached

Ques # :40

According to Dulong and Petit, the lattice specific heat of solid varies with n^{th} power of temperature T. Here n is

- 1) 0
- 2) 3
- 3) -3
- 4) 2

Ques # :41

The maximum power absorbed by driven harmonic oscillator is

- 1) at resonance
- 2) at half frequency from resonance
- 3) at double frequency from resonance
- 4) at $\sqrt{2}$ times the frequency from resonance

Ques # :42

A sphere has a perfectly elastic oblique collision with another identical sphere which initially at rest. The angle between their direction after the collision is

- 1) 45°
- 2) 90°
- 3) 135°
- 4) 180°

Ques # :43

If the quality factor of the oscillator is large, it implies that

- 1) damping is infinite
 - 2) damping is high but not infinite
 - 3) damping is low but not zero
 - 4) damping is zero
-

Ques # :44

The bond orders of O_2 , N_2 , Li_2 and He_2 are :

- 1) 2,3,1,0 respectively
 - 2) 3,2,0,1 respectively
 - 3) 0,1,2,3 respectively
 - 4) 1,0,3,2 respectively
-

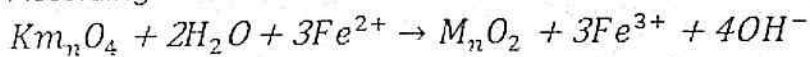
Ques # :45

Orientation of orbitals in space is depicted by quantum number

- 1) s
 - 2) l
 - 3) n
 - 4) m
-

Ques # :46

According to the reaction



Equivalent mass of $K_m O_4$ (molar mass = 158) is

- 1) 158
 - 2) 79
 - 3) 22.57
 - 4) 52.66
-

Ques # :47

Total number of atoms per unit cell is body centred cubic is -

- 1) One
- 2) Two

- 3) Three
- 4) Four

Ques # :48

According to Gay Lussac's Law

- 1) Volume of a gas is directly proportional to temperature at constant pressure
- 2) Volume of a gas is inversely proportional to its pressure at constant temperature
- 3) pressure of a fixed amount of gas is inversely proportional to temperature at constant volume
- 4) pressure of a fixed amount of gas is directly proportional to its temperature at constant volume

Ques # :49

Geometry of Xef_4 molecule is

- 1) Square planar
- 2) Square pyramidal
- 3) See saw
- 4) Tetrahedral

Ques # :50

Among the following ions, the most polarizable is-

- 1) F^-
- 2) Cl^-
- 3) Br^-
- 4) I^-

Ques # :51

Which of the following complex is known as hetroleptic?

- 1) $[Cu(CN)_4]^{3-}$
- 2) $[Co(NH_3)_4Cl_2]^+$
- 3) $K_4[Fe(CN)_6]$
- 4) $[Co(NH_3)_6]^{3+}$

Ques # :52

The IUPAC name of $Hg[Co(SCN)_4]$ is

- 1) Mercury tetrathiocyanatocobaltate (III)
- 2) Mercury tetrathiocyanatocobalt(II)
- 3) Mercury tetrathiocyanidecobaltate (III)
- 4) Mercury tetrathiocyanidecobaltate (II)

Ques # :53

Match the following list:

| List I | List II |
|---------|-----------------|
| (i) s | (a) halogen |
| (ii) Br | (b) transuranic |
| (iii) y | (c) chalcogen |
| (iv) Np | (d) transition |

Correct answer is –

- 1) (i) c, (ii)a, (iii) d, (iv) b
- 2) (i) a, (ii)b, (iii) c, (iv) d
- 3) (i) d, (ii)c, (iii) b, (iv) a
- 4) (i) c, (ii)d, (iii) a, (iv) b

Ques # :54

Cl_2O_7 is

- 1) Basic oxide
- 2) Acidic oxide
- 3) Neutral oxide
- 4) Amphoteric oxide

Ques # :55

At 300 k, Value of K_c for gaseous reaction $B + A \rightleftharpoons B A$ is 24.6 calculate the value of K_p , given that $R=0.082 \text{ L atm } K^{-1} \text{ mol}^{-1}$

- 1) 24.6
 - 2) 1.65×10^{-3}
 - 3) 605
 - 4) 1.0
-

Ques # :56

Which one is true for a buffer solution?

