Bihar STET

Previous Year Paper

PGT (Physics)

13 Sept, 2023 Shift 1

QUESTION PAPER
Uchcha Madhyamic Physics [SHIFT - 1]

Exam Date : 13/09/2023 | Time : 03:00 PM - 05:30 PM

Subject Name : Physics | Subject Code : 214

Subject Question

Question 1 | **Question Id : 1**

which of the following is the SI unit of electric flux?

Answer : | Option Id

(A) Weber | 1001

(B) Volt /meter | 1002

(C) Vm | 1003

(D) Nm | 1004

Right Answer : | **Right Option Id : 1003**

Vm

Question 2 | **Question Id : 55**

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 : | Option Id

(A) $\left(\frac{8k}{\pi^2}m\right)^{\frac{1}{2}}$ | 55001

(B) $\frac{2}{\pi}\left(\frac{k}{m}\right)^{\frac{1}{2}}$ | 55002

(C) $(2k/2)^{\frac{1}{2}}$ | 55003

(D) None of these | 55004

Right Answer : | **Right Option Id : 55001**

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

Question 3 | **Question Id : 54**

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 : | Option Id

(A) 4mg | 54001

(B) 5mg | 54002

(C) 6mg | 54003

(D) None of these | 54004

Right Answer : | **Right Option Id : 54003**

6mg

Question 4 | **Question Id : 53**

The mass of an inhomogeneous ring of radius R is M. At a point in its axis, at distance x from its centre,

Answer : | Option Id

(A) The gravitational potential is – GM/$(r\text{^}2 + x\text{^}2)^{\frac{1}{2}}$ | 53001

(B) the magnitude of gravitational field intensity is Gmx /$(r^2 + x^2)^{\frac{1}{2}}$ | 53002

(C) the gravitional potential is – GM/de | 53003

(D) None of these | 53004

Right Answer : | **Right Option Id : 53001**

The gravitational potential is – GM/$(r\text{^}2 + x\text{^}2)^{\frac{1}{2}}$

Question 5 **Question Id : 52**

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 : Option Id

(A) $M\sqrt{\frac{6}{(M+m)d}}$ 52001

(B) $\sqrt{\frac{6M}{d}}$ 52002

(C) $m\sqrt{\frac{6}{(M+m)d}}$ 52003

(D) None of these 52004

Right Answer : **Right Option Id : 52001**

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

Question 6 **Question Id : 51**

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 : Option Id

(A) $2\tau t/MR^2$ 51001

(B) $2\tau t/MR^2$ 51002

(C) $2\tau T/MR^2$ 51003

(D) None of these 51004

Right Answer : **Right Option Id : 51001**

$2\tau t/MR^2$

Question 7 **Question Id : 50**

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

Answer : Option Id

(A) $\vec{\vartheta}=\vec{r}\times\vec{w}$ 50001

(B) $\vec{w}=\vec{r}\times\vec{v}$ 50002

(C) $\vec{w}r=\vec{\vartheta}$ 50003

(D) None of these 50004

Right Answer : **Right Option Id : 50002**

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

Question 8 **Question Id : 49**

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 : Option Id

(A) $\begin{bmatrix}\dot{x}\\ \dot{y}\end{bmatrix}=\begin{bmatrix}\cos\theta & -r\sin\theta\\ \sin\theta & -r\cos\theta\end{bmatrix}\begin{bmatrix}r\\ \dot{q}\end{bmatrix}$ 49001

(B) $\begin{bmatrix}\dot{x}\\ \dot{y}\end{bmatrix}=\begin{bmatrix}\sin\theta & r\sin q\\ \cos\ \theta & -r\cos\theta\end{bmatrix}\begin{bmatrix}r\\ \dot{q}\end{bmatrix}$ 49002

(C) $\begin{bmatrix}\dot{x}\\ \dot{y}\end{bmatrix}=\begin{bmatrix}-r\sin q & cos\theta\\ r\,cos\theta & sin\theta\end{bmatrix}\begin{bmatrix}r\\ \dot{q}\end{bmatrix}$ 49003

(D) none of these 49004

Right Answer : **Right Option Id : 49001**

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

Question 9 **Question Id : 48**

Select the incorrect statement :

Answer : Option Id

(A) If the Lagrangian L is explicit function of time, the Hamiltonian is equal to total energy — 48001

(B) .The relationship between generalized momentum p is $q^{\circ} = \partial H/\partial p$ — 48002

(C) The rate of change of generalized momentum is $(-\partial H/\partial q$ — 48003

(D) Action is the time -integral of Lagrangian — 48004

Right Answer : **Right Option Id : 48001**

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

Question 10 **Question Id : 47**

Select the incorrect statement :

Answer : Option Id

(A) The speed of light in a vaccum has the same value in all the inertial frames — 47001

(B) Neither mass nor energy is conserved, but ,mass-energy is conserved — 47002

(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 — 47003

(D) If a cube moves in a direction normal to its one face, all the 12 sides of the cube get contracted — 47004

Right Answer : **Right Option Id : 47004**

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

Question 11 **Question Id : 46**

The modulus of elasticity is dimensionally equivalent to:

Answer : Option Id

(A) Strain — 46001

(B) Surface tension — 46002

(C) stress — 46003

(D) Poisson's ratio — 46004

Right Answer : **Right Option Id : 46003**

stress

Question 12 **Question Id : 45**

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 : Option Id

(A) -0.5 — 45001

(B) 0.5 — 45002

(C) -0.25 — 45003

(D) 0.25 — 45004

Right Answer : **Right Option Id : 45001**

-0.5

Question 13 **Question Id : 44**

The Young's modulus for a plastic body is:

Answer : Option Id

(A) less than 1 — 44001

(B) 0 — 44002

(C) 1 — 44003

(D) Infinity — 44004

Right Answer : **Right Option Id : 44002**

0

Question 14 **Question Id : 43**

A liquid has only:

