Question Paper Name: Electrical and Electronics Engineering
Subject Name: Electrical and Electronics Engineering

Mathematics

Number of Questions: 50
Display Number Panel: Yes
Group All Questions: No

Question Number : 1 Question Id : 67809417624 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $A = \begin{pmatrix} 2 & -1 & 0 \\ 3 & 4 & 7 \end{pmatrix}$ and $B = \begin{pmatrix} 5 & 2 & -3 \\ 1 & 0 & -2 \end{pmatrix}$ then $2A+3B =$

Options :

1. $\begin{pmatrix} 19 & 4 & -9 \\ 9 & 8 & 8 \end{pmatrix}$

2. $\begin{pmatrix} -19 & -4 & 9 \\ 9 & 8 & -8 \end{pmatrix}$

3. $\begin{pmatrix} 18 & 4 & -9 \\ 9 & 8 & 8 \end{pmatrix}$

4. $\begin{pmatrix} 17 & 5 & -9 \\ 8 & 8 & 9 \end{pmatrix}$

Question Number : 2 Question Id : 67809417625 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $A = \begin{pmatrix} 2 & -3 & 0 \\ 1 & 4 & -1 \end{pmatrix}$ and $B = \begin{pmatrix} 6 & 1 \\ 3 & 0 \\ 5 & 2 \end{pmatrix}$ then $(AB)^T =$

Options :

1. $A^T B^T$

2. $B^T A^T$

3. $(BA)^T$

4. AB^T

Question Number : 3 Question Id : 67809417626 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If two rows or two columns of a determinant are identical then the value of the determinant is

Options :

1. 2

2. -1

3. 0

4. -2

Question Number : 4 Question Id : 67809417627 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\begin{vmatrix} 265 & 240 & 219 \\ 240 & 225 & 198 \\ 219 & 198 & 181 \end{vmatrix}$ is

Options :

1. -1

2. 0

3. 1

4. 2

Question Number : 5 Question Id : 67809417628 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The adjoint of the square matrix $A = \begin{pmatrix} 2 & 5 & 1 \\ 3 & 1 & 2 \\ 4 & 3 & 1 \end{pmatrix}$ is

Options :

1. $\begin{pmatrix} -5 & -2 & 9 \\ 5 & -2 & -1 \\ 5 & 14 & -13 \end{pmatrix}$

2. $\begin{pmatrix} 5 & 2 & 9 \\ 5 & -2 & -1 \\ 5 & 14 & -13 \end{pmatrix}$

3. $\begin{pmatrix} -5 & -2 & 9 \\ -5 & -2 & -1 \\ -5 & 14 & -13 \end{pmatrix}$

4. $\begin{pmatrix} -5 & -2 & -9 \\ 5 & 2 & 1 \\ 5 & 14 & -13 \end{pmatrix}$

Question Number : 6 Question Id : 67809417629 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Resolve into partial fractions: $\dfrac{5}{(2x-1)(3x-1)} =$

Options :

1. $\dfrac{8}{2x-1} + \dfrac{5}{3x-1}$

2. $\dfrac{10}{2x-1} - \dfrac{15}{3x-1}$

3. $\dfrac{11}{3x-1} + \dfrac{7}{2x-1}$

4. $\dfrac{1}{2x-1} + \dfrac{2}{3x-1}$

Question Number : 7 Question Id : 67809417630 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Resolve into partial fractions: $\dfrac{3x-1}{(x-1)(x-2)(x-3)} =$

Options :

1. $\dfrac{2}{x-1} + \dfrac{5}{x-2} - \dfrac{4}{x-3}$

2. $\dfrac{-1}{x-1} + \dfrac{5}{x-2} - \dfrac{4}{x-3}$

3. $\dfrac{1}{x-1} + \dfrac{5}{x-2} + \dfrac{4}{x-3}$

4. $\dfrac{1}{x-1} - \dfrac{5}{x-2} + \dfrac{4}{x-3}$

Question Number : 8 Question Id : 67809417631 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\tan A = \dfrac{1}{2}$ and $\tan B = \dfrac{1}{3}$ then $\tan(A - B) =$

Options :

1. $\dfrac{1}{7}$

2. $\dfrac{-1}{7}$

3. $\dfrac{1}{5}$

4. $\dfrac{1}{3}$

Question Number : 9 Question Id : 67809417632 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\cot 2A + \tan A =$

Options :

1. $\sin 2A$

2. $\cos 2A$

3. $\sec 2A$

4. $\operatorname{cosec} 2A$

Question Number : 10 Question Id : 67809417633 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\dfrac{1-\cos 2A+\sin 2A}{1+\cos 2A+\sin 2A} =$

Options :

1. $\sin A$

2. $\cos A$

3. $\tan A$

4. $\cot A$

Question Number : 11 Question Id : 67809417634 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\sin \dfrac{\pi}{5} \sin \dfrac{2\pi}{5} \sin \dfrac{3\pi}{5} \sin \dfrac{4\pi}{5} =$

Options :

1. $\dfrac{4}{15}$

2. $\dfrac{5}{16}$

3. $\dfrac{-5}{16}$

4. $\dfrac{7}{15}$

Question Number : 12 Question Id : 67809417635 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\cos 20^0 + \cos 100^0 + \cos 140^0 =$

Options :

1. 0

2. 3

3. 1

4. -3

Question Number : 13 Question Id : 67809417636 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\sum a(b^2 + c^2)\cos A$ is

Options :

1. $2abc$

2. $4abc$

3. $3abc$

4. $5abc$

Question Number : 14 Question Id : 67809417637 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $(a - b)^2\cos^2\left(\frac{C}{2}\right) + (a + b)^2\sin^2\left(\frac{C}{2}\right)$ is

Options :

1. C^3

2. C

3. C^5

4. C^2

Question Number : 15 Question Id : 67809417638 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $2\tan^{-1}\left(\frac{1}{3}\right) + \tan^{-1}\left(\frac{1}{7}\right)$ is

Options :

1. $\pi/4$

2. $\pi/2$

3. $\pi/6$

4. $\pi/3$

Question Number : 16 Question Id : 67809417639 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The general solution of $4\cos^2 x - 3 = 0$ is

Options :

1. $2n\pi \pm \dfrac{\pi}{6}$

2. $2n\pi \pm \dfrac{7\pi}{6}$

3. $3n\pi \pm \dfrac{5\pi}{6}$

4. $2n\pi \pm \dfrac{11\pi}{6}$

Question Number : 17 Question Id : 67809417640 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\tan^{-1}x + \tan^{-1}y + \tan^{-1}z = \dfrac{\pi}{2}$, then the value of $xy + yz + zx$ is

Options :

1. -1

2. 3

3. 5

4. 1

Question Number : 18 Question Id : 67809417641 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The modulus of a complex number $\sqrt{3} + i$ is

Options :

1. -2

2. 3

3. 2

4. 5

Question Number : 19 Question Id : 67809417642 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $x + \frac{1}{x} = 2\cos\theta$ then the value of $x^n + \frac{1}{x^n}$ is

Options :