- 1) pH value of a buffer solution cannot be determined
 - 2) It has pH value always less than 7
 - 3) It can have pH value less or more than 7
 - 4) It has pH value always greater than 7
-

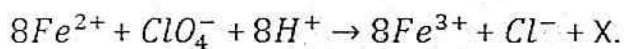
Ques # :57

Which one of the following is not an extensive property?

- 1) Volume
 - 2) Internal energy
 - 3) Enthalpy
 - 4) Temperature
-

Ques # :58

The balanced chemical equation :



X is –

- 1) $4 H_2O_2$
 - 2) $2 H_2O$
 - 3) $4 H_2O$
 - 4) $2OH^-$
-

Ques # :59

Calamine is an Ore of :

- 1) Aluminium
 - 2) Iron
 - 3) Copper
 - 4) Zinc
-

Ques # :60

Oleum is also known as

- 1) sulphurous acid
 - 2) sulphuric acid
 - 3) peroxodisulphuric acid
 - 4) pyrosulphuric acid
-

Ques # :61

Which of the following is an electrophile?

- 1) H_2O
 - 2) R_3N
 - 3) R_2NH
 - 4) BF_3
-

Ques # :62

Identify the group which is ortho directing

- 1) $-COOH$
 - 2) $-NH_2$
 - 3) $-NO_2$
 - 4) $-CN$
-

Ques # :63

Friedel-Crafts reaction is not given by :

- 1) Aniline
- 2) Chlorobenzene
- 3) benzene
- 4) Anisole

Ques # :64

Which one of the following have highest value of $P K_a$?

- 1) o-Cresol
- 2) Ethanol
- 3) o-nitrophenol
- 4) m-nitrophenol

Ques # :65

Cannizzaro reaction is not given by

- 1) HCHO
- 2) CCl_3CHO
- 3) C_6H_5CHO
- 4) CH_3CHO

Ques # :66

Select the incorrect statement

- 1) Neoprene is formed by polymerization of chloroprene
- 2) $[-CH_2 - CH(C_6H_5)]_n$ is a copolymer
- 3) Rubber is a natural polymer of isoprene
- 4) Sulphur is added to raw rubber for vulcanization

Ques # :67

For the manufacturing of Insulators and television cabinets, the polymer used is

- 1) Polystyrene
- 2) Glyptal

- 3) Nylon-66
- 4) Dacron

Ques # :68

Carboxyhaemoglobin is formed in the blood due to

- 1) CO_2
- 2) CO
- 3) $CO + H_2$
- 4) CH_4

Ques # :69

Ortho-sulphobenzimide is known as

- 1) Aspartame
- 2) Saccharin
- 3) Sucralose
- 4) Alitame

Ques # :70

Which of the following antibiotic is not bacteriostatic?

- 1) Penicillin
- 2) Erythromycin
- 3) Tetracycline
- 4) Chloramphenicol

Ques # :71

An example of colloidal system in which dispersion medium is liquid -

- 1) Cheese
- 2) Milk
- 3) Smoke
- 4) Fog

Ques # :72

Photochemical smog consists of

- 1) Oxides of sulphur
 - 2) Smoke and dust
 - 3) Oxides of nitrogen and hydrocarbons
 - 4) Colloidal particles of carbon and Lead
-

Ques # :73

Which of the following does not trap terrestrial radiation?

- 1) CO_2
 - 2) H_2O
 - 3) CH_4
 - 4) N_2
-

Ques # :74

Calculate the molar conductivity of NH_4OH at infinite dilution from the molar conductivities ($s\ mol^{-1}\ cm^2$) of strong electrolytes : $NaCl = 126.4$, $NaOH = 248.4$, $NH_4Cl = 149.8$ at infinite dilution

- 1) 412.6
 - 2) 307.8
 - 3) 271.8
 - 4) 225.0
-

Ques # :75

At $25^\circ C$. The Potential of a hydrogen electrode ($p_{H_2} = 1$ atmosphere) in contact with solution of $pH=10$ is

- 1) 0.0 Volt
- 2) -0.591 Volt
- 3) 1.0 Volt
- 4) 0.00591 Volt

Ques # :76

Which one of the following noble gases does not form clathrate compounds?