Answer : Option Id

(A) Bulk modulus — 43001

(B) Youngs modulus 43002
(C) Shear modulus 43003
(D) All of the above 43004

Right Answer : **Right Option Id : 43001**
Bulk modulus

Question 15 **Question Id : 42**
What do we call the maximum velocity of a fluid in a tube for which the flow remains streamlined?
Answer : Option Id
(A) Lamellar velocity 42001
(B) critical velocity 42002
(C) Streamlined velocity 42003
(D) Hyper velocity 42004

Right Answer : **Right Option Id : 42002**
critical velocity

Question 16 **Question Id : 41**
Bernoulli's theorem deals with the principles of:
Answer : Option Id
(A) Energy 41001
(B) Force 41002
(C) Mass 41003
(D) Momentum 41004

Right Answer : **Right Option Id : 41001**
Energy

Question 17 **Question Id : 56**
When is a fluid called turbulent?
Answer : Option Id
(A) High viscosity of fluid 56001
(B) Reynolds number is greater than 2000 56002
(C) Reynolds number is less than 2000 56003
(D) The density of the fluid is low 56004

Right Answer : **Right Option Id : 56003**
Reynolds number is less than 2000

Question 18 **Question Id : 57**
An iron needle floats on the surface of water. This phenomenon is attributed to:
Answer : Option Id
(A) Upthrust of liquid 57001
(B) Surface tension 57002
(C) Gravitational force 57003
(D) Nuclear force 57004

Right Answer : **Right Option Id : 57002**
Surface tension

Question 19 **Question Id : 58**
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 : Option Id
(A) 4π mJ 58001
(B) 2π mJ 58002
(C) 0.4π mJ 58003

(D) π mJ

58004

Right Answer :

0.4π mJ

Right Option Id : 58003

Question 20

Question Id : 67

With rise in temperature, the liquid height in a capillary will:

Answer :

Option Id

(A) Increase — 67001

(B) Decrease — 67002

(C) Remain constant — 67003

(D) First decrease then increase — 67004

Right Answer :

Decrease

Right Option Id : 67002

Question 21

Question Id : 73

The Zeroth law of thermodynamics based on which parameter?

Answer :

Option Id

(A) Temperature — 73001

(B) Pressure — 73002

(C) Density — 73003

(D) Velocity — 73004

Right Answer :

Temperature

Right Option Id : 73001

Question 22

Question Id : 72

"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 :

Option Id

(A) Second law of thermodynamics — 72001

(B) Third law of thermodynamics — 72002

(C) First law of thermodynamics — 72003

(D) Zeroth law of thermodynamics — 72004

Right Answer :

First law of thermodynamics

Right Option Id : 72003

Question 23

Question Id : 71

Which of the following occurs without a change in the internal energy?

Answer :

Option Id

(A) Isochoric process — 71001

(B) Isobaric process — 71002

(C) Steady-state process — 71003

(D) Isothermal process — 71004

Right Answer :

Isobaric process

Right Option Id : 71002

Question 24

Question Id : 70

Which of the following follows the Carnot theorem?

Answer :

Option Id

(A) Heat engines — 70001

(B) Gas turbine engines — 70002

(C) Gas compressors — 70003

(D) All of the mentioned — 70004

Right Answer :

All of the mentioned

Right Option Id : 70004

Question 25 **Question Id : 69**

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

Answer : Option Id

(A) all gases 69001

(B) steam 69002

(C) water 69003

(D) ideal gas 69004

Right Answer : **Right Option Id : 69004**

ideal gas

Question 26 **Question Id : 68**

Which of the following is true according to Clausius statement?

Answer : Option Id

(A) it is possible to construct a device that can transfer heat from a cooler body to a hotter body without any effect 68001

(B) it is impossible to construct a device that can transfer heat from a cooler body to a hotter body without any effect 68002

(C) it is impossible to construct a device that can transfer heat from a hotter body to a cooler body without any effect 68003

(D) none of the mentioned 68004

Right Answer : **Right Option Id : 68002**

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

Question 27 **Question Id : 66**

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

Answer : Option Id

(A) triple point of water 66001

(B) boiling point of water 66002

(C) absolute zero 66003

(D) none of the mentioned 66004

Right Answer : **Right Option Id : 66003**

absolute zero

Question 28 **Question Id : 59**

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

Answer : Option Id

(A) First law of thermodynamics 59001

(B) Second law of thermodynamics 59002

(C) Third law of thermodynamics 59003

(D) Zeroth law of thermodynamics 59004

Right Answer : **Right Option Id : 59002**

Second law of thermodynamics

Question 29 **Question Id : 65**

Kelvin planks law of thermodynamics deals with:

Answer : Option Id

(A) Conservation of work 65001

(B) Conservation of heat 65002

(C) Conversion of heat into work 65003

(D) Conversion of work into heat 65004

Right Answer : **Right Option Id : 65003**

Conversion of heat into work

Question 30 **Question Id : 64**

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 : Option Id

(A) 200°C 64001

(B) 450°C 64002

(C) 300°C 64003

(D) 250°C 64004

Right Answer : **Right Option Id : 64004**

250°C

Question 31 **Question Id : 63**

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 : Option Id

(A) initial phase angle only 63001

(B) initial phase angle and amplitude 63002

(C) amplitude of individual only 63003

(D) neither amplitude nor initial phase angle 63004

Right Answer : **Right Option Id : 63001**

initial phase angle only

Question 32 **Question Id : 62**

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

Answer : Option Id

(A) vibrational motion 62001

(B) rotational motion 62002

(C) circular motion 62003

(D) translational motion 62004

Right Answer : **Right Option Id : 62004**

translational motion

Question 33 **Question Id : 61**

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

Answer : Option Id

(A) periodic motion 61001

(B) circular motion 61002

(C) translational motion 61003

(D) rotational motion 61004

Right Answer : **Right Option Id : 61001**

periodic motion

Question 34 **Question Id : 60**

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 : Option Id

(A) a transverse wave 60001

(B) a longitudinal wave 60002

(C) a stationary wave 60003

(D) a sound wave 60004

Right Answer : **Right Option Id : 60001**

a transverse wave

Question 35 **Question Id : 40**

Which is a mathematical equation for a progressive wave ?

