

Bihar STET

**Previous Year Paper
PGT (Physics)
13 Sept, 2023 Shift 1**

QUESTION PAPER
Uchcha Madhyamic Physics [SHIFT - 1]

Exam Date : 13/09/2023
Subject Name : Physics

Time : 03:00 PM - 05:30 PM
Subject Code : 214

Subject Question

Question 1
which of the following is the SI unit of electric flux?
Answer :
(A) Weber
(B) Volt /meter
(C) Vm
(D) Nm

Question Id : 1

Option Id
☐ 1001
☐ 1002
☐ 1003
☐ 1004

Right Answer :
Vm

Right Option Id : 1003

Question 2
A partical of mass m and fixed kinetic energy K is moving in a circle. The magnitude of its average velocity over a half-cycle is
Answer :
(A) $\left(\frac{8k}{\pi^2}m\right)^{\frac{1}{2}}$
(B) $\frac{2}{\pi}\left(\frac{k}{m}\right)^{\frac{1}{2}}$
(C) $(2k/2)^{\frac{1}{2}}$
(D) None of these

Question Id : 55

Option Id
☐ 55001

☐ 55002

☐ 55003

☐ 55004

Right Answer :
 $\left(\frac{8k}{\pi^2}m\right)^{\frac{1}{2}}$

Right Option Id : 55001

Question 3
The mass of the bob of a simple pendulum is m. At the lower point, the bob is given such a horizontal velocity that is undergoes vertical circular motions. The difference between tension force in the string will be
Answer :
(A) 4mg
(B) 5mg
(C) 6mg
(D) None of these

Question Id : 54

Option Id
☐ 54001
☐ 54002
☐ 54003
☐ 54004

Right Answer :
6mg

Right Option Id : 54003

Question 4
The mass of an inhomogeneous ring of radius R is M. At a point in its axis, at distance x from its centre,
Answer :
(A) The gravitational potential is $-GM/(r^2 + x^2)^{\frac{1}{2}}$
(B) the magnitude of gravitational field intensity is $Gmx/(r^2 + x^2)^{\frac{1}{2}}$
(C) the gravitational potential is $-GM/de$
(D) None of these

Question Id : 53

Option Id
☐ 53001
☐ 53002

☐ 53003

☐ 53004

Right Answer :
The gravitational potential is $-GM/(r^2 + x^2)^{\frac{1}{2}}$

Right Option Id : 53001

Question 5

The distance between the centres of the Earth and its satellite is d, and the masses of the Earth and the satellite are M and m, respectively. If their centre of mass be at rest, the orbital speed of the satellite will be

Answer :

- (A) $M\sqrt{\frac{6}{(M+m)d}}$
- (B) $\sqrt{\frac{6M}{d}}$
- (C) $m\sqrt{\frac{6}{(M+m)d}}$
- (D) None of these

Option Id

- ☒ 52001
- ☐ 52002
- ☐ 52003
- ☐ 52004

Right Answer :

$M\sqrt{\frac{6}{(M+m)d}}$

Right Option Id : 52001

Question 6

A torque τ is applied about the axis of a cylinder for a time interval of t. the mass and the radius of the cylinder are M and R, respectively. The angular velocity produced will be

Answer :

- (A) $2\tau t/MR^2$
- (B) $2\tau t/MR^2$
- (C) $2\tau T/MR^2$
- (D) None of these

Option Id

- ☐ 51001
- ☐ 51002
- ☐ 51003
- ☐ 51004

Right Answer :

$2\tau t/MR^2$

Right Option Id : 51001

Question 7

If the vector $\vec{r}$ of a particle turns about the origin at an angular velocity $\vec{\omega}(\perp \vec{r})$ the velocity $\vec{v}$ of the particle is given by:

Answer :

- (A) $\vec{v}=\vec{r} \times \vec{\omega}$
- (B) $\vec{\omega}=\vec{r} \times \vec{v}$
- (C) $\vec{\omega}r= \vec{v}$
- (D) None of these

Option Id

- ☐ 50001
- ☐ 50002
- ☐ 50003
- ☐ 50004

Right Answer :

$\vec{v}=\vec{r} \times \vec{\omega}$

Right Option Id : 50002

Question 8

Which of the following the expressions represents correctly the velocity of a particle moving in XY- plane in terms of its generalized co-ordinates (r,θ)?

Answer :

- (A) $\begin{bmatrix} \dot{x} \\ \dot{y} \end{bmatrix} = \begin{bmatrix} \cos \theta & -r \sin \theta \\ \sin \theta & -r \cos \theta \end{bmatrix} \begin{bmatrix} \dot{r} \\ \dot{\theta} \end{bmatrix}$
- (B) $\begin{bmatrix} \dot{x} \\ \dot{y} \end{bmatrix} = \begin{bmatrix} \sin \theta & r \sin \theta \\ \cos \theta & -r \cos \theta \end{bmatrix} \begin{bmatrix} \dot{r} \\ \dot{\theta} \end{bmatrix}$
- (C) $\begin{bmatrix} \dot{x} \\ \dot{y} \end{bmatrix} = \begin{bmatrix} -r \sin \theta & \cos \theta \\ r \cos \theta & \sin \theta \end{bmatrix} \begin{bmatrix} \dot{r} \\ \dot{\theta} \end{bmatrix}$
- (D) none of these

Option Id

- ☐ 49001
- ☐ 49002
- ☐ 49003
- ☐ 49004

Right Answer :

$\begin{bmatrix} \dot{x} \\ \dot{y} \end{bmatrix} = \begin{bmatrix} \cos \theta & -r \sin \theta \\ \sin \theta & -r \cos \theta \end{bmatrix} \begin{bmatrix} \dot{r} \\ \dot{\theta} \end{bmatrix}$

Right Option Id : 49001

Question 9

Select the incorrect statement :

Answer :

Question Id : 48

Option Id

(A) If the Lagrangian L is explicit function of time, the Hamiltonian is equal to total energy

(B) The relationship between generalized momentum p is $q^\circ = \partial H / \partial p$

(C) The rate of change of generalized momentum is $(-\partial H / \partial q)$

(D) Action is the time -integral of Lagrangian

48001

48002

48003

48004

Right Answer :

If the Lagrangian L is explicit function of time, the Hamiltonian is equal to total energy

Right Option Id : 48001

Question 10

Select the incorrect statement :

Answer :

(A) The speed of light in a vaccum has the same value in all the inertial frames

(B) Neither mass nor energy is conserved, but ,mass-energy is conserved

(C) In different inertial frames, neither time interval nor space interval remains the same, but the square of the interval of space-time remains the same

(D) If a cube moves in a direction normal to its one face, all the 12 sides of the cube get contracted

Question Id : 47

Option Id

47001

47002

47003

47004

Right Answer :

If a cube moves in a direction normal to its one face, all the 12 sides of the cube get contracted

Right Option Id : 47004

Question 11

The modulus of elasticity is dimensionally equivalent to:

Answer :

(A) Strain

(B) Surface tension

(C) stress

(D) Poisson's ratio

Question Id : 46

Option Id

46001

46002

46003

46004

Right Answer :

stress

Right Option Id : 46003

Question 12

If there is no change in the volume off wire due to change in its length on stretching, the Poisson's ratio of material of wire is:

Answer :

(A) -0.5

(B) 0.5

(C) -0.25

(D) 0.25

Question Id : 45

Option Id

45001

45002

45003

45004

Right Answer :

-0.5

Right Option Id : 45001

Question 13

The Young's modulus for a plastic body is:

Answer :

(A) less than 1

(B) 0

(C) 1

(D) Infinity

Question Id : 44

Option Id

44001

44002

44003

44004

Right Answer :

0

Right Option Id : 44002

Question 14

A liquid has only:

Answer :

(A) Bulk modulus

Question Id : 43

Option Id

43001

(B) Youngs modulus
(C) Shear modulus
(D) All of the above

43002
43003
43004

Right Answer :
Bulk modulus

Right Option Id : 43001

Question 15

What do we call the maximum velocity of a fluid in a tube for which the flow remains streamlined?