- 1) Ar
- 2) Kr
- 3) Xe
- 4) Ne

Ques # :77

Among the following ions, the highest paramagnetic moment is of -

- 1) V^{3+}
- 2) Mn^{2+}
- 3) CO^{2+}
- 4) Ni^{2+}

Ques # :78

Which of the following lanthanide element is not found in nature

- 1) Cerium
- 2) Samarium
- 3) Promethium
- 4) Lutetium

Ques # :79

Which one of the following is not the role of calcium in human body ?

- 1) Initiation of blood clotting
- 2) Trigger the contraction of muscles
- 3) Maintain regular beating of the heart
- 4) serves to transport and store oxygen

Ques # :80

The reaction between methyl chloride and aqueous KOH to form methyl alcohol is an example of-

- 1) Electrophilic substitution reaction

- 2) Nucleophilic substitution reaction
 - 3) Electrophilic addition reaction
 - 4) Nucleophilic addition reaction
-

Ques # :81

Absorption band in IR spectra for -C=O

Stretching vibrations will be present at-

- 1) 2820 cm^{-1}
 - 2) 1720 cm^{-1}
 - 3) 1300 cm^{-1}
 - 4) 3350 cm^{-1}
-

Ques # :82

The absorbance of a $1 \times 10^{-4} \text{ m}$ solution of a substance is 2.0 in a cell of 2.0 cm. path-length the molar extinction coefficient of the substance is

- 1) 1×10^{-4}
 - 2) 1×10^4
 - 3) 2×10^4
 - 4) 4×10^4
-

Ques # :83

The initial $1 \times 10^{-3} \text{ m}$ concentration of a reactant reduces to $0.5 \times 10^{-3} \text{ m}$ in 50 min and to 0.25×10^{-3} in 100 min, from the start of the reaction the disappearance of the reactant is of -

- 1) Zero order
- 2) First order
- 3) Second order
- 4) Half order

Ques # :84

The $t_{1/2}$ of which of the following types of reactions is inversely proportional to the initial concentration of reactants

- 1) Zero order
- 2) First order
- 3) Second order
- 4) Third order

Ques # :85

In cold climate water gets frozen inside the car radiator damaging it. To avoid this ethylene glycol is added as antifreezing agent. Calculate the amount of ethylene glycol to be added to 3kg of water to prevent it from freezing at -6°C .

(K_f for water = $1.86 \text{ k Kg mol}^{-1}$)

- 1) 600 g
- 2) 500 g
- 3) 700 g
- 4) 800 g

Ques # :86

Friedel-crafts reaction is an example of

- 1) Addition reaction
- 2) Elimination reaction
- 3) Substitution reaction
- 4) Rearrangement reaction

Ques # :87

The number of DNA molecules per metaphase chromosome is :

- 1) One
- 2) Two
- 3) Four
- 4) Not definite

Ques # :88

The amino acid encoded by the start codon AUG, in

- 1) f-methionine
- 2) Methionine
- 3) Valine
- 4) Threonine

Ques # :89

Which of the following is an example of a disaccharide

- 1) mannose
- 2) Galactose
- 3) Dextose
- 4) Maltose

Ques # :90

The lateral roots originate from

- 1) Pericycle
- 2) Periderm
- 3) Endodermis
- 4) Periblem

Ques # :91

| Column I | | Column II |
|-------------------|-----|----------------|
| A. Poinsettia | I | Verticillaster |
| B. Fig | II | Captitulum |
| C. Salvia | III | Cyathium |
| D. Margosa (Neem) | IV | Hypanthodium |
| E. Sun flower | V | Panicle |

- 1) A-III, B-IV, C-I, D-V, E-II
- 2) A-V, B-I, C-II, D-IV, E-III
- 3) A-III, B-V, C-IV, D-II, E-I
- 4) A-IV, B-III, C-II, D-I, E-V

Ques # :92

Movement of molecules from its higher concentration to its lower concentration is known as