1. $2\cos n\theta$

2. $-2\cos n\theta$

3. $3\cos\theta$

4. $2\sin n\theta$

Question Number : 20 Question Id : 67809417643 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The centre of the circle:$x^2 + y^2 - 2x + 6y - 6 = 0$ is

Options :

1. $(1,3)$

2. $(2,3)$

3. $(1,-3)$

4. $(-1,3)$

Question Number : 21 Question Id : 67809417644 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The radius of the circle: $5x^2 + 5y^2 - 6x + 8y - 75 = 0$ is

Options :

1. -4

2. 4

3. 2

4. 3

Question Number : 22 Question Id : 67809417645 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The equation of the parabola with vertex $(2,-1)$ and focus $(2,-3)$ is

Options :

1. $x^2 - 4x + 8y + 12 = 0$

2. $x^2 - 4x - 8y - 12 = 0$

3. $x^2 + 4x - 8y - 12 = 0$

4. $x^2 + 5x - 8y - 11 = 0$

Question Number : 23 Question Id : 67809417646 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The centre of the ellipse: $9x^2 + 25y^2 - 18x + 100y - 116 = 0$ is

Options :

1. $(2, -1)$

2. $(-1, -2)$

3. $(1, -2)$

4. $(1, 2)$

Question Number : 24 Question Id : 67809417647 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The focus of the hyperbola: $\frac{x^2}{25} - \frac{y^2}{144} = 1$ is

Options :

1. $(-13, 0)$

2. $(13, 0)$

3. $(13, -1)$

4. $(13, 1)$

Question Number : 25 Question Id : 67809417648 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The length of the major axis of the ellipse: $4x^2 + 3y^2 = 48$ is

Options :

1. 10

2. 11

3. 8

4. 13

Question Number : 26 Question Id : 67809417649 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\lim_{x \to 1} \frac{x^3 - 1}{x - 1}$ is

Options :

1. 3

2. -3

3. 2

4. 1

Question Number : 27 Question Id : 67809417650 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = \frac{a + bx}{b - ax}$ then the derivative of y with respect to x is

Options :

1. $\frac{a^2 + b^2}{(b - ax)^2}$

2. $\frac{a^2 + b^2}{(b + ax)^2}$

3. $\frac{a^2 - b^2}{(b - ax)^2}$

4. $\frac{a + b}{(b - ax)^2}$

Question Number : 28 Question Id : 67809417651 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = x^3 e^x$ then $\frac{dy}{dx}$ is

Options :

1. $(x-3)x^2 e^x$

2. $(x-2)x^3 e^x$

3. $(x+3)x^2 e^x$

4. $(x-1)x^3 e^x$

Question Number : 29 Question Id : 67809417652 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = \sec x + \tan x$ then $\frac{dy}{dx}$ is

Options :

1. $y \cos x$

2. $y \sec x$

3. $-y \sin x$

4. $y \tan x$

Question Number : 30 Question Id : 67809417653 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = \frac{2+3\sinh x}{3+2\sinh x}$ then the derivative of y with respect to x is

Options :

1. $\frac{5\cosh x}{(3+2\sinh x)^2}$

2. $\frac{5\sinh x}{(3+2\sinh x)^2}$

3. $\frac{5\sin x}{(3-2\cosh x)^2}$

$$4. \quad \frac{\sinh^2 x}{(2 - 3\sinh x)^2}$$

Question Number : 31 Question Id : 67809417654 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = \sqrt{\dfrac{1-\cos x}{1+\cos x}}$ then $\dfrac{dy}{dx}$ is

Options :

1. $\sec^2\left(\dfrac{x}{2}\right)$

2. $\cos^2\left(\dfrac{x}{2}\right)$

3. $\dfrac{1}{2}\cos^2\left(\dfrac{x}{2}\right)$

4. $\dfrac{1}{2}\sec^2\left(\dfrac{x}{2}\right)$

Question Number : 32 Question Id : 67809417655 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The angle between the curves $y = x^2 + 3x - 7$ and $y^2 = 2x + 5$ at $(2,3)$ is

Options :

1. $\tan\theta = 2$

2. $\sec\theta = 2$

3. $\cos\theta = 1$

4. $\sin\theta = 3$

Question Number : 33 Question Id : 67809417656 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The range of x for which the function $x^3 - 3x^2 - 45x + 2$ is increasing with x is

Options :

1. $(3, -5)$

2. $(-3, -5)$

3. $(3, 5)$

4. $(-3, 5)$

Question Number : 34 Question Id : 67809417657 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The maximum value of the function $2x^3 - 12x^2 + 18x + 5$ is

Options :

1. 13

2. 12

3. 10

4. 15

Question Number : 35 Question Id : 67809417658 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If u is a homogeneous function of x and y with degree n then $x\dfrac{\partial u}{\partial x} + y\dfrac{\partial u}{\partial y} =$

Options :

1. $-nu$

2. $n^2 u$

3. nu

4. $nu^2 + u$

Question Number : 36 Question Id : 67809417659 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\int \dfrac{\cos\sqrt{x}}{\sqrt{x}} dx$ is

Options :

1. $2\sin\sqrt{x} + c$

2. $3 \sin \sqrt{x} + c$

3. $2 \sin x + c$

4. $\sin \sqrt{x} + c$

Question Number : 37 Question Id : 67809417660 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\int \frac{dx}{\sqrt{a^2 - x^2}}$ is

Options :

1. $\cos^{-1}\left(\frac{x}{a}\right) + c$

2. $\sin^{-1}\left(\frac{x}{a}\right) + c$

3. $\sinh^{-1}\left(\frac{x}{a}\right) + c$

4. $\sin^{-1}\left(\frac{a}{x}\right) + c$

Question Number : 38 Question Id : 67809417661 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\int \frac{dx}{4x^2 + 4x + 17}$ is

Options :

1. $\frac{1}{8} \tan^{-1}\left(\frac{2x+1}{4}\right) + c$

2. $\frac{1}{4} \cot^{-1}\left(\frac{2x+1}{4}\right) + c$

3. $\frac{1}{8} \sin^{-1}\left(\frac{2x+1}{4}\right) + c$

4. $\frac{1}{3} \tan^{-1}\left(\frac{2x+1}{4}\right) + c$

The value of $\int \log x \, dx$ is

Options :

1. $x \log x + x + c$

2. $x^2 \log x - x + c$

3. $x \log x - x + c$

4. $x \log x - \dfrac{x^2}{2} + c$

The value of $\int_1^4 \left(\sqrt{x} + \dfrac{1}{\sqrt{x}}\right) dx$ is

Options :

1. $\dfrac{20}{3}$

2. $-\dfrac{20}{3}$

3. $\dfrac{10}{3}$

4. $\dfrac{15}{3}$

The value of $\int_0^{\pi/2} \sin^2 x \, dx$ is

Options :

1. $\dfrac{\pi}{2}$

2. $-\dfrac{\pi}{4}$

3. $\dfrac{\pi}{6}$

4. $\dfrac{\pi}{4}$

Question Number : 42 Question Id : 67809417665 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The area enclosed between the curve $y^2 = 4ax$ and the line $x = 2y$ is