Answer : Option Id

(A) $y = a \sin(kt - \omega x)$ 40001

(B) $y = a \sin(2\pi t - \lambda x)$ 40002

(C) $y = a \sin(\omega t - kx)$ 40003

(D) $y = a \sin(\lambda t - \phi)$ 40004

Right Answer : **Right Option Id : 40003**

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

Question 36 **Question Id : 39**

The distance between two consecutive nodes or antinodes is .....

Answer : Option Id

(A) λ 39001

(B) $\lambda/4$ 39002

(C) 2λ 39003

(D) $\lambda/2$ 39004

Right Answer : **Right Option Id : 39004**

$\lambda/2$

Question 37 **Question Id : 38**

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

Answer : Option Id

(A) Undamped free oscillations 38001

(B) Damped free oscillations 38002

(C) Forced oscillations 38003

(D) None of the above 38004

Right Answer : **Right Option Id : 38003**

Forced oscillations

Question 38 **Question Id : 37**

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

Answer : Option Id

(A) equal to 37001

(B) directly proportional to 37002

(C) inversely proportional to 37003

(D) independent of 37004

Right Answer : **Right Option Id : 37003**

inversely proportional to

Question 39 **Question Id : 17**

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

Answer : Option Id

(A) Change 17001

(B) Increase 17002

(C) Decrease 17003

(D) No change 17004

Right Answer : **Right Option Id : 17004**

No change

Question 40 **Question Id : 16**

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

Answer : Option Id

(A) Piezo electric Effect 16001

(B) Compton Effect 16002

(C) Doppler Effect — 16003
(D) Seebeck Effect — 16004

Right Answer : **Right Option Id : 16003**
Doppler Effect

Question 41 **Question Id : 15**

If vector field $B = x^2\hat{\imath} - xy\hat{\jmath} - kxz\hat{k}$ represents a magnetic field then what is the value of k?

Answer : Option Id
(A) 0 — 15001
(B) 1 — 15002
(C) 2 — 15003
(D) 3 — 15004

Right Answer : **Right Option Id : 15002**
1

Question 42 **Question Id : 14**
Capacitance (in F) of a spherical conductor of radius 1m is

Answer : Option Id
(A) 1.1×10^{-10} — 14001
(B) 9×10^{-9} — 14002
(C) 9×10^{-6} — 14003
(D) 9×10^{-3} — 14004

Right Answer : **Right Option Id : 14001**
1.1×10^{-10}

Question 43 **Question Id : 13**
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 : Option Id
(A) $\frac{2q}{3}$ — 13001
(B) $\frac{-2q}{3}$ — 13002
(C) $\frac{4q}{3}$ — 13003
(D) $\frac{-2q}{3}$ — 13004

Right Answer : **Right Option Id : 13002**
$\frac{-2q}{3}$

Question 44 **Question Id : 12**
Conservative nature of electric field means

Answer : Option Id
(A) Curl is zero — 12001
(B) Divergence is zero — 12002
(C) Gradient is zero — 12003
(D) None of them — 12004

Right Answer : **Right Option Id : 12001**
Curl is zero

Question 45 **Question Id : 11**

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

Answer : Option Id

(A) E= ϵ0D+P 11001

(B) P=ϵ0E+P 11002

(C) D= ϵ0E+P 11003

(D) P=E+D 11004

Right Answer : **Right Option Id : 11003**

D= ϵ0E+P

Question 46 **Question Id : 10**

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

Answer : Option Id

(A) Infinite 10001

(B) zero 10002

(C) same as normal component 10003

(D) none of them 10004

Right Answer : **Right Option Id : 10002**

zero

Question 47 **Question Id : 9**

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

Answer : Option Id

(A) move in the direction of B 9001

(B) move in the opposite direction of B 9002

(C) remain stationary 9003

(D) move perpendicular to B 9004

Right Answer : **Right Option Id : 9003**

remain stationary

Question 48 **Question Id : 8**

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

Answer : Option Id

(A) 5×10^{-5}T 8001

(B) 10×10^{-5} T 8002

(C) 5×10^{-4}T 8003

(D) 15×10^{-6} T 8004

Right Answer : **Right Option Id : 8001**

5×10^{-5}T

Question 49 **Question Id : 7**

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 : Option Id

(A) Faradey's law 7001

(B) Gauss' law 7002

(C) Ampere's law 7003

(D) Coulomb's law 7004

Right Answer : **Right Option Id : 7003**

Ampere's law

Question 50 **Question Id : 6**

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

Answer : Option Id

(A) High resistivity 6001

(B) Low hysteresis co-efficient — 6002
(C) Large B - H loop area — 6003
(D) High retentivity — 6004

Right Answer : **Right Option Id : 6002**
Low hysteresis co-efficient

Question 51 **Question Id : 5**
Which of the following is found using Lenz's law?
Answer : Option Id
(A) Induced emf — 5001
(B) Induced current — 5002
(C) The direction of induced emf — 5003
(D) The direction of alternating current — 5004

Right Answer : **Right Option Id : 5003**
The direction of induced emf

Question 52 **Question Id : 4**
The energy stored in a 70 mH inductor carrying a current of 5 A is
Answer : Option Id
(A) 0.875 J — 4001
(B) 0.556 J — 4002
(C) 0.755 J — 4003
(D) 0.655 J — 4004