- 1) Osmosis
 - 2) Plasmolysis
 - 3) Diffusion
 - 4) Active transport
-

Ques # :93

Which of the following is NOT an example of a trace element

- 1) Copper
 - 2) Iron
 - 3) Manganese
 - 4) Magnesium
-

Ques # :94

The enzyme responsible for photorespiration is

- 1) RUBISCO
 - 2) GOGAT
 - 3) Phosphoenol pyruvate
 - 4) Fructo kinase
-

Ques # :95

Respiratory Quotient

- 1) $\frac{\text{Volume of carbon - di - oxide consumed}}{\text{Volume of oxygen evolved}}$
 - 2) $\frac{\text{Volume of oxygen consumed}}{\text{Volume of carbon - di - oxide evolved}}$
 - 3) $\frac{\text{Volume of carbon - di - oxide evolved}}{\text{Volume of oxygen consumed}}$
 - 4) $\frac{\text{Volume of oxygen evolved}}{\text{Volume of carbon - di - oxide consumed}}$
-

Ques # :96

The Koshland's Theory of enzyme action is known as

- 1) Allosteric theory
 - 2) Lock and key theory
 - 3) Induced-fit theory
 - 4) Zymogen theory
-

Ques # :97

Rooting is induced by

- 1) High auxin/cytokinin Ratio
 - 2) Low auxin/cytokinin Ratio
 - 3) Both auxin and cytokinin in equal amount
 - 4) Application of ethylene
-

Ques # :98

Using the codes given below arrange the sequence of events taking place during the water cycle. A. Precipitation B. Condensation C. Evaporation

- 1) ABC
 - 2) BCA
 - 3) CAB
 - 4) CBA
-

Ques # :99

Which of the following green house gas is primarily essential for sustenance of life on earth

- 1) Carbon dioxide
 - 2) Methane
 - 3) Nitrous oxide
 - 4) Ozone
-

Ques # :100

Darwin's explanation of the way in which evolution occurs is that :

- 1) God determines which species should evolve
- 2) Progressive adaptations enable one species to leave more off-springs
- 3) Certain species have built-in plans of evolution
- 4) Those traits used more often persist longer

Ques # :101

A mutation in which Adenine is replaced by Guanine, is of which type:

- 1) Transition
 - 2) Transcription
 - 3) Transversion
 - 4) Frame shift mutation
-

Ques # :102

Person having antigen B on surface of RBCs has

- 1) blood group B
 - 2) blood group A
 - 3) blood group O
 - 4) blood group AB
-

Ques # :103

Which of the following may be a 'recognition sequence' for a restriction endonuclease:

- 1) GATTAG
 - 2) GTATAG
 - 3) GTATAC
 - 4) CATTAG
-

Ques # :104

Which of the following is NOT a connective tissue

- 1) blood
 - 2) Bone
 - 3) Cartilage
 - 4) Muscle
-

Ques # :105

Which of the following is the "thinking part" of the brain :

- 1) Fore brain

- 2) Mid brain
 - 3) Hind brain
 - 4) Hypothalamus
-

Ques # :106

Trypsinogen is converted into trypsin by which enzyme

- 1) Enterokinase
 - 2) Carboxy peptidase
 - 3) Di peptidase
 - 4) Nucleotidase
-

Ques # :107

Earth worm testis are situated in :

- 1) 12th & 13th Segments
 - 2) 10th & 11th Segments
 - 3) 9th & 10th Segments
 - 4) 11th & 12th Segments
-

Ques # :108

Oestrus cycle is not a feature of

- 1) Monkey
 - 2) Deer
 - 3) Dog
 - 4) tiger
-

Ques # :109

Who is regarded as the father of Genetics:

- 1) Aristotle
 - 2) Morgan
 - 3) Mendel
 - 4) Linnaeus
-

Ques # :110

Mode of nutrition in fungi is :

- 1) Saprophytic/Parasitic
 - 2) Saprophytic/Photosynthetic
 - 3) Saprophytic/Chemosynthetic
 - 4) Parasitic/Chemosynthetic
-

Ques # :111

Which part of the sperm provides energy for its movement :

- 1) Acrosome
 - 2) head
 - 3) Middle piece
 - 4) Tail
-

Ques # :112

The largest endocrine gland in human body is :

- 1) Thyroid
 - 2) Pituitary
 - 3) Adrenal
 - 4) Pancreas
-

Ques # :113

During embryogenesis, the 16 cell stage is called :

- 1) Blastomere
 - 2) Blastocyte
 - 3) Morula
 - 4) Gastrula
-

Ques # :114

Main excretory substance in mammals is :

- 1) Ammonia
- 2) Amino acid
- 3) Uric acid
- 4) Urea

Ques # :115

At high altitude erythrocytes in the human blood cell.