Options :

1. $\dfrac{64}{5}$ sq. units

2. $\dfrac{64}{3}$ sq. units

3. $\dfrac{65}{4}$ sq. units

4. $\dfrac{63}{4}$ sq. units

Question Number : 43 Question Id : 67809417666 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\lim_{n \to \infty} \left[\dfrac{1}{n+1} + \dfrac{1}{n+2} + \cdots .. + \dfrac{1}{n+n} \right]$ is

Options :

1. $\log 2$

2. $\log 3$

3. $-\log 2$

4. $\log n$

Question Number : 44 Question Id : 67809417667 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Form the differential equation by eliminating the arbitrary constant a from $ay^2 = x^3$

Options :

1. $\dfrac{dy}{dx} = \dfrac{3y}{2x}$

2. $\dfrac{dy}{dx} = \dfrac{2x}{3y}$

3. $\dfrac{dy}{dx} = \dfrac{x}{y}$

4. $\dfrac{dy}{dx} = \dfrac{2y}{x}$

Question Number : 45 Question Id : 67809417668 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of $\sqrt{1 - y^2}\,dx + \sqrt{1 - x^2}\,dy = 0$ is

Options :

1. $\cos^{-1} x + \cos^{-1} y = c$

2. $\sinh^{-1} x + \cosh^{-1} y = c$

3. $\cos^{-1} x + \sec^{-1} x = c$

4. $\sin^{-1} x + \sin^{-1} y = c$

Question Number : 46 Question Id : 67809417669 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of $\dfrac{dy}{dx} = (4x + y + 1)^2$ is

Options :

1. $\dfrac{1}{2}\tan^{-1}\left(\dfrac{4x+y+1}{2}\right) = x + c$

2. $\dfrac{1}{2}\cot^{-1}\left(\dfrac{4x+y+1}{2}\right) = x + c$

3. $-\dfrac{1}{2}\tan^{-1}\left(\dfrac{4x+y+1}{2}\right) = x + c$

$$4. \quad \frac{1}{2}\tan^{-1}\left(\frac{4x-y-1}{2}\right) = x + c$$

Question Number : 47 Question Id : 67809417670 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of exact differential equation $2xy\,dx + x^2dy = 0$ is

Options :

1. $x^2y^2 = c$

2. $x^2y = c$

3. $x^3y = c$

4. $x^2y^3 = c$

Question Number : 48 Question Id : 67809417671 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of $\frac{dy}{dx} + y = e^{-x}$ is

Options :

1. $(x + c)e^{-x}$

2. $(x - c)e^{x}$

3. $(x + c)e^{x}$

4. $(x + c)e^{-2x}$

Question Number : 49 Question Id : 67809417672 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The particular integral of $(D^2 + 5D + 6)y = e^x$ is

Options :

1. $\frac{-e^{-x}}{12}$

$$2. \quad \frac{e^{2x}}{12}$$

$$3. \quad \frac{e^{x}}{12}$$

$$4. \quad \frac{e^{x}}{6}$$

Question Number : 50 Question Id : 67809417673 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The complementary function of $(D^2 + 3D + 2)y = 8sin5x$ is

Options :

1. $c_1 e^{-x} + c_2 e^{-2x}$

2. $c_1 e^{x} + c_2 e^{2x}$

3. $c_1 e^{-x} + c_2 e^{2x}$

4. $c_1 e^{2x} + c_2 e^{3x}$

Physics

Number of Questions:	25
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 51 Question Id : 67809417674 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not the unit of energy?

Options :

1. watt second

2. Pascal metre

3. Newton metre

4. Kilowatt hour

Question Number : 52 Question Id : 67809417675 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The height of Mercury barometer is 76 cm and density of Mercury is 13.6 g/cc. The

corresponding height of water barometer in SI system is

Options :

1. 10.336 m

2. 103.36 m

3. 3.6m

4. 1.0336 m

Question Number : 53 Question Id : 67809417676 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Angle made by the vector $(\sqrt{3}\ \bar{i} + \bar{j})$ with the X-axis is

Options :

1. $\pi/2$

2. $\pi/4$

3. $\pi/3$

4. $\pi/6$

Question Number : 54 Question Id : 67809417677 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The minimum number of unequal forces in a plane that can keep a particle in equilibrium is

Options :

1. 4

2. 2

3. 3

4. 6

Question Number : 55 Question Id : 67809417678 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A body is thrown with a velocity of $(4\bar{i} + 3\bar{j})$ m/s. The maximum height attained by

the body is (g=10 ms^{-2})

Options :

1. 2.5 m

2. 4.5 m

3. 0.8 m

4. 0.45 m

Question Number : 56 Question Id : 67809417679 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A person in a lift, which ascends up with acceleration 10ms^{-2}, drops a stone from a height of

10m. The time of descent is (g=10 ms^{-2})

Options :

1. 0.5 s

2. 1 s

3. 1.5 s

4. 2 s

Question Number : 57 Question Id : 67809417680 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For a projectile, the ratio of maximum height reached to the square of time of flight is

Options :

1. 5:4

2. 5:2

3. 5:1

4. 10:1

Question Number : 58 Question Id : 67809417681 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The ratio of distances travelled by a body, starting from rest and travelling with uniform

acceleration, in successive intervals of time of equal duration will be

Options :

1. 1:2:3

2. 1:4:9

3. 1:3:5

4. 1:9:16

Question Number : 59 Question Id : 67809417682 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A force of 12 N acts on a body of mass 4 kg placed on a rough surface. The coefficient of

friction between body and surface is 0.2 and take g= 10 ms^{-2}. The acceleration of the body in

ms^{-2} is

Options :

1. 1

2. 0.5

3. 0.25

4. Zero

Question Number : 60 Question Id : 67809417683 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Brakes stop a train in a certain distance d. When the braking force is made one fourth, the

brakes will stop the train in a distance which is

Options :

1. d/2

2. 4d

3. 2d

4. d

Question Number : 61 Question Id : 67809417684 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The product of linear momentum and velocity of a body represents

Options :