Right Answer : **Right Option Id : 4001**
0.875 J

Question 53 **Question Id : 3**
The magnetic flux varies as per the relation $\varphi = 8\ t2 + 6t + 2$
(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 : Option Id
(A) 40 mV — 3001
(B) 36 mV — 3002
(C) 38 mV — 3003
(D) 42 mV — 3004

Right Answer : **Right Option Id : 3003**
38 mV

Question 54 **Question Id : 18**
A magnet is brought towards a coil first (i) speedily (ii) slowly. It can be concluded that the induced emf will be :
Answer : Option Id
(A) smaller in case (i) — 18001
(B) equal in both cases — 18002
(C) larger in case (i) — 18003
(D) None of them equal in both cases — 18004

Right Answer : **Right Option Id : 18003**
larger in case (i)

Question 55 **Question Id : 2**
If the refractive index of the water is approximately 1.3, then the speed of light in the water is
Answer : Option Id
(A) 1.3 c — 2001
(B) 0.77 c — 2002

(C) 1.1 c — 2003
(D) 1.5 c — 2004

Right Answer : 0.77 c

Right Option Id : 2002

Question 56

Question Id : 19

The Maxwell's first equation is obtained from

Answer :

	Option Id
(A) Coulomb's law	19001
(B) Gauss Law	19002
(C) Ampere's Law	19003
(D) Faraday's Law	19004

Right Answer : Gauss Law

Right Option Id : 19002

Question 57

Question Id : 21

The directions of the propagation vector k and the Poynting vector S for an electromagnetic wave are

Answer :

	Option Id
(A) parallel to each other	21001
(B) anti-parallel to each-other	21002
(C) normal to each other	21003
(D) any other angle	21004

Right Answer : parallel to each other

Right Option Id : 21001

Question 58

Question Id : 36

The reflection coefficient in the wave propagation when it is transmitted with the Brewster angle is

Answer :

	Option Id
(A) 0	36001
(B) 1	36002
(C) -1	36003
(D) infinite	36004

Right Answer : 0

Right Option Id : 36001

Question 59

Question Id : 35

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 :

	Option Id
(A) 1 x 10^8 m/s	35001
(B) 2 x $10^{8/}$ m/s	35002
(C) 1.5 x 10^8 m/s	35003
(D) 2.5 x 10^8 m/s	35004

Right Answer : 1.5 x 10^8 m/s

Right Option Id : 35003

Question 60

Question Id : 34

When light passes (with normal incidence) from air (n1=1) into glass (n2=1.5), the reflection coefficient is

Answer :

	Option Id
(A) R=0	34001
(B) R=0.04	34002
(C) R=0.96	34003
(D) R=1	34004

Right Answer : **Right Option Id : 34002**

R=0.04

Question 61 **Question Id : 33**

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

Answer : Option Id

(A) 200 ohm 33001

(B) 20 ohm 33002

(C) 50 ohm 33003

(D) None 33004

Right Answer : **Right Option Id : 33002**

20 ohm

Question 62 **Question Id : 32**

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

Answer : Option Id

(A) 2.15 sec 32001

(B) 4.50 sec 32002

(C) 1.15 sec 32003

(D) 0.15 sec 32004

Right Answer : **Right Option Id : 32003**

1.15 sec

Question 63 **Question Id : 31**

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 send 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 : Option Id

(A) I_1=-2.27A , I_2=2.865 A 31001

(B) I_1= 2.865 A I_2 =2.27A 31002

(C) I_1=6A , I_2=10 A 31003

(D) None of these. 31004

Right Answer : **Right Option Id : 31001**

I_1=-2.27A , I_2=2.865 A

Question 64 **Question Id : 30**

What resistance Must be connected in series with ar inductor of 5 millihenry so that the circuit has a time constant of 2x10^{-3} sec ?

Answer : Option Id

(A) 2.5 ohm 30001

(B) 4 ohm 30002

(C) 7.5 ohm 30003

(D) None 30004

Right Answer : **Right Option Id : 30001**

2.5 ohm

Question 65 **Question Id : 29**

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 Ø, where Ø is the phase angle between current and voltage. choose the correct option (takeπ=3)

Answer : Option Id

(A) I=10 A and tanØ = 3/4 — 29001

(B) I = 10 A and tan Ø = 9/4 — 29002

(C) I = 10 A and tan Ø = 4/3 — 29003

(D) None of them. — 29004

Right Answer : **Right Option Id : 29003**

I = 10 A and tan Ø = 4/3

Question 66 **Question Id : 28**

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

Answer : Option Id

(A) 311 sin 1000 л t — 28001

(B) 311 sin 10 Л t — 28002

(C) 311 sin 100 Л t — 28003

(D) None of these — 28004

Right Answer : **Right Option Id : 28003**

311 sin 100 Л t

Question 67 **Question Id : 27**

choose the correct option.

Answer : Option Id

(A) capacitor Blocks dc and allow ac. — 27001

(B) capacitor offter& infinite resistance to dc. — 27002

(C) Both (a) and (b) are corect. — 27003

(D) All are incorrect — 27004

Right Answer : **Right Option Id : 27003**

Both (a) and (b) are corect.

Question 68 **Question Id : 26**

what is the dimensional formula of √LC ?