Answer :

(A) Lamellar velocity
(B) critical velocity
(C) Streamlined velocity
(D) Hyper velocity

Question Id : 42

Option Id

42001
42002
42003
42004

Right Answer :
critical velocity

Right Option Id : 42002

Question 16

Bernoulli's theorem deals with the principles of:

Answer :

(A) Energy
(B) Force
(C) Mass
(D) Momentum

Question Id : 41

Option Id

41001
41002
41003
41004

Right Answer :
Energy

Right Option Id : 41001

Question 17

When is a fluid called turbulent?

Answer :

(A) High viscosity of fluid
(B) Reynolds number is greater than 2000
(C) Reynolds number is less than 2000
(D) The density of the fluid is low

Question Id : 56

Option Id

56001
56002
56003
56004

Right Answer :
Reynolds number is less than 2000

Right Option Id : 56003

Question 18

An iron needle floats on the surface of water. This phenomenon is attributed to:

Answer :

(A) Upthrust of liquid
(B) Surface tension
(C) Gravitational force
(D) Nuclear force

Question Id : 57

Option Id

57001
57002
57003
57004

Right Answer :
Surface tension

Right Option Id : 57002

Question 19

Work done in increasing the size of a soap bubble from a radius of 3 cm to 5 cm is nearly (Surface tension of soap solution =0.03 Nm⁻¹):

Answer :

(A) 4π mJ
(B) 2π mJ
(C) 0.4π mJ

Question Id : 58

Option Id

58001
58002
58003

(D) π mJ	58004
Right Answer : 0.4π mJ	Right Option Id : 58003
Question 20 With rise in temperature, the liquid height in a capillary will: Answer : (A) Increase (B) Decrease (C) Remain constant (D) First decrease then increase	Question Id : 67 Option Id 67001 67002 67003 67004 Right Option Id : 67002
Question 21 The Zeroth law of thermodynamics based on which parameter? Answer : (A) Temperature (B) Pressure (C) Density (D) Velocity	Question Id : 73 Option Id 73001 73002 73003 73004 Right Option Id : 73001
Question 22 "When two body are in thermal equilibrium with the third body, then they all are also in thermal equilibrium with each other". This statement by which law? Answer : (A) Second law of thermodynamics (B) Third law of thermodynamics (C) First law of thermodynamics (D) Zeroth law of thermodynamics	Question Id : 72 Option Id 72001 72002 72003 72004 Right Option Id : 72003
Question 23 Which of the following occurs without a change in the internal energy? Answer : (A) Isochoric process (B) Isobaric process (C) Steady-state process (D) Isothermal process	Question Id : 71 Option Id 71001 71002 71003 71004 Right Option Id : 71002
Question 24 Which of the following follows the Carnot theorem? Answer : (A) Heat engines (B) Gas turbine engines (C) Gas compressors (D) All of the mentioned	Question Id : 70 Option Id 70001 70002 70003 70004 Right Option Id : 70004

Question 25

The enthalpy and internal energy are the function of temperature for:

Answer :

- (A) all gases
- (B) steam
- (C) water
- (D) ideal gas

Right Answer :
ideal gas

Question Id : 69

- | | Option Id |
|-----------------------|-----------|
| ☐ | 69001 |
| ☐ | 69002 |
| ☐ | 69003 |
| ☐ | 69004 |

Right Option Id : 69004

Question 26

Which of the following is true according to Clausius statement?

Answer :

- (A) it is possible to construct a device that can transfer heat from a cooler body to a hotter body without any effect
- (B) it is impossible to construct a device that can transfer heat from a cooler body to a hotter body without any effect
- (C) it is impossible to construct a device that can transfer heat from a hotter body to a cooler body without any effect
- (D) none of the mentioned

Right Answer :
it is impossible to construct a device that can transfer heat from a cooler body to a hotter body without any effect

Question Id : 68

- | | Option Id |
|-----------------------|-----------|
| ☐ | 68001 |
| ☐ | 68002 |
| ☐ | 68003 |
| ☐ | 68004 |

Right Option Id : 68002

Question 27

If a system undergoes a reversible isothermal process without transfer of heat, the temperature at which this process takes place is called

Answer :

- (A) triple point of water
- (B) boiling point of water
- (C) absolute zero
- (D) none of the mentioned

Right Answer :
absolute zero

Question Id : 66

- | | Option Id |
|-----------------------|-----------|
| ☐ | 66001 |
| ☐ | 66002 |
| ☐ | 66003 |
| ☐ | 66004 |

Right Option Id : 66003

Question 28

Which of the following thermodynamic law gives the concept of entropy?

Answer :

- (A) First law of thermodynamics
- (B) Second law of thermodynamics
- (C) Third law of thermodynamics
- (D) Zeroth law of thermodynamics

Right Answer :
Second law of thermodynamics

Question Id : 59

- | | Option Id |
|-----------------------|-----------|
| ☐ | 59001 |
| ☐ | 59002 |
| ☐ | 59003 |
| ☐ | 59004 |

Right Option Id : 59002

Question 29

Kelvin planks law of thermodynamics deals with:

Answer :

- (A) Conservation of work
- (B) Conservation of heat
- (C) Conversion of heat into work
- (D) Conversion of work into heat

Right Answer :
Conversion of heat into work

Question Id : 65

- | | Option Id |
|-----------------------|-----------|
| ☐ | 65001 |
| ☐ | 65002 |
| ☐ | 65003 |
| ☐ | 65004 |

Right Option Id : 65003

Question 30

The efficiency of a Carnot engine is 20%. The efficiency is increased to 30% when the sink temperature is reduced by 25°C. What will be the source temperature?

Answer :

(A) 200°C

(B) 450°C

(C) 300°C

(D) 250°C

Option Id

64001

64002

64003

64004

Right Answer :
250°C

Right Option Id : 64004

Question 31

If the two particles performing S.H.M. with same amplitude and initial phase angle then initial phase angle of resultant motion depends on

Answer :

(A) initial phase angle only

(B) initial phase angle and amplitude

(C) amplitude of individual only

(D) neither amplitude nor initial phase angle

Option Id

63001

63002

63003

63004

Right Answer :
initial phase angle only

Right Option Id : 63001

Question 32

The motion in which a body moves from one place to another with respect to time is called as.....

Answer :

(A) vibrational motion

(B) rotational motion

(C) circular motion

(D) translational motion

Option Id

62001

62002

62003

62004

Right Answer :
translational motion

Right Option Id : 62004

Question 33

A motion which repeats itself in equal interval of time is called as

Answer :

(A) periodic motion

(B) circular motion

(C) translational motion

(D) rotational motion

Option Id

61001

61002

61003

61004

Right Answer :
periodic motion

Right Option Id : 61001

Question 34

If the particles of the medium vibrate about their mean positions at right angles to the direction of propagation of wave, the wave is said to be.....