1. Kinetic energy of the body

2. Potential energy of the body

3. Half the Kinetic energy of the body

4. Twice the kinetic energy of the body

Question Number : 62 Question Id : 67809417685 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
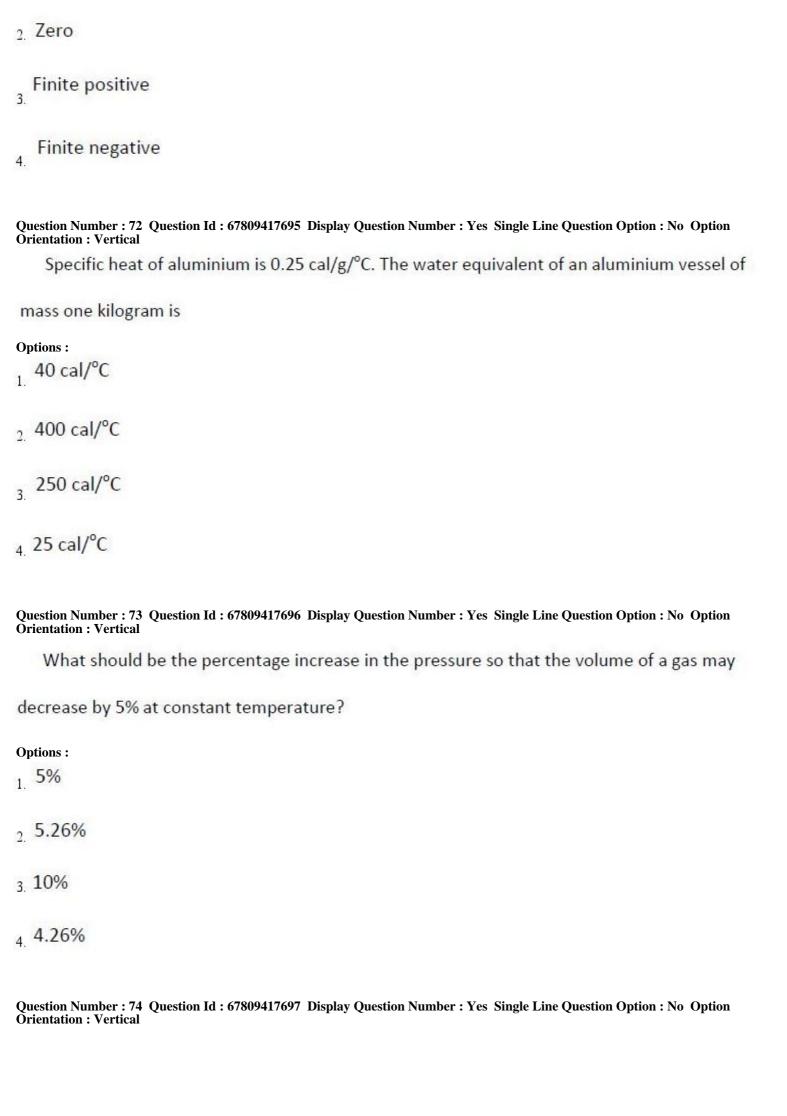
A man weighing 60 kg eats plum cake whose energy content is 9800 calories. If all this

energy could be utilised by him, he can ascend to a height of

Options :

1. 17 m

2. 100 m

3. 70 m

4. 60m

Question Number : 63 Question Id : 67809417686 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A crane can lift up 10,000 kg of coal in 1 hour from a mine of depth 180m. If the efficiency of

the crane is 80%, its input power must be (g=10 ms^{-2})

Options :

1. 62.5 kW

2. 6.25 kW

3. 50 kW

4. 5 kW

Question Number : 64 Question Id : 67809417687 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The graph of acceleration as a function of displacement in the case of a body executing

simple harmonic motion is

Options :

1. Parabola

2. Hyperbola

3. Straight line with positive slope

4. Straight line with negative slope

Question Number : 65 Question Id : 67809417688 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The pendulum of length 'L' swings from mean position to mean position 'n' times in one

second.The value of acceleration due to gravity is

Options :

1. $\pi^2 n^2 L$

2. $2\pi^2 n^2 L$

3. $(\pi^2 n^2 L)/2$

4. $4\pi^2 n^2 L$

Question Number : 66 Question Id : 67809417689 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When a source of sound is in motion towards a stationary observer, the effect observed is

Options :

1. Decrease in velocity of sound

2. Increase in velocity of sound

3. increase in frequency of sound

4. decrease in frequency of sound

Question Number : 67 Question Id : 67809417690 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The voice of a male person is different from that of a female person because

Options :

1. Two sounds have different phases

2. Two persons are of different size

3. Two sounds travel with different velocities

4. Two sounds have different pitch

Question Number : 68 Question Id : 67809417691 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the sound absorption of a hall is changed by 2%, then the percentage change in the

reverberation time is

Options :

1. 2%

2. 4%

3. 1%

4. No change

Question Number : 69 Question Id : 67809417692 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In which of the following process, the internal energy of the system remains constant?

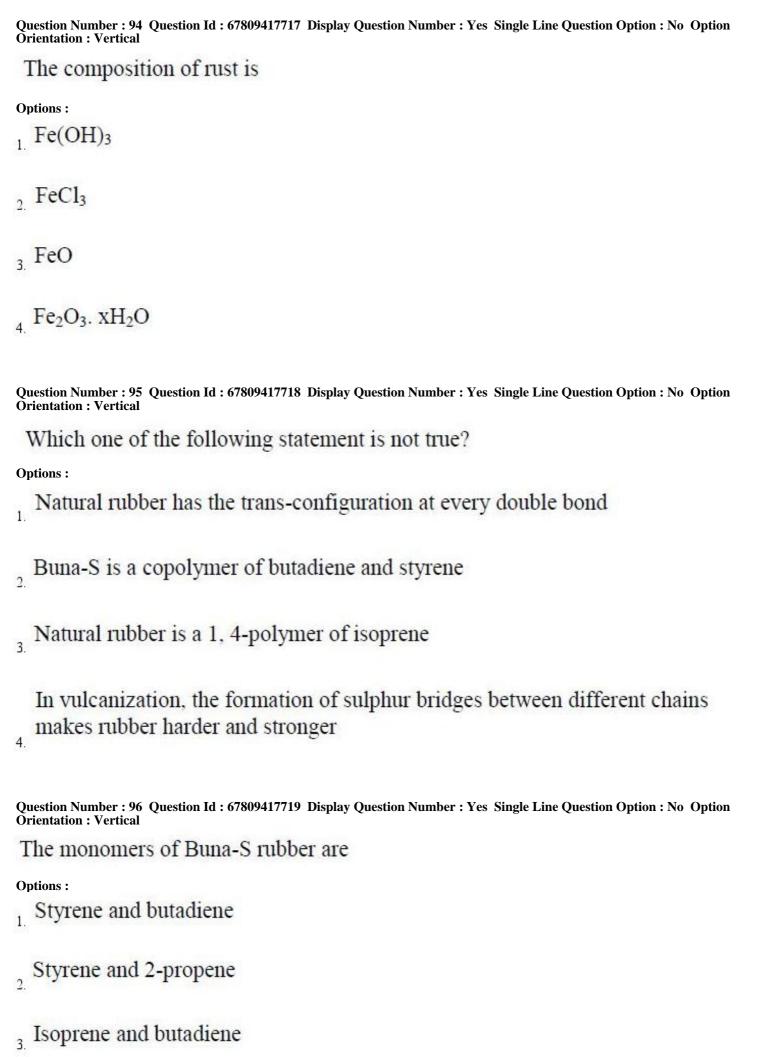Options :

1. Adiabatic

2. Isothermal

3. Isobaric

4. Isochoric

Question Number : 70 Question Id : 67809417693 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Heat required to raise the temperature of one gram of water through 1 K is

Options :

1. 1.0 Kcal

2. 0.1 Kcal

3. 0.01 Kcal

4. 0.001 Kcal

Question Number : 71 Question Id : 67809417694 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The specific heat of a gas in an isothermal process is

Options :

1. infinity

2. Zero

3. Finite positive

4. Finite negative

Question Number : 72 Question Id : 67809417695 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Specific heat of aluminium is 0.25 cal/g/°C. The water equivalent of an aluminium vessel of

mass one kilogram is

Options :

1. 40 cal/°C

2. 400 cal/°C

3. 250 cal/°C

4. 25 cal/°C

Question Number : 73 Question Id : 67809417696 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What should be the percentage increase in the pressure so that the volume of a gas may

decrease by 5% at constant temperature?