- 1) Decrease in number
- 2) Decrease in size
- 3) Increase in number
- 4) Increase in size

Ques # :116

Frog's egg are

- 1) Mesolecithal
- 2) Microlecithal
- 3) Alecithal
- 4) Macrolecithal

Ques # :117

Pyrenoids are

- 1) Protein surrounded by starch
- 2) Starch surrounded by protein
- 3) Starch globules
- 4) Fat droplets enclosed in protein membrane

Ques # :118

Match the plant diseases mentioned in column I with their casual organism in column II. Select the correct answer using the codes given

Column I

- A. Green ear disease
- B. Ergot
- C. Red Rust of Tea
- D. Rust of Wheat
- E. Smut of Barley

Column II

- (i) Puccinia spp
- (ii) Cephaleuros spp
- (iii) Ustilago spp
- (iv) Claviceps spp
- (v) Sclerospora

- 1) A (ii), B (v), C (i), D (iv), E (iii)
- 2) A (i), B (iii), C (iv), D (ii), E (v)
- 3) A (v), B (iv), C (ii), D (i), E (iii)

4) A (iv), B (ii), C (v), D (iii), E (i)

Ques # :119

If the chromosome number in the leaf of Funaria is 20, what will be the chromosome number in its spores

- 1) 20
 - 2) 40
 - 3) 10
 - 4) 5
-

Ques # :120

Most advanced order in gymnosperms is

- 1) Cycadales
 - 2) Coniferales
 - 3) Gnetales
 - 4) Taxales
-

Ques # :121

Which of the following is not an example of bast fibre:

- 1) Jute
 - 2) Coir
 - 3) Flax
 - 4) Hemp
-

Ques # :122

Dictyosomes are the units of

- 1) Golgi complex
 - 2) Mitochondria
 - 3) Glyoxysomes
 - 4) Nucleosomes
-

Ques # :123

Consider the following statements and select the CORRECT ones using the codes given below A.

Concentric vascular bundle is always closed B. Amphicribal vascular bundle has phloem surrounded by xylem C. Amphicribal vascular bundle has xylem surrounded by phloem

- 1) A and B
 - 2) B and C
 - 3) A and C
 - 4) A, B and C
-

Ques # :124

Which of the following is an adapter molecule :

- 1) tRNA
 - 2) mRNA
 - 3) rRNA
 - 4) hnRNA
-

Ques # :125

The 'Triple response' is a bioassay for:

- 1) Auxin
 - 2) Gibberellin
 - 3) Cytokinin
 - 4) Ethylene
-

Ques # :126

Hair present in the skin are:

- 1) Epidermal in origin & made of dead cells
 - 2) Dermal in origin & made of dead cells
 - 3) Epidermal in origin & made of living cells
 - 4) Dermal in origin & made of living cells
-

Ques # :127

'Organ of Jacobson' in amphibians is for :

- 1) Sound
- 2) Smell
- 3) Pressure
- 4) Temperature

Ques # :128

The number of types of gametes produced by a homologous individual is :

- 1) 1
- 2) 2
- 3) 3
- 4) many

Ques # :129

Theory of use and disuse of an organ was propounded by

- 1) Darwin
- 2) Lamarck
- 3) Hugo De Vries
- 4) Morgan

Ques # :130

Which of the following enzyme is used to cut DNA molecule internally:

- 1) Restriction enzyme
- 2) Restriction exonuclease
- 3) Restriction endonuclease
- 4) Ribo nuclease H

Ques # :131

With which one of the following the syntactical structure of science is concerned?

- 1) Conceptual schemes of science
- 2) Social perspective of science
- 3) Process of science
- 4) Major ideas of science

Ques # :132

The concept of 'scientific method' was propounded by

- 1) Kilpatrick
- 2) John Dewey
- 3) William James
- 4) Morrison

Ques # :133

Quotation stated by Keats " Truth is beauty, beauty is truth," reflects which of the following values of science?