Answer :

(A) a transverse wave

(B) a longitudinal wave

(C) a stationary wave

(D) a sound wave

Option Id

60001

60002

60003

60004

Right Answer :
a transverse wave

Right Option Id : 60001

Question 35

Which is a mathematical equation for a progressive wave ?

Question Id : 40

Answer :

(A) $y = a \sin(kt - \omega x)$

(B) $y = a \sin(2\pi t - \lambda x)$

(C) $y = a \sin(\omega t - kx)$

(D) $y = a \sin(\lambda t - \phi)$

Option Id

40001

40002

40003

40004

Right Answer :

$y = a \sin(\omega t - kx)$

Right Option Id : 40003

Question 36

The distance between two consecutive nodes or antinodes is

Answer :

(A) λ

(B) $\lambda / 4$

(C) 2λ

(D) $\lambda / 2$

Question Id : 39

Option Id

39001

39002

39003

39004

Right Answer :

$\lambda / 2$

Right Option Id : 39004

Question 37

If an external periodic force is applied on an oscillator then it executes

Answer :

(A) Undamped free oscillations

(B) Damped free oscillations

(C) Forced oscillations

(D) None of the above

Question Id : 38

Option Id

38001

38002

38003

38004

Right Answer :

Forced oscillations

Right Option Id : 38003

Question 38

In steady state forced vibrations, the amplitude of vibrations at resonance isdamping coefficient.

Answer :

(A) equal to

(B) directly proportional to

(C) inversely proportional to

(D) independent of

Question Id : 37

Option Id

37001

37002

37003

37004

Right Answer :

inversely proportional to

Right Option Id : 37003

Question 39

..... in frequency (or pitch) occurs if the source of sound and the listener move with same velocity and in the same direction.

Answer :

(A) Change

(B) Increase

(C) Decrease

(D) No change

Question Id : 17

Option Id

17001

17002

17003

17004

Right Answer :

No change

Right Option Id : 17004

Question 40

The apparent change in frequency of a note (or pitch) whenever there is a relative motion between source and listener is known as

Answer :

(A) Piezo electric Effect

(B) Compton Effect

Question Id : 16

Option Id

16001

16002

(C) Doppler Effect	☐	16003
(D) Seebeck Effect	☐	16004
Right Answer : Doppler Effect		Right Option Id : 16003

Question 41 If vector field $B = x^2\hat{i} - xy\hat{j} - kxz\hat{k}$ represents a magnetic field then what is the value of k? Answer : (A) 0 (B) 1 (C) 2 (D) 3 Right Answer : 1	Question Id : 15 Option Id ☐ 15001 ☐ 15002 ☐ 15003 ☐ 15004 Right Option Id : 15002
---	---

Question 42 Capacitance (in F) of a spherical conductor of radius 1m is Answer : (A) 1.1×10^{-10} (B) 9×10^{-9} (C) 9×10^{-6} (D) 9×10^{-3} Right Answer : 1.1×10^{-10}	Question Id : 14 Option Id ☐ 14001 ☐ 14002 ☐ 14003 ☐ 14004 Right Option Id : 14001
---	---

Question 43 Three point charges +q, +2q and Q are placed at the three vertices of an equilateral triangle. What is the value of Q if the potential energy of the system is zero? Answer : (A) $\frac{2q}{3}$ (B) $\frac{-2q}{3}$ (C) $\frac{4q}{3}$ (D) $\frac{-2q}{3}$ Right Answer : $\frac{-2q}{3}$	Question Id : 13 Option Id ☐ 13001 ☐ 13002 ☐ 13003 ☐ 13004 Right Option Id : 13002
---	---

Question 44 Conservative nature of electric field means Answer : (A) Curl is zero (B) Divergence is zero (C) Gradient is zero (D) None of them Right Answer : Curl is zero	Question Id : 12 Option Id ☐ 12001 ☐ 12002 ☐ 12003 ☐ 12004 Right Option Id : 12001
--	---

--	--

Question 45

The correct relation between electric displacement D, electric field E and polarization P is

Answer :

- (A) $E = \epsilon_0 D + P$
- (B) $P = \epsilon_0 E + P$
- (C) $D = \epsilon_0 E + P$
- (D) $P = E + D$

Right Answer :

$D = \epsilon_0 E + P$

Question Id : 11

- | | Option Id |
|----------------------------------|-----------|
| ☐ | 11001 |
| ☐ | 11002 |
| ☒ | 11003 |
| ☐ | 11004 |

Right Option Id : 11003

Question 46

The tangential component of electric field for a perfect conductor will be

Answer :

- (A) Infinite
- (B) zero
- (C) same as normal component
- (D) none of them

Right Answer :

zero

Question Id : 10

- | | Option Id |
|----------------------------------|-----------|
| ☐ | 10001 |
| ☐ | 10002 |
| ☒ | 10003 |
| ☐ | 10004 |

Right Option Id : 10002

Question 47

A strong magnetic field B is applied to a stationary electron, then the electron will

Answer :

- (A) move in the direction of B
- (B) move in the opposite direction of B
- (C) remain stationary
- (D) move perpendicular to B

Right Answer :

remain stationary

Question Id : 9

- | | Option Id |
|----------------------------------|-----------|
| ☐ | 9001 |
| ☐ | 9002 |
| ☒ | 9003 |
| ☐ | 9004 |

Right Option Id : 9003

Question 48

The value of magnetic field at a distance of 2 cm from a very long straight wire carrying a current of 5 A?

Answer :

- (A) $5 \times 10^{-5} \text{ T}$
- (B) $10 \times 10^{-5} \text{ T}$
- (C) $5 \times 10^{-4} \text{ T}$
- (D) $15 \times 10^{-6} \text{ T}$

Right Answer :

$5 \times 10^{-5} \text{ T}$

Question Id : 8

- | | Option Id |
|----------------------------------|-----------|
| ☐ | 8001 |
| ☐ | 8002 |
| ☒ | 8003 |
| ☐ | 8004 |

Right Option Id : 8001

Question 49

The law which states that the line integral of the magnetic field around a closed curve is equal to the free current through a surface, is

Answer :

- (A) Faraday's law
- (B) Gauss' law
- (C) Ampere's law
- (D) Coulomb's law

Right Answer :

Ampere's law

Question Id : 7

- | | Option Id |
|----------------------------------|-----------|
| ☐ | 7001 |
| ☐ | 7002 |
| ☒ | 7003 |
| ☐ | 7004 |

Right Option Id : 7003

Question 50

In order to minimize hysteresis loss, the magnetic material should have

Answer :

- (A) High resistivity

Question Id : 6

- | | Option Id |
|-----------------------|-----------|
| ☐ | 6001 |

(B) Low hysteresis co-efficient
(C) Large B - H loop area
(D) High retentivity

6002
6003
6004

Right Answer :
Low hysteresis co-efficient

Right Option Id : 6002

Question 51
Which of the following is found using Lenz's law?
Answer :
(A) Induced emf
(B) Induced current
(C) The direction of induced emf
(D) The direction of alternating current

Option Id
5001
5002
5003
5004

Right Answer :
The direction of induced emf

Right Option Id : 5003

Question 52
The energy stored in a 70 mH inductor carrying a current of 5 A is
Answer :
(A) 0.875 J
(B) 0.556 J
(C) 0.755 J
(D) 0.655 J

Option Id
4001
4002
4003
4004

Right Answer :
0.875 J

Right Option Id : 4001

Question 53
The magnetic flux varies as per the relation $\phi = 8t^2 + 6t + 2$ (where ϕ is in milliweber and t is in second).
What is the magnitude of induced emf in the loop at t=2 seconds?
Answer :
(A) 40 mV
(B) 36 mV
(C) 38 mV
(D) 42 mV