Options :

1. 5%

2. 5.26%

3. 10%

4. 4.26%

Question Number : 74 Question Id : 67809417697 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the maximum kinetic energy of emitted photo electrons from a metal is 0.9 eV and work

function is 2.2 eV, then the wavelength of incident radiation is

Options :

1. 4000Å

2. 8000Å

3. 3000Å

4. 2000Å

Question Number : 75 Question Id : 67809417698 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the angle of incidence of a ray is greater than the critical angle at the core – cladding

interface in an optical fiber, then the ray travels

Options :

1. in the core

2. in the cladding

3. in the buffer

4. along the interface

Chemistry

Number of Questions:	25
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 76 Question Id : 67809417699 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Pauli's Exclusion principle states that two electrons in same orbital have

Options :

1. same spins

2. different spins

3. opposite spins

4. vertical spins

Question Number : 77 Question Id : 67809417700 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Orbits in which electrons move according to Bohr are

Options :

1. elliptical

2. cylindrical

3. circular

4. oval

Question Number : 78 Question Id : 67809417701 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Phosphorus has an atomic number of 15. A stable phosphorus atom has an electronic configuration of

Options :

1. $1s^2 2s^2 2p^6 3p^5$

2. $1s^2 2s^2 2p^6 3s^2 3p^3$

3. $1s^2 2s^2 2p^6 3s^2 3p^1 4s^2$

4. $1s^2 1p^6 1d^7$

Question Number : 79 Question Id : 67809417702 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

NaCl is classified as having what kind of bonds in the solid phase?

Options :

1. Covalent

2. Ionic

3. Polar

4. vander Waals

The Bond formed due to sharing of electrons is

Options :

1. Ionic bond

2. Metallic bond

3. Polar bond

4. Covalent bond

The normality of solution obtained by dissolving 5.3 grams of Na_2CO_3 in 1 litre solution is

Options :

1. 1N

2. 0.1N

3. 0.05N

4. 0.5N

The following solution has same molarity and normality

Options :

1. Na_2CO_3

2. $NaCl$

3. H_2SO_4

4. $K_2Cr_2O_7$

Question Number : 83 Question Id : 67809417706 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

5 moles of a solute is dissolved in 10 litres of solution. What is its molarity?

Options :

1. 5 M

2. 2M

3. 0.5M

4. 0.2M

Question Number : 84 Question Id : 67809417707 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Process in which acids (H^+) and bases (OH^-) react to form salts and water is called

Options :

1. Neutralization

2. Halogenation

3. Hydrogenation

4. Hydrolysis

Question Number : 85 Question Id : 67809417708 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A substance that donates a pair of electrons to form coordinate covalent bond is called

Options :

1. Lewis acid

2. Lewis base

3. Bronsted-Lowry acid

4. Bronsted-Lowry base

Question Number : 86 Question Id : 67809417709 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

One Faraday is equal to

Options :

1. 99650 C

2. 93100 C

3. 96500 C

4. 94500 C

Question Number : 87 Question Id : 67809417710 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The cell reaction of a cell is $Mg(s) + 2 H^+(aq) \rightarrow Mg^{2+}(aq) + H_2(g)$. If the standard reduction potential of Zn is -2.372 V, then the emf of the cell is

Options :

1. +2.372 V

2. -2.372 V

3. 0.00 V

4. -1.372 V

Question Number : 88 Question Id : 67809417711 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Galvanic cells are the cells which convert

Options :

1. Electrical energy to chemical energy

2. Chemical energy to electrical energy

3. Chemical energy to free energy

4. Potential energy to kinetic energy

Question Number : 89 Question Id : 67809417712 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Mass of substance produced at electrode is directly proportional to the quantity of electricity passed. This is known as

Options :

1. Faraday's second law

2. Faraday's first law

3. Newton's third law

4. Newton's first law

Question Number : 90 Question Id : 67809417713 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Hardness of water is expressed in terms of equivalent of

Options :

1. Na_2CO_3

2. K_2CO_3

3. $MgCO_3$

4. $CaCO_3$

Temporary hardness is caused by

Options :

1. Carbonates of calcium and magnesium

2. Chlorides of calcium and magnesium

3. Sulphates of calcium and magnesium

4. Nitrates of Calcium

The exhausted zeolite bed can be regenerated by washing with

Options :

1. NaCl

2. dil. NaOH

3. dil. HCl

4. Distilled water

Corrosion is an example of

Options :

1. Oxidation

2. Reduction

3. Electrolysis

4. Halogenation

The composition of rust is

Options :

1. $Fe(OH)_3$

2. $FeCl_3$

3. FeO

4. $Fe_2O_3. xH_2O$

Which one of the following statement is not true?

Options :

1. Natural rubber has the trans-configuration at every double bond

2. Buna-S is a copolymer of butadiene and styrene

3. Natural rubber is a 1, 4-polymer of isoprene

4. In vulcanization, the formation of sulphur bridges between different chains makes rubber harder and stronger

The monomers of Buna-S rubber are

Options :

1. Styrene and butadiene

2. Styrene and 2-propene

3. Isoprene and butadiene

4. Styrene and sulphur

The plastics which soften when heat is applied with or without pressure, but require cooling to set them to shape are called as

Options :

1. Thermosofting materials

2. Thermosetting materials

3. Thermoplastic materials

4. Thermostatting materials

Which one of the following statement is not true about ideal fuel?

Options :

1. High calorific value

2. High moisture content

3. Low cost

4. Moderate ignition temperature

Environmental pollution affects

Options :

1. Humans only

2. Plants only

3. Biotic components

4. Both abiotic and biotic components

Question Number : 100 Question Id : 67809417723 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Layer of atmosphere in which ozone layer lies is

Options :

1. Troposphere

2. Stratosphere

3. Exosphere

4. Mesosphere

Electrical and Electronics Engineering

Number of Questions:	100
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 101 Question Id : 67809417724 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A network contains four resistors in series across an ideal voltage source. If the values of all the resistors are doubled then the voltage across each resistor will _____

Options :

1. be increased by 2 times

2. be increased by 4 times

3. be decreased by 2 times

4. not change

Question Number : 102 Question Id : 67809417725 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If each branch of a delta circuit has resistance of 1.732R, then each branch of its equivalent star circuit has resistance of _____

Options :

1. 3R

2. 1.732R

3. 0.577R

4. 0.333R

Question Number : 103 Question Id : 67809417726 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Thevenin's equivalent circuit consists of _____

Options :

1. A voltage source in parallel with resistance

2. A voltage source in series with resistance

3. A current source in parallel with resistance

4. A current source in series with resistance

Question Number : 104 Question Id : 67809417727 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following statement is correct?