- 1) Practical value
- 2) Cultural value
- 3) Intellectual value
- 4) Aesthetic value

Ques # :134

NCF-2005 recommends that teaching of science at secondary level should emphasize maximum on :

- 1) Memorizing all scientific terms given in text books
- 2) Answering all questions given in text books
- 3) Improving student's performance in examinations
- 4) Relating classroom learning to life outside school

Ques # :135

Out of the following, which statement shows 'Aim of Teaching Science'?

- 1) Students will be able to recall Newton's first law
- 2) Students will be able to compare Newton's first and second laws
- 3) Students will be able to make relationship between various facts of third law of Newton
- 4) To develop reasoning ability in child

Ques # :136

Incorrect order of Herbertian steps of lesson plan are given below : (a) introduction (b) presentation (c) generalization (d) comparison (e) application The correct logical order from the options given below is :

- 1) 1-(a), 2-(b), 3-(c), 4- (d), 5-(e)
- 2) 1-(a), 2-(b), 3-(d), 4- (c), 5-(e)
- 3) 1-(b), 2-(a), 3-(c), 4- (d), 5-(e)
- 4) 1-(a), 2-(b), 3-(d), 4- (e), 5-(c)

Ques # :137

Which one of the following is not a quality of good test

- 1) Validity
 - 2) Diagnostic
 - 3) Reliability
 - 4) Objectivity
-

Ques # :138

Constructivism as a theory

- 1) Emphasize the role of learner in connecting her own view of the world.
 - 2) Focuses on the role of imitation
 - 3) Emphasizes on memorising information and testing through recall
 - 4) Emphasizes on the dominant role of the teacher
-

Ques # :139

Origin of unit plan is from

- 1) Behaviourism
 - 2) Gestalt psychology
 - 3) Constructivism
 - 4) Psychoanalysis
-

Ques # :140

The idea of "laboratory on wheels" was conceived by

- 1) UNESCO
 - 2) NCERT
 - 3) CBSE
 - 4) NUEPA
-

Ques # :141

The main aim of continuous and comprehensive evaluation is to :

- 1) provide grades in seven point scale
 - 2) conduct formative assessment only.
 - 3) evaluate every aspect of the child during their presence at the school
 - 4) conduct summative assessment only.
-

Ques # :142

A teacher uses audio-visual aids and physical activities in her teaching because they

- 1) provide diversion to learners
 - 2) utilize maximum number of senses to enhance learning
 - 3) provide relief to teacher
 - 4) facilitate effective assessment
-

Ques # :143

Branching programme was developed by :

- 1) Skinner
 - 2) Gilbert
 - 3) Crowder
 - 4) Thorndike
-

Ques # :144

Which teaching method of science places the students as far as possible in the attitude of discoverer?

- 1) Lecture-demonstration method
 - 2) Heuristic method
 - 3) Inductive method
 - 4) Deductive method
-

Ques # :145

Main purpose of evaluation is to

- 1) set question paper only
 - 2) maintain discipline only
 - 3) conduct examination only
 - 4) know student performance and bring improvement
-

Ques # :146

If a student gets acid burn while working in a science laboratory, she/he should be treated with :

- 1) Hydrochloric acid
- 2) Sodium hydrogencarbonate
- 3) Sodium chloride
- 4) Citric acid

Ques # :147

Out of the following which strategy of science teaching is considered as a meta cognitive tool

- 1) Concept mapping
 - 2) Computer assisted learning
 - 3) Brain storming
 - 4) Co-operative learning
-

Ques # :148

Teaching method which develops reflective thinking and logical discussion in students is

- 1) Problem solving method
 - 2) Project method
 - 3) Observation method
 - 4) Demonstration method
-

Ques # :149

Out of the following which is not a learner-centred method of teaching science

- 1) Heuristic method
 - 2) Project method
 - 3) Lecture-demonstration method
 - 4) Laboratory method
-

Ques # :150

The objective related to psychomotor domain is connected with :

- 1) Valuing
 - 2) Application
 - 3) Characterization
 - 4) Habit formation
-