Option Id
3001
3002
3003
3004

Right Answer :
38 mV

Right Option Id : 3003

Question 54
A magnet is brought towards a coil first (i) speedily (ii) slowly. It can be concluded that the induced emf will be :
Answer :
(A) smaller in case (i)
(B) equal in both cases
(C) larger in case (i)
(D) None of them equal in both cases

Option Id
18001
18002
18003
18004

Right Answer :
larger in case (i)

Right Option Id : 18003

Question 55
If the refractive index of the water is approximately 1.3, then the speed of light in the water is
Answer :
(A) 1.3 c
(B) 0.77 c

Option Id
2001
2002

(C) 1.1 c
(D) 1.5 c

2003
2004

Right Answer :
0.77 c

Right Option Id : 2002

Question 56
The Maxwell's first equation is obtained from
Answer :
(A) Coulomb's law
(B) Gauss Law
(C) Ampere's Law
(D) Faraday's Law

Question Id : 19

Option Id
19001
19002
19003
19004

Right Answer :
Gauss Law

Right Option Id : 19002

Question 57
The directions of the propagation vector k and the Poynting vector S for an electromagnetic wave are
Answer :
(A) parallel to each other
(B) anti-parallel to each-other
(C) normal to each other
(D) any other angle

Question Id : 21

Option Id
21001
21002
21003
21004

Right Answer :
parallel to each other

Right Option Id : 21001

Question 58
The reflection coefficient in the wave propagation when it is transmitted with the Brewster angle is
Answer :
(A) 0
(B) 1
(C) -1
(D) infinite

Question Id : 36

Option Id
36001
36002
36003
36004

Right Answer :
0

Right Option Id : 36001

Question 59
If the critical angle for total internal reflection from a medium to vacuum is 30o , then the speed of light in the medium is
Answer :
(A) 1 x 10⁸ m/s
(B) 2 x 10⁸/ m/s
(C) 1.5 x 10⁸ m/s
(D) 2.5 x 10⁸ m/s

Question Id : 35

Option Id
35001
35002
35003
35004

Right Answer :
1.5 x 10⁸ m/s

Right Option Id : 35003

Question 60
When light passes (with normal incidence) from air (n1=1) into glass (n2=1.5), the reflection coefficient is
Answer :
(A) R=0
(B) R=0.04
(C) R=0.96
(D) R=1

Question Id : 34

Option Id
34001
34002
34003
34004

Right Answer :
R=0.04

Right Option Id : 34002

Question 61

The time constant of an inductive coil is 2.5×10^{-3} second. When 80 ohm resistance is added in series the time constant reduces to 0.5×10^{-3} second , the resistance of the coil is ?

Answer :

(A) 200 ohm

(B) 20 ohm

(C) 50 ohm

(D) None

Question Id : 33

Option Id

33001

33002

33003

33004

Right Answer :
20 ohm

Right Option Id : 33002

Question 62

A coil of inductance 50H and resistance 30 ohm is connected to a 100 V Battery . How long will it take the current to grow one half of its final value?

Answer :

(A) 2.15 sec

(B) 4.50 sec

(C) 1.15 sec

(D) 0.15 sec

Question Id : 32

Option Id

32001

32002

32003

32004

Right Answer :
1.15 sec

Right Option Id : 32003

Question 63

A battery of 6 V and internal resistance of 0.5 ohm is joined in parallel with another battery of 10 V and internal resistance 10 ohm. The combination sends a current through an external resistance of 12 ohm . If I_1 and I_2 be the currents given by two batteries , then the current through each Battery is ? or $I_1 = ?$ and $I_2 = ?$

Answer :

(A) $I_1 = -2.27A$, $I_2 = 2.865 A$

(B) $I_1 = 2.865 A$ $I_2 = 2.27A$

(C) $I_1 = 6A$, $I_2 = 10 A$

(D) None of these.

Question Id : 31

Option Id

31001

31002

31003

31004

Right Answer :
 $I_1 = -2.27A$, $I_2 = 2.865 A$

Right Option Id : 31001

Question 64

What resistance must be connected in series with an inductor of 5 millihenry so that the circuit has a time constant of 2×10^{-3} sec ?

Answer :

(A) 2.5 ohm

(B) 4 ohm

(C) 7.5 ohm

(D) None

Question Id : 30

Option Id

30001

30002

30003

30004

Right Answer :
2.5 ohm

Right Option Id : 30001

Question 65

A resistor of 12 ohm, a capacitor of reactance 14 ohm and pure inductor of inductance 0.1 H are joined in series and placed across 200 V , 50 HZ Ac supply then what will be the current in the circuit and $\tan \phi$, where ϕ is the phase angle between current and voltage. choose the correct option (take $\pi = 3$)

Answer :

Question Id : 29

Option Id

(A) I=10 A and tanØ = 3/4

(B) I = 10 A and tan Ø = 9/4

(C) I = 10 A and tan Ø = 4/3

(D) None of them.

29001

29002

29003

29004

Right Answer :
I = 10 A and tan Ø = 4/3

Right Option Id : 29003

Question 66

what will be the instantaneous voltage for AC supply of 220 V and 50 Hertz ?

Answer :

(A) 311 sin 1000 π t

(B) 311 sin 10 π t

(C) 311 sin 100 π t

(D) None of these

Question Id : 28

Option Id

28001

28002

28003

28004

Right Answer :
311 sin 100 π t

Right Option Id : 28003

Question 67

choose the correct option.

Answer :

(A) capacitor Blocks dc and allow ac.

(B) capacitor offer infinite resistance to dc.

(C) Both (a) and (b) are correct.

(D) All are incorrect

Question Id : 27

Option Id

27001

27002

27003

27004

Right Answer :
Both (a) and (b) are correct.

Right Option Id : 27003

Question 68

what is the dimensional formula of √LC ?

Answer :

(A) [M⁰ L⁰ T¹]

(B) [M⁰ L⁰ T⁻¹]

(C) [M⁰ L² T¹]

(D) None of them

Question Id : 26

Option Id

26001

26002

26003

26004

Right Answer :
[M⁰ L⁰ T¹]

Right Option Id : 26001

Question 69

An alternating current of 1.5 mA and angular frequency w = 300 Radian / sec flows through 1.0 ki10 ohm resistor and a 0.5 μF capacitor in series .
What is the RMS voltage across the capacitor?

Answer :

(A) 10 V

(B) 144 V

(C) 1.0 V

(D) None

Question Id : 25

Option Id

25001

25002

25003

25004

Right Answer :
144 V

Right Option Id : 25002

Question 70

A capacitor of 1 μF is charged with 0.01C of electricity .
How much energy is stored in it ?