Options :

1. Resistor is an active element

2. Inductor is an active element

3. Voltage source is a passive element

4. Current source is an active element

Question Number : 105 Question Id : 67809417728 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The mutual inductance between two coupled coils with self inductances L_1=9 H

and L_2 = 4 H with a coefficient of coupling of 0.5 is _____

Options :

1. 3 H

2. 6 H

3. 18 H

4. 36 H

Question Number : 106 Question Id : 67809417729 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the distance between two charges is doubled, the force between them _____

Options :

1. Increases two times

2. decreases two times

3. Increases four times

4. decreases four times

Question Number : 107 Question Id : 67809417730 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The heat produced in a current carrying conductor is _____

Options :

1. IRT

2. I^2RT

3. IR^2T

4. IRT^2

Question Number : 108 Question Id : 67809417731 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the number of conductors and speed of a Lap wound D.C. Generator is doubled then the generated e.m.f. will be _____

Options :

1. Remains same

2. Double the former value

3. Four times the former value

4. Eight times the former value

Question Number : 109 Question Id : 67809417732 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A 4 pole, D.C. wave wound Generator runs at 600 r.p.m. The flux per pole is 0.015 webers and generator no load voltage is 240Volts. The number of conductors are _____

Options :

1. 600

2. 800

3. 1000

4. 1200

Question Number : 110 Question Id : 67809417733 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The simplest way to shift load from one D.C. shunt generator running in parallel with another is by _____

Options :

1. Adjusting their field rheostats

2. Inserting resistance in their armature circuits

3. Adjusting the speeds of their prime movers

4. Using equalizer connections

Question Number : 111 Question Id : 67809417734 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The voltage regulation of an over-compound D.C. generator is always _____

Options :

1. Positive

2. negative

3. zero

4. high

Question Number : 112 Question Id : 67809417735 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

D.C. Shunt motors are commonly used in _____

Options :

1. Cranes

2. Electric Traction

3. Elevators

4. Lathe machines

Question Number : 113 Question Id : 67809417736 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The voltage equation of a D.C. motor is _____

Options :

1. $V = E_b / I_a R_a$

2. $E_b = V + I_a R_a$

3. $V = E_b + I_a R_a$

4. $V = E_b + I_a^2 R_a$

Question Number : 114 Question Id : 67809417737 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A 4 pole 240V, d.c. series motor has a wave wound armature with 180 conductors. The armature resistance and field winding resistance are 0.10Ω and 0.20Ω respectively. If the motor is drawing 40A current at 0.015 webers flux per pole, then the speed under this condition is _____ r.p.m.

Options :

1. 2533.33

2. 2644.4

3. 2756.9

4. 2987.6

Question Number : 115 Question Id : 67809417738 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The capacity of a battery is expressed in _____

Options :

1. watts

2. Volt hours

3. Ampere hours

4. Ohm hours

Question Number : 116 Question Id : 67809417739 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Moving coil and moving iron instruments can be distinguished by looking at _____

Options :

1. Their range

2. pointer

3. scale

4. Size of terminals

Question Number : 117 Question Id : 67809417740 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In dynamometer wattmeter, number of coils used are _____

Options :

1. 2

2. 3

3. 4

4. 6

Question Number : 118 Question Id : 67809417741 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following transducer is known as 'self generating transducer' ?

Options :

1. Passive transducer

2. Active transducer

3. Secondary transducer

4. Analog transducer

Question Number : 119 Question Id : 67809417742 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When a Megger is not in operation then its needle shows a resistance of _____

Options :

1. Zero ohms

2. 10 ohms

3. 100 ohms

4. infinity

Question Number : 120 Question Id : 67809417743 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a pure inductive circuit, the voltage will be _____

Options :

1. In phase with current

2. Lags the current by 90 degrees

3. Leads the current by 90 degrees

4. Lags the current by 45 degrees

Question Number : 121 Question Id : 67809417744 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The peak factor is the ratio of _____

Options :

1. Peak value to RMS value

2. RMS value to peak value

3. average value to RMS value

4. RMS value to average value

Question Number : 122 Question Id : 67809417745 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A series RLC circuit has a resonant frequency of f_0 Hz. If all the circuit element values are doubled, the new resonant frequency is _____

Options :

1. $2f_0$

2. f_0

3. $0.25f_0$

4. $0.5f_0$

Question Number : 123 Question Id : 67809417746 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A three phase balanced delta connected circuit has a load impedance of $(6+j9)$ ohms per phase. What is its equivalent star connected load impedance per phase in ohms ?

Options :

1. $(6+j9)$

2. (2+j3)

3. (18+j27)

4. (12+j18)

Question Number : 124 Question Id : 67809417747 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In two wattmeter method of measurement of power, if the two wattmeters readings are equal, then the power factor will be _____

Options :

1. zero

2. unity

3. 0.5

4. 0.866

Question Number : 125 Question Id : 67809417748 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A step-up transformer increases _____

Options :

1. voltage

2. current

3. power

4. frequency

Question Number : 126 Question Id : 67809417749 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A transformer having 1000 primary turns is connected to a 250V A.C. supply. For a secondary voltage of 400V, the number of secondary turns should be _____

Options :

1. 250

2. 400

3. 1250

4. 1600

Question Number : 127 Question Id : 67809417750 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The equivalent resistance of the primary of a 220V/1100V transformer is 0.1Ω. Its equivalent resistance referred to secondary is _____

Options :

1. 0.5Ω

2. 0.02Ω

3. 0.04Ω

4. 2.5Ω

Question Number : 128 Question Id : 67809417751 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A 100kVA transformer has an iron loss of 900W and full load copper loss of 1600W. Its load kVA corresponding to maximum efficiency is _____

Options :

1. 56.3 kVA

2. 133.3 kVA

3. 75 kVA

4. 177.7 kVA

Question Number : 129 Question Id : 67809417752 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If two transformers A and B are operating in parallel, with voltage rating of transformer A is slightly greater than that of transformer B. If E_A and E_B are induced emfs, Z_A and Z_B are the impedances of transformers A and B then the circulating current I_C is given by _____

Options :

1. $(E_A-E_B)/(Z_A+Z_B)$

2. $(E_A+E_B)/(Z_A+Z_B)$

3. $(Z_A-Z_B)/(E_A-E_B)$

4. $(Z_A+Z_B)/(E_A+E_B)$

Question Number : 130 Question Id : 67809417753 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The phase shift in a star-star connected three phase transformer is _____

Options :

1. 0 degrees

2. 30 degrees

3. 120 degrees

4. 180 degrees

Question Number : 131 Question Id : 67809417754 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An auto transformer supplies a load of 3kW at 115V at unity power factor. If the applied primary voltage is 230V, calculate the power transferred to the load inductively by neglecting losses.

