Question Paper Preview

Question Paper Name :	Electronics and Communication Engineering 14th Sep 2020 S2
Subject Name :	Electronics and Communication Engineering
Duration :	180
Total Marks :	200
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes
Is this Group for Examiner? :	No

Mathematics

Section Number :	1
Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	50
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes

Question Number : 1 Question Id : 61097514029 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $A=\begin{bmatrix}3 & 1\\ 1 & 4\end{bmatrix}$ and A^2-kA-4 $I_2 = 0$ then k=

Options :

1. 1

2. 2

3. -2

4. -1

Question Number : 2 Question Id : 61097514030 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $A=\begin{bmatrix}0 & 2 & 1\\ -2 & 0 & -2\\ -1 & x & 0\end{bmatrix}$ is a skew-symmetric matrix , then x is

Options :

1. 0

2. 1

3. 2

4. -2

Question Number : 3 Question Id : 61097514031 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If a+b+c=0, one root of $\begin{vmatrix} a-x & c & b \\ c & b-x & a \\ b & a & c-x \end{vmatrix} = 0$ is

Options :

1. x= 0

2. x=1

3. x= 2

4. $x=a^2+b^2+c^2$

Question Number : 4 Question Id : 61097514032 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The co-factors of the elements 2,-5 in the matrix $\begin{pmatrix} -1 & 0 & 5 \\ 1 & 2 & -2 \\ -4 & -5 & 3 \end{pmatrix}$ is

Options :

1. 16, 3

2. 17, -3

3. 17, 3

4. -17, -3

Question Number : 5 Question Id : 61097514033 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The solution of a system of linear equations 2x-y+3z=9 , x+y+z=6, x-y+z=2 is

Options :

1. $x=-1, y=-2, z=-3$

2. $x=-1, y=-2, z=3$

3. $x=-1, y=2, z=-3$

4. $x=1, y=2, z=3$

Question Number : 6 Question Id : 61097514034 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $\frac{2x+4}{(x-1)^3}=\frac{S_1}{(x-1)}+\frac{S_2}{(x-1)^2}+\frac{S_3}{(x-1)^3}$ Then $\sum_{j=1}^{3} S_j$ is equal to

Options :

1. S_2

2. $2S_2$

3. $4S_2$

4. $4S_1$

Question Number : 7 Question Id : 61097514035 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $\frac{3x^3-2x^2-1}{x^4+x^2+1}=\frac{Ax+B}{x^2+x+1}+\frac{Cx+D}{x^2+kx+1}$ then k =

Options :

1. 0

2. 1

3. -1

4. 2

Question Number : 8 Question Id : 61097514036 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $\sin780^0 \sin480^0-\cos120^0\sin330^0=k$ then k is

Options :

1. 0

2. 1

3. 1/2

4. -1/2

Question Number : 9 Question Id : 61097514037 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If A,B,C,D are the angles of cyclic quadrilateral taken in order, then cosA+cosB+cosC+cosD=

Options :

1. 0

2. 2

3. -1

4. -2

Question Number : 10 Question Id : 61097514038 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $\tan\theta = \frac{4}{3}$ then $\sqrt{\frac{1-\sin\theta}{1+\sin\theta}} =$

Options :

1.

1. $\frac{1}{3}$
2. $\frac{2}{3}$
3. $\frac{-1}{3}$
4. $\frac{-2}{3}$

Question Number : 11 Question Id : 61097514039 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The period of the function $f(x)=|\sin x|$ is

Options :

1. 2π
2. π
3. 3π
4. 4π

Question Number : 12 Question Id : 61097514040 Question Type : MCQ Display Question

Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The value of $\tan1^0 \tan2^0 \tan3^0 \ldots\ldots\ldots\ldots\ldots \tan89^0$ is

Options :

1. 1

2. 0

3. -1

4. ∞

Question Number : 13 Question Id : 61097514041 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $f(x)=\cos^2x+\sec^2x$ then its value always is

Options :

1. $f(x)<1$

2. $f(x)=1$

3. $2>f(x)<1$

4. $f(x) \geq 2$

Question Number : 14 Question Id : 61097514042 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If n is odd, then $\left(\frac{\cos x+\cos y}{\sin x-\sin y}\right)^n+\left(\frac{\sin x+\sin y}{\cos x-\cos y}\right)^n=$