Answer : Option Id

(A) $[M^0 L^0 T^1]$ — 26001

(B) $[M^0 L^0 T^{-1}]$ — 26002

(C) $[M^0 L^2 T^1]$ — 26003

(D) None of them — 26004

Right Answer : **Right Option Id : 26001**

$[M^0 L^0 T^1]$

Question 69 **Question Id : 25**

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 : Option Id

(A) 10 V — 25001

(B) 144 V — 25002

(C) 1.0 V — 25003

(D) None — 25004

Right Answer : **Right Option Id : 25002**

144 V

Question 70 **Question Id : 24**

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

Answer : Option Id

(A) 500 J 24001
(B) 550 J 24002
(C) 50 J 24003
(D) 5.0 J 24004

Right Answer : **Right Option Id : 24003**
50 J

Question 71 **Question Id : 23**

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

Answer : Option Id

(A) Sine function 23001
(B) Delta function 23002
(C) Gaussian function 23003
(D) Airy pattern 23004

Right Answer : **Right Option Id : 23004**
Airy pattern

Question 72 **Question Id : 22**

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

Answer : Option Id

(A) 16:25 22001
(B) 4:5 22002
(C) 3:5 22003
(D) 5:4 22004

Right Answer : **Right Option Id : 22002**
4:5

Question 73 **Question Id : 74**

Interference and diffraction of light supports in

Answer : Option Id

(A) Wave nature 74001
(B) quantum nature 74002
(C) transverse nature 74003
(D) electromagnetic nature 74004

Right Answer : **Right Option Id : 74001**
Wave nature

Question 74 **Question Id : 20**

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

Answer : Option Id

(A) equal thickness 20001
(B) equal inclination 20002
(C) equal chromatic order 20003
(D) none of these 20004

Right Answer : **Right Option Id : 20002**
equal inclination

Question 75 **Question Id : 75**

The brilliant colors in thin films of soap are due to

Answer : Option Id

(A) dispersion 75001

(B) diffraction 75002

(C) scattering 75003

(D) interference 75004

Right Answer : **Right Option Id : 75004**

interference

Question 76 **Question Id : 78**

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 : Option Id

(A) 180° 78001

(B) 0° 78002

(C) 90° 78003

(D) equal to angle of incidence 78004

Right Answer : **Right Option Id : 78003**

90°

Question 77 **Question Id : 92**

Huygens' wave theory of light cannot explain

Answer : Option Id

(A) Diffraction phenomena 92001

(B) Interference phenomena 92002

(C) Photoelectric effect 92003

(D) Polarization of light 92004

Right Answer : **Right Option Id : 92003**

Photoelectric effect

Question 78 **Question Id : 93**

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

Answer : Option Id

(A) Double 93001

(B) Half 93002

(C) Four Times 93003

(D) One-Fourth 93004

Right Answer : **Right Option Id : 93003**

Four Times

Question 79 **Question Id : 94**

The laws of reflection hold good for

Answer : Option Id

(A) plane mirror only 94001

(B) concave mirror only 94002

(C) convex mirror only 94003

(D) all mirrors irrespective of their shape 94004

Right Answer : **Right Option Id : 94004**

all mirrors irrespective of their shape

Question 80 **Question Id : 97**

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

Answer : Option Id

(A) Red 97001
(B) Coloured 97002
(C) White 97003
(D) Blue 97004

Right Answer : White

Right Option Id : 97003

Question 81

Question Id : 96

The binding energy per nucleon is maximum for the nucleus

Answer : Option Id

(A) Fe^{56} 96001
(B) He^{4} 96002
(C) Pb^{208} 96003
(D) Mo^{101} 96004

Right Answer : Fe^{56}

Right Option Id : 96001

Question 82

Question Id : 91

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

Answer : Option Id

(A) $\frac{c}{5}$ 91001
(B) $\frac{c}{10}$ 91002
(C) $\frac{c}{137}$ 91003
(D) $\frac{c}{125}$ 91004

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

Right Option Id : 91003

Question 83

Question Id : 98

Bohr radius for Hydrogen is 0.53 Å.
The ground state Bohr radius for He^{+} ion will be

Answer : Option Id

(A) 1.06Å 98001
(B) 0.53Å 98002
(C) 0.265Å 98003
(D) 0.134Å 98004

Right Answer : 0.265Å

Right Option Id : 98003

Question 84

Question Id : 99

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

Answer : Option Id

(A) 1800 years 99001
(B) 1600 years 99002
(C) 3200 years 99003
(D) 4800 years 99004

Right Answer :
4800 years

Right Option Id : 99004

Question 85

Question Id : 100

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

Answer :

Option Id

(A) 1/2 — 100001
(B) 1/3 — 100002
(C) 2 — 100003
(D) 3 — 100004

Right Answer :
2

Right Option Id : 100003

Question 86

Question Id : 95

Uhlenbeck and Goudsmit introduced the concept of

Answer :

Option Id

(A) Electron spin — 95001
(B) Electron charge — 95002
(C) Proton spin — 95003
(D) Neutron spin — 95004

Right Answer :
Electron spin

Right Option Id : 95001

Question 87

Question Id : 90

The energy of a particle in an infinite potential box is

Answer :

Option Id

(A) proportional to length of box — 90001
(B) inversely proportional to Square of length of box — 90002
(C) inversely proportional to length of box — 90003
(D) none of these — 90004

Right Answer :
inversely proportional to Square of length of box

Right Option Id : 90002

Question 88

Question Id : 77

The concept of matter wave was suggested by_____

Answer :

Option Id

(A) Heisenberg — 77001
(B) de Broglie — 77002
(C) Schrodinger — 77003
(D) Laplace — 77004

Right Answer :
de Broglie

Right Option Id : 77002

Question 89

Question Id : 88

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

Answer :