Options :

1. 0.5kW

2. 1kW

3. 1.5kW

4. 2kW

Question Number : 132 Question Id : 67809417755 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The frequency of a 4 pole alternator running at 1500 RPM will be _____

Options :

1. 100 Hz

2. 60 Hz

3. 50 Hz

4. 25 Hz

Question Number : 133 Question Id : 67809417756 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The dark and bright lamp method is used for _____

Options :

1. Transfer of load

2. synchronizing

3. Balancing of load

4. Phase sequence

Question Number : 134 Question Id : 67809417757 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In an alternator, the armature reaction influences _____

Options :

1. Generated voltage per phase

2. frequency

3. Operating speed

4. Winding losses

Question Number : 135 Question Id : 67809417758 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The power developed by a synchronous motor will be maximum when the load angle is _____

Options :

1. 0 degrees

2. 45 degrees

3. 60 degrees

4. 90 degrees

Question Number : 136 Question Id : 67809417759 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An over excited synchronous motor is used for _____

Options :

1. Fluctuating loads

2. Variable speed loads

3. Low torque loads

4. Power factor corrections

Question Number : 137 Question Id : 67809417760 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the field of a synchronous motor is under excited, the power factor will be _____

Options :

1. zero

2. unity

3. lagging

4. leading

Question Number : 138 Question Id : 67809417761 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A 4-pole, 3-phase induction motor is running at 4% slip at full load. If the speed of the motor is 720 r.p.m., the supply frequency is _____

Options :

1. 15 Hz

2. 25 Hz

3. 50 Hz

4. 60 Hz

Question Number : 139 Question Id : 67809417762 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The rotor power output of a 3-phase induction motor is 15kW and the corresponding slip is 4%. The rotor copper loss will be _____

Options :

1. 600W

2. 625W

3. 650W

4. 700W

Question Number : 140 Question Id : 67809417763 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When the rotor of a 3-phase induction motor is blocked, the slip is _____

Options :

1. 1

2. 0.5

3. 0.1

4. 0

Question Number : 141 Question Id : 67809417764 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Double squirrel cage induction motor has _____

Options :

1. Two series windings in stator

2. Two series windings in rotor

3. Two parallel windings in rotor

4. Two parallel windings in stator

Question Number : 142 Question Id : 67809417765 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A capacitor start, capacitor run Induction motor is basically _____

Options :

1. two phase motor

2. D.C. motor

3. Commutator motor

4. Synchronous motor

Question Number : 143 Question Id : 67809417766 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following motor is most suitable for computer drive printers?

Options :

1. Reluctance motor

2. Hysteresis motor

3. Shaded pole motor

4. Stepper motor

Question Number : 144 Question Id : 67809417767 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Ash content of Indian coal is approximately _____

Options :

1. 5%

2. 8%

3. 10%

4. 25%

Question Number : 145 Question Id : 67809417768 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A Kaplan turbine is _____

Options :

1. A low head axial flow turbine

2. A high head mixed flow turbine

3. Inward flow impulse turbine

4. Outward flow reaction turbine

Question Number : 146 Question Id : 67809417769 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The nuclear reactor starts generation when _____

Options :

1. The safety rod is inserted into the core

2. The safety rod is withdrawn from the core

3. The shim rod is inserted into the core

4. The shim rod is withdrawn from the core

Question Number : 147 Question Id : 67809417770 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The maximum demand of a consumer is 2kW and his daily energy consumption is 20 units. His load factor is _____

Options :

1. 10.15%

2. 41.66%

3. 50%

4. 75%

Question Number : 148 Question Id : 67809417771 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

It is always economical to improve the power factor of an installation to _____

Options :

1. zero

2. unity

3. A little less than unity lag

4. A little less than unity lead

Question Number : 149 Question Id : 67809417772 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A 3-phase breaker is rated at 2000MVA, 33kV. Its breaking current will be _____

Options :

1. 35kA

2. 49kA

3. 70kA

4. 89kA

Question Number : 150 Question Id : 67809417773 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The pickup value of a relay is 7.5A and fault current in relay coil is 37.5A. Its plug setting multiplier is _____

Options :

1. 10

2. 7.5

3. 2.5

4. 5

Question Number : 151 Question Id : 67809417774 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A mho relay is a _____

Options :

1. Voltage restrained directional relay

2. Voltage controlled over current relay

3. Directional restrained over current relay

4. Directional restrained over voltage relay

Question Number : 152 Question Id : 67809417775 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Buchholz relay provides protection of the transformer from _____

Options :

1. External faults

2. Internal faults

3. Lightening faults

4. Dielectric breakdown

Question Number : 153 Question Id : 67809417776 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A differential protection system responds to the _____ of the two electrical quantities.

Options :

1. Arithmetic difference

2. Arithmetic sum

3. Vectorial difference

4. Vector Sum

Question Number : 154 Question Id : 67809417777 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The transfer of electrical energy from consumers localities to the consumers premises is called _____

Options :

1. Primary transmission

2. Primary distribution

3. secondary transmission

4. secondary distribution

Question Number : 155 Question Id : 67809417778 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The capacitive effect is negligible in _____

Options :

1. Short transmission lines

2. Medium transmission lines

3. Long transmission lines

4. Medium and Long transmission lines

Question Number : 156 Question Id : 67809417779 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Surge impedance of a transmission line is given by _____

Options :

1. Square root of (L/C)

2. Square root of (C/L)

3. Square root of (LC)

4. Square root of (1/LC)

Question Number : 157 Question Id : 67809417780 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the conductor diameter increases, inductance of the line _____

Options :

1. decreases

2. Increases

3. Remains same

4. Equal to zero

Question Number : 158 Question Id : 67809417781 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The first HVDC scheme in India is _____

Options :

1. Vindhyachal back to back system

2. Chandrapur – Padghe Scheme

3. Delhi – Rihand 500kV system

4. Sileru –Barsoor system

Question Number : 159 Question Id : 67809417782 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

ACSR conductor implies

Options :

1. All Conductors Surface treated and Realigned

2. Aluminium Conductor Steel Reinforced

3. Anode Current Sinusoidal Run

4. Anodised Core Smooth Run

Question Number : 160 Question Id : 67809417783 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following equipment is not used in the substations?

Options :

1. Shunt reactor

2. Exciters

3. Voltage transformers

4. Series capacitors

Question Number : 161 Question Id : 67809417784 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The most commonly used material for insulators of overhead lines is _____

Options :

1. Plastic

2. Rubber

3. Mica

4. Porcelain

Question Number : 162 Question Id : 67809417785 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

As compared to a D.C 2-Wire distributor, a 3-Wire distributor with same maximum voltage to earth uses only _____ percent of copper.

Options :

1. 66.66

2. 50

3. 31.25

4. 75

Question Number : 163 Question Id : 67809417786 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For the voltages beyond 66kV, the cable used is _____

Options :

1. Belted Cables

2. Screened Cables

3. Pressure Cables

4. S.L. Type Cables

Question Number : 164 Question Id : 67809417787 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The maximum speed attained by a train on the run is known as _____

Options :

1. Crest speed

2. Average speed

3. Scheduled speed

4. coasting

Question Number : 165 Question Id : 67809417788 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For train lighting the generator used is _____

Options :

1. Series generator

2. Shunt generator

3. Rosenberg generator

4. Synchronous generator

Question Number : 166 Question Id : 67809417789 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In speed-time curve for trains, the notching period is _____

Options :

1. Constant acceleration period

2. Free running period of train

3. Braking period of train

4. Coasting period of train

Question Number : 167 Question Id : 67809417790 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following system is used for long distance railways ?