Answer :

- (A) 500 J
- (B) 550 J
- (C) 50 J
- (D) 5.0 J

Right Answer :
50 J

Question Id : 24

- | | Option Id |
|----------------------------------|-----------|
| ☐ | 24001 |
| ☐ | 24002 |
| ☒ | 24003 |
| ☐ | 24004 |

Right Option Id : 24003

Question 71

The Fraunhofer diffraction pattern on a screen through a circular aperture is of the form of

Answer :

- (A) Sine function
- (B) Delta function
- (C) Gaussian function
- (D) Airy pattern

Right Answer :
Airy pattern

Question Id : 23

- | | Option Id |
|----------------------------------|-----------|
| ☐ | 23001 |
| ☐ | 23002 |
| ☐ | 23003 |
| ☒ | 23004 |

Right Option Id : 23004

Question 72

The ratio of intensities of two waves of same frequency is 16:25. The ratio of their amplitude will be

Answer :

- (A) 16:25
- (B) 4:5
- (C) 3:5
- (D) 5:4

Right Answer :
4:5

Question Id : 22

- | | Option Id |
|----------------------------------|-----------|
| ☐ | 22001 |
| ☒ | 22002 |
| ☐ | 22003 |
| ☐ | 22004 |

Right Option Id : 22002

Question 73

Interference and diffraction of light supports in

Answer :

- (A) Wave nature
- (B) quantum nature
- (C) transverse nature
- (D) electromagnetic nature

Right Answer :
Wave nature

Question Id : 74

- | | Option Id |
|----------------------------------|-----------|
| ☐ | 74001 |
| ☐ | 74002 |
| ☐ | 74003 |
| ☒ | 74004 |

Right Option Id : 74001

Question 74

In a Fabry-Perot interferometer the circular fringes formed are referred to as fringes of

Answer :

- (A) equal thickness
- (B) equal inclination
- (C) equal chromatic order
- (D) none of these

Right Answer :
equal inclination

Question Id : 20

- | | Option Id |
|----------------------------------|-----------|
| ☐ | 20001 |
| ☒ | 20002 |
| ☐ | 20003 |
| ☐ | 20004 |

Right Option Id : 20002

Question 75

The brilliant colors in thin films of soap are due to

Answer :

- (A) dispersion
- (B) diffraction
- (C) scattering
- (D) interference

Right Answer :
interference

Question Id : 75

- | | Option Id |
|-----------------------|-----------|
| ☐ | 75001 |
| ☐ | 75002 |
| ☐ | 75003 |
| ☐ | 75004 |

Right Option Id : 75004

Question 76

In total internal reflection, when the angle of incidence is equal to the critical angle for the pair of media in contact, what will be angle of refraction ?

Answer :

- (A) 180°
- (B) 0°
- (C) 90°
- (D) equal to angle of incidence

Right Answer :
90°

Question Id : 78

- | | Option Id |
|-----------------------|-----------|
| ☐ | 78001 |
| ☐ | 78002 |
| ☐ | 78003 |
| ☐ | 78004 |

Right Option Id : 78003

Question 77

Huygens' wave theory of light cannot explain

Answer :

- (A) Diffraction phenomena
- (B) Interference phenomena
- (C) Photoelectric effect
- (D) Polarization of light

Right Answer :
Photoelectric effect

Question Id : 92

- | | Option Id |
|-----------------------|-----------|
| ☐ | 92001 |
| ☐ | 92002 |
| ☐ | 92003 |
| ☐ | 92004 |

Right Option Id : 92003

Question 78

When Two waves of same amplitude add constructively, the intensity becomes

Answer :

- (A) Double
- (B) Half
- (C) Four Times
- (D) One-Fourth

Right Answer :
Four Times

Question Id : 93

- | | Option Id |
|-----------------------|-----------|
| ☐ | 93001 |
| ☐ | 93002 |
| ☐ | 93003 |
| ☐ | 93004 |

Right Option Id : 93003

Question 79

The laws of reflection hold good for

Answer :

- (A) plane mirror only
- (B) concave mirror only
- (C) convex mirror only
- (D) all mirrors irrespective of their shape

Right Answer :
all mirrors irrespective of their shape

Question Id : 94

- | | Option Id |
|-----------------------|-----------|
| ☐ | 94001 |
| ☐ | 94002 |
| ☐ | 94003 |
| ☐ | 94004 |

Right Option Id : 94004

Question 80

If white light is used in Young's double slit experiment, then the central fringe will be

Answer :

Question Id : 97

Option Id

(A) Red

(B) Coloured

(C) White

(D) Blue

97001

97002

97003

97004

Right Answer :
White

Right Option Id : 97003

Question 81

The binding energy per nucleon is maximum for the nucleus

Answer :

(A) Fe⁵⁶

(B) He⁴

(C) Pb²⁰⁸

(D) Mo¹⁰¹

Question Id : 96

Option Id

96001

96002

96003

96004

Right Answer :
Fe⁵⁶

Right Option Id : 96001

Question 82

The electron in a hydrogen atom with a radius equal to first Bohr radius has a velocity equal to

Answer :

(A) $\frac{c}{5}$

(B) $\frac{c}{10}$

(C) $\frac{c}{137}$

(D) $\frac{c}{125}$

Question Id : 91

Option Id

91001

91002

91003

91004

Right Answer :
 $\frac{c}{137}$

Right Option Id : 91003

Question 83

Bohr radius for Hydrogen is 0.53 Å.

The ground state Bohr radius for He⁺ ion will be

Answer :

(A) 1.06Å

(B) 0.53Å

(C) 0.265Å

(D) 0.134Å

Question Id : 98

Option Id

98001

98002

98003

98004

Right Answer :
0.265Å

Right Option Id : 98003

Question 84

The half-life of radium is 1600 years. After how much time will 1 gm radium reduce to 125 mg ?

Answer :

(A) 1800 years

(B) 1600 years

(C) 3200 years

(D) 4800 years

Question Id : 99

Option Id

99001

99002

99003

99004

Right Answer :
4800 years

Right Option Id : 99004

Question 85

The gyromagnetic ratio for the electron spin is γ times the corresponding ratio for the electron orbital momentum, where γ is

Answer :
(A) 1/2
(B) 1/3
(C) 2
(D) 3

Right Answer :
2

Question Id : 100

Option Id

100001

100002

100003

100004

Right Option Id : 100003

Question 86

Uhlenbeck and Goudsmit introduced the concept of

Answer :
(A) Electron spin
(B) Electron charge
(C) Proton spin
(D) Neutron spin

Right Answer :
Electron spin

Question Id : 95

Option Id

95001

95002

95003

95004

Right Option Id : 95001

Question 87

The energy of a particle in an infinite potential box is

Answer :
(A) proportional to length of box
(B) inversely proportional to Square of length of box
(C) inversely proportional to length of box
(D) none of these

Right Answer :
inversely proportional to Square of length of box

Question Id : 90

Option Id

90001

90002

90003

90004

Right Option Id : 90002

Question 88

The concept of matter wave was suggested by_____

Answer :
(A) Heisenberg
(B) de Broglie
(C) Schrodinger
(D) Laplace

Right Answer :
de Broglie

Question Id : 77

Option Id

77001

77002

77003

77004

Right Option Id : 77002

Question 89

de - Broglie wavelength of an electron which has been accelerated from rest through a potential difference of 100 V is

Answer :
(A) 12.27Å
(B) 1.227Å
(C) 15Å
(D) 1.5Å

Question Id : 88

Option Id

88001

88002

88003

88004

Right Answer :1.227Å

Right Option Id : 88002

Question 90

Which of the following can act as both a particle and as a wave?