Options :

1. -1

2. 1

3. 0

4. 2

Question Number : 15 Question Id : 61097514043 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The value of $\text{Tan}^{-1}(2)+\text{Tan}^{-1}(3)$ is

Options :

1. $\frac{\pi}{4}$

2. $\frac{\pi}{2}$

3. $\frac{\pi}{3}$

4. $\frac{3\pi}{4}$

Question Number : 16 Question Id : 61097514044 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The trigonometric equation $\sin^{-1}x=2\sin^{-1}$ a , has a solution for

Options :

1. $|a|<\frac{1}{2}$

2. $|a|\geq\frac{1}{\sqrt{2}}$

3. $\frac{1}{2}<|a|<\frac{1}{\sqrt{2}}$

4. $|a|\leq\frac{1}{\sqrt{2}}$

Question Number : 17 Question Id : 61097514045 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The solution set of the system of equations $x+y=\frac{2\pi}{3}$ and $\cos x+\cos y=\frac{3}{2}$ *is*

Options :

1.

ϕ

2. $\left\{n\pi+\frac{2\pi}{3}, n=12,3.....\right\}$

3. $\left\{n\pi-\frac{2\pi}{3}, n=12,3.....\right\}$

4. 0

Question Number : 18 Question Id : 61097514046 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

if $z=\frac{7-i}{3-4i}$ then z^{14} is

Options :

1. 2^7

2. $2^7 i$

3. $-2^7 i$

4. -2^7

Question Number : 19 Question Id : 61097514047 Question Type : MCQ Display Question

Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$i^2+i^4+i^6+\ldots\ldots(2n+1)$ terms is

Options :

1. 0

2. -1

3. -i

4. i

Question Number : 20 Question Id : 61097514048 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The equation of the polar of (-2,3) with respect to $x^2+y^2-4x-6y+5=0$ is

Options :

1. x=y

2. x+y=0

3. x=0

4. y=0

Question Number : 21 Question Id : 61097514049 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A parabolic arc has a height of 12m and a span of 20m. The height of the arc, 5m away

on either side of the centre is

Options :

1. 2m

2. 3m

3. 6m

4. 9m

Question Number : 22 Question Id : 61097514050 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The eccentricity of the ellipse whose latus-rectum is one third of its minor axis is

Options :

1. $\frac{2}{3}$

2. $\sqrt{\frac{2}{3}}$

3. $\frac{2\sqrt{2}}{3}$

4. $2\sqrt{\frac{2}{3}}$

Question Number : 23 Question Id : 61097514051 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A conic with eccentricity $\frac{3}{2}$ is

Options :

1. Parabola

2. Ellipse

3. hyperbola

4. Circle

Question Number : 24 Question Id : 61097514052 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The focus of the parabola $(y-1)^2=8(x-3)$ is

Options :

1. $(4,2)$

2. $(3,5)$

3. $(5,1)$

4. $(2,1)$

Question Number : 25 Question Id : 61097514053 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The tangents drawn from the point P(-2,19) to the parabola $y^2=8x$ are perpendicular to each other. Then the point P lies on the parabola at

Options :

1. Tangent at the vertex

2. directrix

3. latus-rectum

4. diameter through the focus

Question Number : 26 Question Id : 61097514054 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$\lim_{n\to\infty}\left(\frac{n}{n+1}\right)^{2n}$ is

Options :

1. 0

2. e

3. e^2

4. $1/e^2$

Question Number : 27 Question Id : 61097514055 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If x=ylogxy then $\frac{dy}{dx}=$

Options :

1. $\frac{x-y}{1+\log xy}$

2. $\frac{x-y}{x(1+\log xy)}$

3. $\frac{x+y}{x(1+\log xy)}$

4. $\frac{x+y}{x\log y}$

Question Number : 28 Question Id : 61097514056 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $f(x)=\frac{x}{1+|x|}, x \in R$ *then* $f'(0)=$

Options :

1. 0

2. 1

3. 2

4. 4

Question Number : 29 Question Id : 61097514057 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $y=(x^x)^x$ then $\frac{dy}{dx}=$