Options :

1. 250V D.C.

2. 25kV, Single Phase A.C.

3. 25kV, 2- Phase A.C.

4. 25kV, 3- Phase A.C.

Question Number : 168 Question Id : 67809417791 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

_____ motor is preferred for printing machines

Options :

1. Universal

2. Series

3. Shunt

4. D.C. Compound

Question Number : 169 Question Id : 67809417792 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the gain of the Open-loop system is doubled, the gain margin _____

Options :

1. Is not affected

2. Becomes half

3. Becomes doubled

4. Becomes one-fourth

Question Number : 170 Question Id : 67809417793 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following element is not used in an automatic control system?

Options :

1. sensor

2. Error detector

3. oscillator

4. Final control element

Question Number : 171 Question Id : 67809417794 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In SCADA system, the RTU stands for

Options :

1. Remote Terminal Unit

2. Round Terminal Unit

3. Remote Thermal Unit

4. Round Thermal Unit

Question Number : 172 Question Id : 67809417795 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following tool is used for holding, gripping and cutting of wires?

Options :

1. Screw driver

2. hammer

3. Cutting plier

4. hacksaw

Question Number : 173 Question Id : 67809417796 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The wire running on the top of the overhead line, to protect from lightning is called as _____

Options :

1. Phase

2. Neutral

3. Stay Wire

4. Earth Wire

Question Number : 174 Question Id : 67809417797 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In irrigation pump-sets the accidental opening of one of the supply lines is known as _____

Options :

1. Three phasing

2. Two phasing

3. Single phasing

4. Neutral phasing

Question Number : 175 Question Id : 67809417798 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The rating of the fuse wire is always expressed in _____

Options :

1. amperes

2. volts

3. watts

4. ohms

Question Number : 176 Question Id : 67809417799 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The current in a Zener Diode is controlled by _____

Options :

1. Reverse-bias voltage

2. Potential barrier

3. Zener Diode resistance

4. External resistance

Question Number : 177 Question Id : 67809417800 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Each diode of half wave rectifier conducts for _____

Options :

1. 90 degrees

2. 180 degrees

3. 270 degrees

4. 360 degrees

Question Number : 178 Question Id : 67809417801 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The transistor used in amplifier circuit operates in _____ region

Options :

1. active

2. saturation

3. Cut-off

4. reverse

Question Number : 179 Question Id : 67809417802 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The maximum efficiency of Class A amplifier is _____

Options :

1. 100%

2. 81.8%

3. 50%

4. 30%

Question Number : 180 Question Id : 67809417803 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The purpose of coupling capacitor in an amplifier is to _____

Options :

1. Control the output

2. Match the impedance

3. Control the bandwidth

4. Prevent D.C. mixing with input

Question Number : 181 Question Id : 67809417804 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The phase shift oscillator generally contains _____

Options :

1. Four stages of RC circuit

2. Three stages of RC circuit

3. Two stages of RC circuit

4. One stage of RC circuit

Question Number : 182 Question Id : 67809417805 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

_____oscillator is the most stable oscillator

Options :

1. Crystal controlled

2. Weinbridge

3. Colpitts

4. Hartley

Question Number : 183 Question Id : 67809417806 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The base of the hexadecimal number system is _____

Options :

1. 2

2. 8

3. 10

4. 16

Question Number : 184 Question Id : 67809417807 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Gate whose output is high, if any of its inputs is high is _____

Options :

1. NAND

2. OR

3. NOR

4. EX-OR

Question Number : 185 Question Id : 67809417808 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The memory used for main memory in a hand calculator is _____

Options :

1. RAM

2. ROM

3. PROM

4. EPROM

Question Number : 186 Question Id : 67809417809 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is the fastest A to D converter ?

Options :

1. Successive approximation converter

2. Counter type converter

3. Comparator converter

4. Dual Slope converter

Question Number : 187 Question Id : 67809417810 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An SCR is a _____ Switch

Options :

1. Unidirectional

2. Two-directional

3. Three-directional

4. Four-directional

Question Number : 188 Question Id : 67809417811 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Turn-on time of an SCR can be reduced by using a _____

Options :

1. Rectangular pulse of low amplitude and wide width

2. Rectangular pulse of high amplitude and narrow width

3. Triangular pulse

4. Trapezoidal pulse

Question Number : 189 Question Id : 67809417812 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In an UJT, maximum value of charging resistance is associated with _____

Options :

1. Peak Point

2. Valley Point

3. Any point between peak and valley point

4. After the valley point

Question Number : 190 Question Id : 67809417813 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Triac can be used only in _____

Options :

1. inverter

2. rectifier

3. Multiquadrant chopper

4. Cycloconverter

Question Number : 191 Question Id : 67809417814 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Freewheeling diode in a converter is placed _____

Options :

1. In series with each thyristor

2. In shunt with each thyristor

3. Across the D.C. load impedance

4. In series with the D.C. load impedance

Question Number : 192 Question Id : 67809417815 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A cycloconverter is a _____

Options :

1. Amplitude changer

2. Phase changer

3. Waveform changer

4. Frequency changer

Question Number : 193 Question Id : 67809417816 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In dc chopper, if T is the chopping period, then the output voltage may be controlled by PWM by _____

Options :

1. Varying T, keeping TON constant

2. Varying TON, keeping T constant

3. Varying TOFF, keeping T constant

4. Varying T, keeping TOFF constant

Question Number : 194 Question Id : 67809417817 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A single phase voltage source square wave inverter feeds pure inductive load. The waveform of the load current will be _____

Options :

1. sinusoidal

2. rectangular

3. trapezoidal

4. triangular

Question Number : 195 Question Id : 67809417818 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The PWM control of D.C. Motor varies _____ with speed

Options :

1. inversely

2. parabolically

3. exponentially

4. linearly

Question Number : 196 Question Id : 67809417819 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

SMPS are based on the _____ principle

Options :

1. Phase control

2. Integral control

3. Chopper

4. MOSFET

Question Number : 197 Question Id : 67809417820 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The number of flags of 8051 is _____

Options :

1. 5

2. 8

3. 2

4. 4

Question Number : 198 Question Id : 67809417821 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

During PUSH instruction, the stack pointer is _____

Options :

1. Incremented by two

2. Incremented by one

3. Decremented by two

4. Decremented by one

Question Number : 199 Question Id : 67809417822 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In 8255, the length of a control word is _____

Options :

1. 2-bytes

2. 4-bits

3. 8-bits

4. 12-bits

Question Number : 200 Question Id : 67809417823 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

PIC 8259 is a _____ pin chip

Options :

1. 40

2. 28

3. 24

4. 32