Option Id

(A) 12.27Å — 88001
(B) 1.227Å — 88002
(C) 15Å — 88003
(D) 1.5Å — 88004

Right Answer : **Right Option Id : 88002**

1.227Å

Question 90 **Question Id : 87**

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

Answer : Option Id

(A) photon 87001

(B) electro 87002

(C) neutron 87003

(D) all of these 87004

Right Answer : **Right Option Id : 87004**

all of these

Question 91 **Question Id : 89**

An n-type semiconductor is -----

Answer : Option Id

(A) Negatively Charged 89001

(B) Positively charged 89002

(C) Neutral 89003

(D) None of these 89004

Right Answer : **Right Option Id : 89003**

Neutral

Question 92 **Question Id : 86**

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

Answer : Option Id

(A) 0.53 eV 86001

(B) 0.80 eV 86002

(C) 1.12 eV 86003

(D) 1.46 eV 86004

Right Answer : **Right Option Id : 86003**

1.12 eV

Question 93 **Question Id : 85**

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

Answer : Option Id

(A) $\beta = \frac{\alpha}{1-\alpha}$ 85001

(B) $\beta = \frac{\alpha}{1+\alpha}$ 85002

(C) $\beta = \frac{1+\alpha}{\alpha}$ 85003

(D) $\beta = 1 - \alpha$ 85004

Right Answer : **Right Option Id : 85001**

$\beta = \frac{\alpha}{1-\alpha}$

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 :

Option Id

(A) 0.49 — 84001
(B) 4.9 — 84002
(C) 5 — 84003
(D) 49 — 84004

Right Answer :
49

Right Option Id : 84004

Question 95

Question Id : 76

Which type of feedback is used in case of an oscillator circuit?

Answer :

Option Id

(A) Positive — 76001
(B) Negative — 76002
(C) Unity — 76003
(D) None of these — 76004

Right Answer :
Positive

Right Option Id : 76001

Question 96

Question Id : 83

Which of the following has the greatest mobility?

Answer :

Option Id

(A) Hole — 83001
(B) Electron — 83002
(C) Positive ion — 83003
(D) Negative ion — 83004

Right Answer :
Electron

Right Option Id : 83002

Question 97

Question Id : 82

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 :

Option Id

(A) NAND — 82001
(B) AND — 82002
(C) OR — 82003
(D) NOR — 82004

Right Answer :
NAND

Right Option Id : 82001

Question 98

Question Id : 81

De Morgan's theorem states that –

Answer :

Option Id

(A) $\overline{A+B} = \overline{A}.\overline{B}$ — 81001
(B) $A+B = \overline{A}.\overline{B}$ — 81002

(C) $\overline{A+B} = \mathrm{A}.\,\bar{B}$ — 81003

(D) $A+B = \bar{A}.B$ — 81004

Right Answer : **Right Option Id : 81001**

$\overline{A+B} = \bar{A}.\bar{B}$

Question 99 **Question Id : 80**

Troposphere is medium for -

Answer : Option Id

(A) Surface Wave — 80001

(B) Guided Wave — 80002

(C) Sky Wave — 80003

(D) Space Wave — 80004

Right Answer : **Right Option Id : 80004**

Space Wave

Question 100 **Question Id : 79**

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

Answer : Option Id

(A) Ground wave propagation — 79001

(B) Sky wave propagation — 79002

(C) Space Wave propagation — 79003

(D) All of the above — 79004

Right Answer : **Right Option Id : 79004**

All of the above

Art Of Teaching

Question 101 **Question Id : 120**

If a child fails to answere in class the teacher will

Answer : Option Id

(A) advice to study well — 120001

(B) punish — 120002

(C) scold — 120003

(D) understand the reason of his failure — 120004

Right Answer : **Right Option Id : 120004**

understand the reason of his failure

Question 102 **Question Id : 121**

To ensure participation of students we use

Answer : Option Id

(A) demonstration — 121001

(B) little man's lecture — 121002

(C) discussion — 121003

(D) illustration — 121004

Right Answer : **Right Option Id : 121003**

discussion

Question 103 **Question Id : 125**

One of them is not a principle of coorperative learning

Answer : Option Id

(A) positive dictation — 125001

(B) face to face interation — 125002

(C) group accountalility — 125003

(D) individual accountalility — 125004

Right Answer : positive dictation

Right Option Id : 125001

Question 104

Question Id : 123

The use of verb for writing specific objections makes it

Answer :

Option Id

(A) measurable — 123001

(B) action oriented — 123002

(C) specific — 123003

(D) all the above — 123004

Right Answer : all the above

Right Option Id : 123004

Question 105

Question Id : 124

The process for establishing sequence for a task is

Answer :

Option Id

(A) objective — 124001

(B) procedure — 124002

(C) strategy — 124003

(D) none of the above — 124004

Right Answer : objective

Right Option Id : 124001

Question 106

Question Id : 119

Excursion method develops

Answer :

Option Id

(A) Cooperative attitude — 119001

(B) creative faculty — 119002

(C) direct knowledge — 119003

(D) all the above — 119004

Right Answer : all the above

Right Option Id : 119004

Question 107

Question Id : 117

All children have the potential to learn opened

Answer :

Option Id

(A) John Deway — 117001

(B) friedrich Herbart — 117002

(C) froebel — 117003

(D) Montessori — 117004

Right Answer : froebel

Right Option Id : 117003

Question 108

Question Id : 126

One of them is not the focal point of tripolar process of teaching

Answer :

Option Id

(A) teaching methods — 126001

(B) teacher — 126002

(C) pupil — 126003

(D) content — 126004

Right Answer : teaching methods

Right Option Id : 126001

Question 109 **Question Id : 127**

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

Answer : Option Id

(A) unit plan 127001

(B) lesson plan 127002

(C) course plan 127003

(D) master plan 127004

Right Answer : **Right Option Id : 127002**

lesson plan

Question 110 **Question Id : 128**

Selly activity and play was the most important contribution of

Answer : Option Id

(A) Pestalozzi 128001

(B) froebel 128002

(C) Montessori 128003

(D) Dewey 128004

Right Answer : **Right Option Id : 128002**

froebel

Question 111 **Question Id : 129**

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

Answer : Option Id

(A) slows, logical; is steady, egocentric 129001

(B) slows, somewhat egocentric; is steady, logical 129002

(C) is steady, somewhat egocentric; slows, logical 129003

(D) is steady, logical; slows, egocentric 129004

Right Answer : **Right Option Id : 129003**

is steady, somewhat egocentric; slows, logical

Question 112 **Question Id : 108**

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 : Option Id

(A) transduction 108001

(B) causation 108002

(C) centration 108003

(D) decentration 108004

Right Answer : **Right Option Id : 108003**

centration

Question 113 **Question Id : 130**

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

Answer : Option Id

(A) to compare student performance to a standard or benchmark 130001

(B) to identify students who can be categorised as 'slow learners' 130002

(C) to evaluate student performance and assign grades 130003

(D) to provide feedback to students that can be used to improve their learning 130004