Answer :

(A) photon

(B) electro

(C) neutron

(D) all of these

Right Answer :all of these

Question Id : 87

Option Id

87001

87002

87003

87004

Question 91

An n-type semiconductor is -----

Answer :

(A) Negatively Charged

(B) Positively charged

(C) Neutral

(D) None of these

Right Answer :Neutral

Question Id : 89

Option Id

89001

89002

89003

89004

Question 92

The band gap of Si at 300 K is-----

Answer :

(A) 0.53 eV

(B) 0.80 eV

(C) 1.12 eV

(D) 1.46 eV

Right Answer :1.12 eV

Question Id : 86

Option Id

86001

86002

86003

86004

Question 93

The α (Current gain in common base configuration) and β (Current gain in common emitter configuration) of a transistor is related as -----

Answer :

(A) $\beta = \frac{\alpha}{1-\alpha}$

(B) $\beta = \frac{\alpha}{1+\alpha}$

(C) $\beta = \frac{1+\alpha}{\alpha}$

(D) $\beta = 1 - \alpha$

Right Answer : $\beta = \frac{\alpha}{1-\alpha}$

Question Id : 85

Option Id

85001

85002

85003

85004

Question 94

Question Id : 84

If α current gain of a transistor is 0.98.
What is the value of β current gain of the transistor.....

Answer :

- (A) 0.49
- (B) 4.9
- (C) 5
- (D) 49

Option Id

- ☐ 84001
- ☐ 84002
- ☐ 84003
- ☐ 84004

Right Answer :
49

Right Option Id : 84004

Question 95
Which type of feedback is used in case of an oscillator circuit?
Answer :

- (A) Positive
- (B) Negative
- (C) Unity
- (D) None of these

Question Id : 76

Option Id

- ☐ 76001
- ☐ 76002
- ☐ 76003
- ☐ 76004

Right Answer :
Positive

Right Option Id : 76001

Question 96
Which of the following has the greatest mobility?
Answer :

- (A) Hole
- (B) Electron
- (C) Positive ion
- (D) Negative ion

Question Id : 83

Option Id

- ☐ 83001
- ☐ 83002
- ☐ 83003
- ☐ 83004

Right Answer :
Electron

Right Option Id : 83002

Question 97
The truth table for two input logic gate is given below

A	B	Output
0	0	1
0	1	1
1	0	1
1	1	0

Then the logic gate is –

Answer :

- (A) NAND
- (B) AND
- (C) OR
- (D) NOR

Question Id : 82

Option Id

- ☐ 82001
- ☐ 82002
- ☐ 82003
- ☐ 82004

Right Answer :
NAND

Right Option Id : 82001

Question 98
De Morgan's theorem states that –
Answer :

- (A) $\overline{A + B} = \overline{A} \cdot \overline{B}$
- (B) $A + B = \overline{\overline{A} \cdot \overline{B}}$

Question Id : 81

Option Id

- ☐ 81001
- ☐ 81002

(C)

(D) $A + B = \overline{A}.B$

81003

81004

Right Answer :
 $\overline{A + B} = \overline{A}. \overline{B}$

Right Option Id : 81001

Question 99

Troposphere is medium for -

Answer :

(A) Surface Wave

(B) Guided Wave

(C) Sky Wave

(D) Space Wave

Question Id : 80

Option Id

80001

80002

80003

80004

Right Answer :
Space Wave

Right Option Id : 80004

Question 100

Through which mode of propagation, the radio waves can be sent from one place to another-

Answer :

(A) Ground wave propagation

(B) Sky wave propagation

(C) Space Wave propagation

(D) All of the above

Question Id : 79

Option Id

79001

79002

79003

79004

Right Answer :
All of the above

Right Option Id : 79004

Art Of Teaching

Question 101

If a child fails to answer in class the teacher will

Answer :

(A) advice to study well

(B) punish

(C) scold

(D) understand the reason of his failure

Question Id : 120

Option Id

120001

120002

120003

120004

Right Answer :
understand the reason of his failure

Right Option Id : 120004

Question 102

To ensure participation of students we use

Answer :

(A) demonstration

(B) little man's lecture

(C) discussion

(D) illustration

Question Id : 121

Option Id

121001

121002

121003

121004

Right Answer :
discussion

Right Option Id : 121003

Question 103

One of them is not a principle of cooperative learning

Answer :

(A) positive dictation

(B) face to face interaction

(C) group accountability

Question Id : 125

Option Id

125001

125002

125003

(D) individual accountability Right Answer : positive dictation	125004 Right Option Id : 125001
Question 104 The use of verb for writing specific objections makes it Answer : (A) measurable (B) action oriented (C) specific (D) all the above Right Answer : all the above	Question Id : 123 Option Id 123001 123002 123003 123004 Right Option Id : 123004
Question 105 The process for establishing sequence for a task is Answer : (A) objective (B) procedure (C) strategy (D) none of the above Right Answer : objective	Question Id : 124 Option Id 124001 124002 124003 124004 Right Option Id : 124001
Question 106 Excursion method develops Answer : (A) Cooperative attitude (B) creative faculty (C) direct knowledge (D) all the above Right Answer : all the above	Question Id : 119 Option Id 119001 119002 119003 119004 Right Option Id : 119004
Question 107 All children have the potential to learn opened Answer : (A) John Deway (B) friedrich Herbart (C) froebel (D) Montessori Right Answer : froebel	Question Id : 117 Option Id 117001 117002 117003 117004 Right Option Id : 117003
Question 108 One of them is not the focal point of tripolar process of teaching Answer : (A) teaching methods (B) teacher (C) pupil (D) content Right Answer : teaching methods	Question Id : 126 Option Id 126001 126002 126003 126004 Right Option Id : 126001

Question 109

A plan prepared by a teacher to teach a lesson is called

Answer :

(A) unit plan

(B) lesson plan

(C) course plan

(D) master plan

Right Answer :
lesson plan

Question Id : 127

Option Id

127001

127002

127003

127004

Right Option Id : 127002

Question 110

Selly activity and play was the most important contribution of

Answer :

(A) Pestalozzi

(B) froebel

(C) Montessori

(D) Dewey

Right Answer :
froebel

Question Id : 128

Option Id

128001

128002

128003

128004

Right Option Id : 128002

Question 111

In early childhood, growth And thinking is, while in middle childhood, growth And thinking is

Answer :

(A) slows, logical; is steady, egocentric

(B) slows, somewhat egocentric; is steady, logical

(C) is steady, somewhat egocentric; slows, logical

(D) is steady, logical; slows, egocentric

Right Answer :
is steady, somewhat egocentric; slows, logical

Question Id : 129

Option Id

129001

129002

129003

129004

Right Option Id : 129003

Question 112

One of the main characteristics of pre-operational thought according to jean piaget is which refers to the tendency to focus on one aspect of a situation and neglect others.

Answer :

(A) transduction

(B) causation

(C) centration

(D) decentration

Right Answer :
centration

Question Id : 108

Option Id

108001

108002

108003

108004

Right Option Id : 108003

Question 113

What is the main goal of 'assessment for learning'?

Answer :

(A) to compare student performance to a standard or benchmark

(B) to identify students who can be categorised as 'slow learners'

(C) to evaluate student performance and assign grades

(D) to provide feedback to students that can be used to improve their learning

Right Answer :
to provide feedback to students that can be used to improve their learning

Question Id : 130

Option Id

130001

130002

130003

130004

Right Option Id : 130004

Question 114

Diagnostic evaluation ascertains

Answer :

- (A) Learning progress and failures during instructions.
- (B) Degree of achievements of instructions at the end.
- (C) Students performance at the beginning of instructions.
- (D) Causes and remedies of persistent learning problems during instructions.

Right Answer :

Causes and remedies of persistent learning problems during instructions.

Question Id : 122

- | | Option Id |
|-----------------------|-----------|
| ☐ | 122001 |
| ☐ | 122002 |
| ☐ | 122003 |
| ☐ | 122004 |

Right Option Id : 122004

Question 115

Which of the following statements about teaching aids are correct

Answer :

- (A) They help students learn better
- (B) They make teaching learning process interesting
- (C) They help in retaining concepts for longer duration
- (D) All of the above

Right Answer :

All of the above

Question Id : 118

- | | Option Id |
|-----------------------|-----------|
| ☐ | 118001 |
| ☐ | 118002 |
| ☐ | 118003 |
| ☐ | 118004 |

Right Option Id : 118004

Question 116

A library is a place where

Answer :

- (A) Many books are kept
- (B) Many toys are kept
- (C) many clothes are kept
- (D) None of the above

Right Answer :

Many books are kept

Question Id : 115

- | | Option Id |
|-----------------------|-----------|
| ☐ | 115001 |
| ☐ | 115002 |
| ☐ | 115003 |
| ☐ | 115004 |

Right Option Id : 115001

Question 117

Which one of the following is a type of book?

Answer :

- (A) General text book
- (B) Reference book
- (C) Both A and B
- (D) None of these

Right Answer :

Both A and B

Question Id : 116

- | | Option Id |
|-----------------------|-----------|
| ☐ | 116001 |
| ☐ | 116002 |
| ☐ | 116003 |
| ☐ | 116004 |

Right Option Id : 116003

Question 118

Which of the following is not a quality of teachers-

Answer :

- (A) Empathy
- (B) Communication
- (C) Creativity
- (D) Jealous

Right Answer :

Jealous

Question Id : 101

- | | Option Id |
|-----------------------|-----------|
| ☐ | 101001 |
| ☐ | 101002 |
| ☐ | 101003 |
| ☐ | 101004 |

Right Option Id : 101004

Question 119

Which of the following personal qualities of a teacher affect teaching?

Answer :

- (A) Sensitivity

Question Id : 102

- | | Option Id |
|-----------------------|-----------|
| ☐ | 102001 |

(B) Management capacity

(C) Social skills

(D) None of these

102002

102003

102004

Right Answer :
Sensitivity

Right Option Id : 102001

Question 120

Teacher's role at higher education

Answer :

(A) Promote self learning in students

(B) Provide information to students

(C) help students to solve their problem

(D) None of these

Question Id : 104

Option Id

104001

104002

104003

104004

Right Answer :
Promote self learning in students

Right Option Id : 104001

Question 121

Evaluation process is related to-

Answer :

(A) Whole learning process

(B) Examinatino

(C) Test

(D) Measurement

Question Id : 105

Option Id

105001

105002

105003

105004

Right Answer :
Whole learning process

Right Option Id : 105001

Question 122

Which of the following is not a tool of evaluation?

Answer :

(A) Rating scale

(B) Project report

(C) Check list

(D) Cumulative record

Question Id : 106

Option Id

106001

106002

106003

106004

Right Answer :
Project report

Right Option Id : 106002

Question 123

A portfolio is a tool for-

Answer :

(A) Collection of student's works over a period of time

(B) Collection of student's marks over a period of time

(C) Collection of student's grade over a period of time

(D) All of the above

Question Id : 107

Option Id

107001

107002

107003

107004

Right Answer :
Collection of student's works over a period of time

Right Option Id : 107001

Question 124

The Purpose of Sports is

Answer :

(A) Physical development

(B) Moral Development

(C) Both of the above

(D) None of the above

Question Id : 103

Option Id

103001

103002

103003

103004

Right Answer : Both of the above	Right Option Id : 103003										
Question 125 Psychological foundation plays its role in the devlopment of curriculum keeping in view- Answer : (A) Student's emotion (B) Student's nature (C) Student's happiness (D) student's needs Right Answer : student's needs	Question Id : 109 <table><thead><tr><th></th><th>Option Id</th></tr></thead><tbody><tr><td>☐</td><td>109001</td></tr><tr><td>☐</td><td>109002</td></tr><tr><td>☐</td><td>109003</td></tr><tr><td>☐</td><td>109004</td></tr></tbody></table> Right Option Id : 109004		Option Id	☐	109001	☐	109002	☐	109003	☐	109004
	Option Id										
☐	109001										
☐	109002										
☐	109003										
☐	109004										
Question 126 The Characteristic of the Indian society Answer : (A) conservative (B) unscientific (C) open (D) stratified Right Answer : stratified	Question Id : 110 <table><thead><tr><th></th><th>Option Id</th></tr></thead><tbody><tr><td>☐</td><td>110001</td></tr><tr><td>☐</td><td>110002</td></tr><tr><td>☐</td><td>110003</td></tr><tr><td>☐</td><td>110004</td></tr></tbody></table> Right Option Id : 110004		Option Id	☐	110001	☐	110002	☐	110003	☐	110004
	Option Id										
☐	110001										
☐	110002										
☐	110003										
☐	110004										
Question 127 which of the following is not the cause of getting ? Answer : (A) Mental conflict (B) Desire to remember (C) Defective methods of remembering (D) All the above Right Answer : Desire to remember	Question Id : 111 <table><thead><tr><th></th><th>Option Id</th></tr></thead><tbody><tr><td>☐</td><td>111001</td></tr><tr><td>☐</td><td>111002</td></tr><tr><td>☐</td><td>111003</td></tr><tr><td>☐</td><td>111004</td></tr></tbody></table> Right Option Id : 111002		Option Id	☐	111001	☐	111002	☐	111003	☐	111004
	Option Id										
☐	111001										
☐	111002										
☐	111003										
☐	111004										
Question 128 Which of the these factors does not affect the learning process - Answer : (A) Intelligence (B) Interest (C) Readiness (D) Goal setting Right Answer : Goal setting	Question Id : 112 <table><thead><tr><th></th><th>Option Id</th></tr></thead><tbody><tr><td>☐</td><td>112001</td></tr><tr><td>☐</td><td>112002</td></tr><tr><td>☐</td><td>112003</td></tr><tr><td>☐</td><td>112004</td></tr></tbody></table> Right Option Id : 112004		Option Id	☐	112001	☐	112002	☐	112003	☐	112004
	Option Id										
☐	112001										
☐	112002										
☐	112003										
☐	112004										
Question 129 Audio-visual aid facilitate- Answer : (A) Multi-sensory (B) Only visual (C) Only Audio (D) None of the above Right Answer : Multi-sensory	Question Id : 113 <table><thead><tr><th></th><th>Option Id</th></tr></thead><tbody><tr><td>☐</td><td>113001</td></tr><tr><td>☐</td><td>113002</td></tr><tr><td>☐</td><td>113003</td></tr><tr><td>☐</td><td>113004</td></tr></tbody></table> Right Option Id : 113001		Option Id	☐	113001	☐	113002	☐	113003	☐	113004
	Option Id										
☐	113001										
☐	113002										
☐	113003										
☐	113004										

Question 130

Dienes block is used in-

Answer :

(A) Addition

(B) Substraction

(C) Both of the above

(D) None of the above

Right Answer :
Both of the above

Question Id : 114

Option Id

114001

114002

114003

114004

Right Option Id : 114003

Other Skills

Question 131

Lala Lajpat Rai was also known as :

Answer :

(A) Sher-e-Bengal

(B) Sher-e-Maharastra

(C) Sher-e-Kashmir

(D) Sher-e-Punjab

Right Answer :
Sher-e-Punjab

Question Id : 149

Option Id

149001

149002

149003

149004

Right Option Id : 149004

Question 132

Which of the following Monsoons account for most of the rainfall in India?