Right Answer : **Right Option Id : 130004**

to provide feedback to students that can be used to improve their learning

Question 114 **Question Id : 122**

Diagnostic evaluation ascertains

Answer : Option Id

(A) Learning progress and failures during instructions. 122001

(B) Degree of achievements of instructions at the end. 122002

(C) Students performance at the beginning of instructions. 122003

(D) Causes and remedies of persistent learning problems during instructions. 122004

Right Answer : **Right Option Id : 122004**

Causes and remedies of persistent learning problems during instructions.

Question 115 **Question Id : 118**

Which of the following statements about teaching aids are correct

Answer : Option Id

(A) They help students learn better 118001

(B) They make teaching learning process interesting 118002

(C) They help in retaining concepts for longer duration 118003

(D) All of the above 118004

Right Answer : **Right Option Id : 118004**

All of the above

Question 116 **Question Id : 115**

A library is a place where

Answer : Option Id

(A) Many books are kept 115001

(B) Many toys are kept 115002

(C) many clothes are kept 115003

(D) None of the above 115004

Right Answer : **Right Option Id : 115001**

Many books are kept

Question 117 **Question Id : 116**

Which one of the following is a type of book?

Answer : Option Id

(A) General text book 116001

(B) Reference book 116002

(C) Both A and B 116003

(D) None of these 116004

Right Answer : **Right Option Id : 116003**

Both A and B

Question 118 **Question Id : 101**

Which of the following is not a quality of teachers-

Answer : Option Id

(A) Empathy 101001

(B) Communication 101002

(C) Creativity 101003

(D) Jealous 101004

Right Answer : **Right Option Id : 101004**

Jealous

Question 119 **Question Id : 102**

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

Answer : Option Id

(A) Sensitivity 102001

(B) Management capacity 102002
(C) Social skills 102003
(D) None of these 102004

Right Answer : **Right Option Id : 102001**
Sensitivity

Question 120 **Question Id : 104**
Teacher's role at higher education
Answer : Option Id
(A) Promote self learning in students 104001
(B) Provide information to students 104002
(C) help students to solve their problem 104003
(D) None of these 104004

Right Answer : **Right Option Id : 104001**
Promote self learning in students

Question 121 **Question Id : 105**
Evaluation process is related to-
Answer : Option Id
(A) Whole learning process 105001
(B) Examinatino 105002
(C) Test 105003
(D) Measurement 105004

Right Answer : **Right Option Id : 105001**
Whole learning process

Question 122 **Question Id : 106**
Which of the following is not a tool of evaluation?
Answer : Option Id
(A) Rating scale 106001
(B) Project report 106002
(C) Check list 106003
(D) Cumulative record 106004

Right Answer : **Right Option Id : 106002**
Project report

Question 123 **Question Id : 107**
A portfolio is a tool for-
Answer : Option Id
(A) Collection of student's works over a period of time 107001
(B) Collection of student's marks over a period of time 107002
(C) Collection of student's grade over a period of time 107003
(D) All of the above 107004

Right Answer : **Right Option Id : 107001**
Collection of student's works over a period of time

Question 124 **Question Id : 103**
The Purpose of Sports is
Answer : Option Id
(A) Physical development 103001
(B) Moral Development 103002
(C) Both of the above 103003
(D) None of the above 103004

Right Answer : **Right Option Id : 103003**

Both of the above

Question 125 **Question Id : 109**

Psychological foundation plays its role in the devlopment of curriculum keeping in view-

Answer : Option Id

(A) Student's emotion 109001

(B) Student's nature 109002

(C) Student's happiness 109003

(D) student's needs 109004

Right Answer : **Right Option Id : 109004**

student's needs

Question 126 **Question Id : 110**

The Characteristic of the Indian society

Answer : Option Id

(A) conservative 110001

(B) unscientific 110002

(C) open 110003

(D) stratified 110004

Right Answer : **Right Option Id : 110004**

stratified

Question 127 **Question Id : 111**

which of the following is not the cause of getting ?

Answer : Option Id

(A) Mental conflict 111001

(B) Desire to remember 111002

(C) Defective methods of remembering 111003

(D) All the above 111004

Right Answer : **Right Option Id : 111002**

Desire to remember

Question 128 **Question Id : 112**

Which of the these factors does not affect the learning process -

Answer : Option Id

(A) Intelligence 112001

(B) Interest 112002

(C) Readiness 112003

(D) Goal setting 112004

Right Answer : **Right Option Id : 112004**

Goal setting

Question 129 **Question Id : 113**

Audio-visual aid facilitate-

Answer : Option Id

(A) Multi-sensory 113001

(B) Only visual 113002

(C) Only Audio 113003

(D) None of the above 113004

Right Answer : **Right Option Id : 113001**

Multi-sensory

Question 130 **Question Id : 114**

Dienes block is used in-

Answer : Option Id

(A) Addition 114001

(B) Substraction 114002

(C) Both of the above 114003

(D) None of the above 114004

Right Answer : **Right Option Id : 114003**

Both of the above

Other Skills

Question 131 **Question Id : 149**

Lala Lajpat Rai was also known as :