Answer :

(A) North East Monsoon

(B) South West Monsoon

(C) South East Monsoon

(D) East Asia Monsoon

Right Answer :
South West Monsoon

Question Id : 148

Option Id

148001

148002

148003

148004

Right Option Id : 148002

Question 133

Which country has the largest number of internet users in the world?

Answer :

(A) China

(B) USA

(C) India

(D) Brazil

Right Answer :
China

Question Id : 147

Option Id

147001

147002

147003

147004

Right Option Id : 147001

Question 134

Under whose leadership in Bihar, All Party boycotted the Simon Commission?

Answer :

(A) Anugrah Narayan Sinha

(B) Ramvriksh Benipuri

(C) Phanishwar Nath Renu

(D) Rajendra Prasad

Right Answer :
Anugrah Narayan Sinha

Question Id : 146

Option Id

146001

146002

146003

146004

Right Option Id : 146001

Question 135

As per the recent notification of CERT-In, what is the time limit to report the cyber incidents after its detection?

Question Id : 145

Answer :

(A) 2 days

(B) 1 day

(C) 12 hours

(D) 6 hours

Option Id

145001

145002

145003

145004

Right Answer :
6 hours

Right Option Id : 145004

Question 136

Bronze is an alloy made by melting the following:

Answer :

(A) Zinc and tin

(B) Tin and copper

(C) Copper and zinc

(D) Aluminium and zinc

Question Id : 144

Option Id

144001

144002

144003

144004

Right Answer :
Tin and copper

Right Option Id : 144002

Question 137

Select the correct statements about elephants from the following:

A. A three-month-old baby elephant generally weighs about 100 kg.

B. An adult elephant can eat more than 200 kg of leaves and twigs in one day.

C. Elephants do not rest very much; they sleep for only two to four hours in a day.

D. Elephants like to play with mud and water.

Answer :

(A) C and D

(B) B and D

(C) A and B

(D) A and C

Question Id : 143

Option Id

143001

143002

143003

143004

Right Answer :
C and D

Right Option Id : 143001

Question 138

Select from the following the best period of the year for the people of Bihar to start a bee-keeping programme:

Answer :

(A) August to October

(B) October to December

(C) February to April

(D) April to June

Question Id : 142

Option Id

142001

142002

142003

142004

Right Answer :
October to December

Right Option Id : 142002

Question 139

Read the following statements and choose the correct option:

Assertion (A) On applying pressure, gas can be compressed easily.

Reason (R) When we apply pressure to a gas, the intermolecular space between gaseous particles decreases and it gets compressed.

Answer :

(A) (A) is true, but, (R) is false.

(B) (A) is false, but (R) is ture.

(C) Both (A) and (R) are true and (R) is the correct explanation of (A)

(D) Both (A) and (R) are true, but (R) is not the correct explanation of (A)

Question Id : 141

Option Id

141001

141002

141003

141004

Right Answer :
Both (A) and (R) are true and (R) is the correct explanation of (A)

Right Option Id : 141003

Question 140

Consider the following Statements A and B:
Statement A In Manali, houses are constructed with wood, slanting roofs and elevated on strong bamboo pollars.
Statement B Manali receives a lot of rain and snowfall.
Choose the correct Option :

Answer :

- (A) A is correct, but B is incorrect
- (B) A is incorrect, but B is correct
- (C) Both A and B are corect
- (D) Both A and B are incorrect

Option Id

- ☐ 131001
- ☐ 131002
- ☐ 131003
- ☐ 131004

Right Answer :

A is incorrect, but B is correct

Right Option Id : 131002

Question 141

To develop appreciation for mathematics among children, a teacher performs the following activities in the class. Choose the one which is not effective to achieve her objective.

Answer :

- (A) She establishes a mathematics corner in her class where students can perform various mathematical activities.
- (B) She always praises the student who achieves highest marks in the class in the term-end examination.
- (C) She shows to children the videos on Indian mathematicians and their contributions.
- (D) She gives mathematical puzzles and magic squares to be solved in the class.

Option Id

- ☐ 139001
- ☐ 139002
- ☐ 139003
- ☐ 139004

Right Answer :

She always praises the student who achieves highest marks in the class in the term-end examination.

Right Option Id : 139002

Question 142

Which of the following statements about nature of mathematics are most appropriate?
A. It helps the child to be creative.
B. It helps in nurturing the child's imagination.
C. It is based on deductive reasoning.
D. It is always convergent.
Choose the correct option:

Answer :

- (A) A and B
- (B) A, B and C
- (C) B and C
- (D) A and C

Option Id

- ☐ 138001
- ☐ 138002
- ☐ 138003
- ☐ 138004

Right Answer :

A, B and C

Right Option Id : 138002

Question 143

Who among the following has worked in the field of mathematical astronomy?

Answer :

- (A) Mahavira
- (B) Aryabhata
- (C) Bhaskara
- (D) Ramanujan

Option Id

- ☐ 137001
- ☐ 137002
- ☐ 137003
- ☐ 137004

Right Answer :

Aryabhata

Right Option Id : 137002

Question 144

A vegetable seller was selling spinach for ₹ 60 per kg. Sonu purchased 350 g of spinach for which the vegetable seller took ₹ 21 (₹ 6 + ₹ 6 + ₹ 6 + ₹ 3) from Sonu. Which of the following statements is/are true regarding the mathematical skills used by the vegetable seller?
Choose the correct option :

- A. This mathematical skill is vague.
- B. This skill is not beneficial for solving mathematical problems in class.
- C. Such skills are helpful in developing alternative methods of solving mathematical problems.

Answer :

- (A) Only C

Option Id

- ☐ 136001

Question Id : 136

(B) A and B
(C) Only A
(D) Only B

136002
136003
136004

Right Answer :
Only C

Right Option Id : 136001

Question 145
Which of the following statements is not correct?
Answer :
(A) Errors of the students should be overlooked as pointing errors will demotivate them.
(B) Errors of the students give information about their thought process.
(C) Errors in mathematics are part of learning.
(D) Errors in mathematics help teachers in planning their lessons.

Option Id
135001
135002
135003
135004

Right Answer :
Errors of the students should be overlooked as pointing errors will demotivate them.

Right Option Id : 135001

Question 146
Monday : April : : Friday : ?
Answer :
(A) July
(B) Saturday
(C) August
(D) Tuesday

Option Id
134001
134002
134003
134004

Right Answer :
August

Right Option Id : 134003

Question 147
Choose the word which is least like the other words in the group.
Answer :
(A) Kidney
(B) Heart
(C) Lung
(D) Ear

Option Id
133001
133002
133003
133004

Right Answer :
Heart

Right Option Id : 133002

Question 148
60,30,120,15,240?
Answer :
(A) 30
(B) 120
(C) 140
(D) 71/2

Option Id
132001
132002
132003
132004

Right Answer :
71/2

Right Option Id : 132004

Question 149
In a certain code, if BAD is written as YZW and SAID is written as HZRW, then LIFE will be written as:
Answer :
(A) ORUV
(B) OSUV
(C) OQVU
(D) ORVW

Option Id
140001
140002
140003
140004

Right Option Id : 140

Right Answer :
ORUV

Right Option Id : 140001

Question 150
Pointing towards Sita, Nikhil said, "I am the only son of her mother's son". How is Sita related to Nikhil?
Answer :
(A) Aunt
(B) Niece
(C) Mother
(D) Cousin

Right Answer :
Aunt

Question Id : 150

	Option Id
☐	150001
☐	150002
☐	150003
☐	150004

Right Option Id : 150001