Answer : Option Id

(A) Sher-e-Bengal 149001

(B) Sher-e-Maharastra 149002

(C) Sher-e-Kashmir 149003

(D) Sher-e-Punjab 149004

Right Answer : **Right Option Id : 149004**

Sher-e-Punjab

Question 132 **Question Id : 148**

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

Answer : Option Id

(A) North East Monsoon 148001

(B) South West Monsoon 148002

(C) South East Monsoon 148003

(D) East Asia Monsoon 148004

Right Answer : **Right Option Id : 148002**

South West Monsoon

Question 133 **Question Id : 147**

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

Answer : Option Id

(A) China 147001

(B) USA 147002

(C) India 147003

(D) Brazil 147004

Right Answer : **Right Option Id : 147001**

China

Question 134 **Question Id : 146**

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

Answer : Option Id

(A) Anugrah Narayan Sinha 146001

(B) Ramvriksh Benipuri 146002

(C) Phanishwar Nath Renu 146003

(D) Rajendra Prasad 146004

Right Answer : **Right Option Id : 146001**

Anugrah Narayan Sinha

Question 135 **Question Id : 145**

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

Answer :

Option Id

(A) 2 days — 145001

(B) 1 day — 145002

(C) 12 hours — 145003

(D) 6 hours — 145004

Right Answer : 6 hours

Right Option Id : 145004

Question 136

Question Id : 144

Bronze is an alloy made by melting the following:

Answer :

Option Id

(A) Zinc and tin — 144001

(B) Tin and copper — 144002

(C) Copper and zinc — 144003

(D) Aluminium and zinc — 144004

Right Answer : Tin and copper

Right Option Id : 144002

Question 137

Question Id : 143

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 :

Option Id

(A) C and D — 143001

(B) B and D — 143002

(C) A and B — 143003

(D) A and C — 143004

Right Answer : C and D

Right Option Id : 143001

Question 138

Question Id : 142

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

Answer :

Option Id

(A) August to October — 142001

(B) October to December — 142002

(C) February to April — 142003

(D) April to June — 142004

Right Answer : October to December

Right Option Id : 142002

Question 139

Question Id : 141

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 :

Option Id

(A) (A) is true, but, (R) is false. — 141001

(B) (A) is false, but (R) is ture. — 141002

(C) Both (A) and (R) are true and (R) is the correct explanation of (A) — 141003

(D) Both (A) and (R) are true, but (R) is not the correct explanation of (A) — 141004

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

Right Option Id : 141003

Question 140 **Question Id : 131**

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 : Option Id

(A) A is correct, but B is incorrect 131001
(B) A is incorrect, but B is correct 131002
(C) Both A and B are corect 131003
(D) Both A and B are incorrect 131004

Right Answer : **Right Option Id : 131002**

A is incorrect, but B is correct

Question 141 **Question Id : 139**

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 : Option Id

(A) She establishes a mathematics corner in her class where students can perform various mathematical activities. 139001
(B) She always praises the student who achieves highest marks in the class in the term-end examination. 139002
(C) She shows to children the videos on Indian mathematicians and their contributions. 139003
(D) She gives mathematical puzzles and magic squares to be solved in the class. 139004

Right Answer : **Right Option Id : 139002**

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

Question 142 **Question Id : 138**

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 : Option Id

(A) A and B 138001
(B) A, B and C 138002
(C) B and C 138003
(D) A and C 138004

Right Answer : **Right Option Id : 138002**

A, B and C

Question 143 **Question Id : 137**

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

Answer : Option Id

(A) Mahavira 137001
(B) Aryabhata 137002
(C) Bhaskara 137003
(D) Ramanujan 137004

Right Answer : **Right Option Id : 137002**

Aryabhata

Question 144 **Question Id : 136**

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 : Option Id

(A) Only C 136001

(B) A and B — 136002
(C) Only A — 136003
(D) Only B — 136004

Right Answer : **Right Option Id : 136001**
Only C

Question 145 **Question Id : 135**
Which of the following statements is not correct?
Answer : Option Id
(A) Errors of the students should be overlooked as pointing errors will demotivate them. — 135001
(B) Errors of the students give information about their thought process. — 135002
(C) Errors in mathematics are part of learning. — 135003
(D) Errors in mathematics help teachers in planning their lessons. — 135004

Right Answer : **Right Option Id : 135001**
Errors of the students should be overlooked as pointing errors will demotivate them.

Question 146 **Question Id : 134**
Monday : April : : Friday : ?
Answer : Option Id
(A) July — 134001
(B) Saturday — 134002
(C) August — 134003
(D) Tuesday — 134004

Right Answer : **Right Option Id : 134003**
August

Question 147 **Question Id : 133**
Choose the word which is least like the other words in the group.
Answer : Option Id
(A) Kidney — 133001
(B) Heart — 133002
(C) Lung — 133003
(D) Ear — 133004

Right Answer : **Right Option Id : 133002**
Heart

Question 148 **Question Id : 132**
60,30,120,15,240?
Answer : Option Id
(A) 30 — 132001
(B) 120 — 132002
(C) 140 — 132003
(D) 71/2 — 132004

Right Answer : **Right Option Id : 132004**
71/2

Question 149 **Question Id : 140**
In a certain code, if BAD is written as YZW and SAID is written as HZRW, then LIFE will be written as:
Answer : Option Id
(A) ORUV — 140001
(B) OSUV — 140002
(C) OQVU — 140003
(D) ORVW — 140004

Right Answer :
ORUV

Right Option Id : 140001

Question 150

Question Id : 150

Pointing towards Sita, Nikhil said, "I am the only son of her mother's son". How is Sita related to Nikhil?

Answer :

Option Id

(A) Aunt — 150001

(B) Niece — 150002

(C) Mother — 150003

(D) Cousin — 150004

Right Answer :
Aunt

Right Option Id : 150001