Options :

1. $x.x^x(1+2\log x)$

2. $(1+2\log x)x^{(x^2+1)}$

3. $(1+2\log x)x^{x^2}$

4. $x.x^x(1-2\log x)$

Question Number : 30 Question Id : 61097514058 Question Type : MCQ Display Question

Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $x=e^{3t}\cos 3t$ then $\frac{d^2x}{dt^2}$ at $t=\frac{\pi}{2}$ is

Options :

1. $6e^{\pi}$

2. $12e^{\pi}$

3. $-12e^{\pi}$

4. $-6e^{\pi}$

Question Number : 31 Question Id : 61097514059 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The maximum area of a rectangle with perimeter 176cm is

Options :

1. 1936cm^2

2. 1854cm^2

3. 2110cm^2

4. 1735cm^2

Question Number : 32 Question Id : 61097514060 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Two positive numbers whose sum is 64 and sum of whose cubes is minimum are given by

Options :

1. 32,32

2. 48,16

3. 40,24

4. 32, 24

Question Number : 33 Question Id : 61097514061 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If u be a homogeneous function of degree n, then $x\frac{\partial^2 u}{\partial x^2}+y\frac{\partial^2 u}{\partial y^2}=$

Options :

1. nu

2. $n\frac{\partial u}{\partial x}$

3. $(n-1)\frac{\partial u}{\partial x}$

4. $n(n-1)\frac{\partial u}{\partial x}$

Question Number : 34 Question Id : 61097514062 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If u=f(x-y, y-z, z-x) then $\frac{\partial u}{\partial x}+\frac{\partial u}{\partial y}+\frac{\partial u}{\partial z}$ *is*

Options :

1. 3

2. -3

3. u

4. 0

Question Number : 35 Question Id : 61097514063 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A stone is dropped into a quite lake and waves move in a circle at a speed of 6cm/sec. At the instant when the radius of the circular wave is 16cm , the enclosed area increases at the rate

Options :

1. $100\,\pi\,cm^2$ / sec

2. $32\pi\, cm^2 / \sec$

3. $192\pi\, cm / \sec$

4. $192\pi\, cm^2 / \sec$

Question Number : 36 Question Id : 61097514064 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$$\int \frac{dx}{1+\sin x+\cos x} =$$

Options :

1. $\log\left(\tan\left(\frac{x}{2}\right)\right)+c$

2. $\log\left(1+\tan\left(\frac{x}{2}\right)\right)+c$

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

4. $\log\left(1+\sec\left(\frac{x}{2}\right)\right)+c$

Question Number : 37 Question Id : 61097514065 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$\int_0^1 \frac{\log(1+x)}{x} dx$ is

Options :

1. 0

2. $\frac{\pi}{4}$

3. $\frac{\pi^2}{4}$

4. $\frac{\pi^2}{12}$

Question Number : 38 Question Id : 61097514066 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$\int \frac{e^x - 1}{e^x + 1} dx =$

Options :

1. $2\log(e^x+1)+c$

2. $\log(e^{2x}-1)+c$

3. $2\log(e^x+1)-x+c$

4. $\log(e^{2x}+1)+c$

Question Number : 39 Question Id : 61097514067 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The mean value of the ordinate of a semi circle of radius a taken along the diameter is

Options :

1. $\frac{a\pi}{2}$

2. $2a\pi$

3. $\frac{a\pi}{4}$

4. $24a\pi$

Question Number : 40 Question Id : 61097514068 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The area enclosed by the curve $|x|+|y|=1$ is

Options :

1. 2

2. π

3. π^2

4. 1

Question Number : 41 Question Id : 61097514069 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$\int_a^b f(x)dx$ represents

Options :

1. The area bounded by the curve and the x-axis

2. The area bounded by the curve and the ordinates x=a, x=b

3. The area bounded by the curve, the x-axis and the ordinates x=a,x=b

4. The area not bounded by the curve

Question Number : 42 Question Id : 61097514070 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \sin|x|\, dx$ is

Options :

1. 0

2. 2

3. $1/2$

4. $-1/2$

Question Number : 43 Question Id : 61097514071 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Mean value of $\frac{1}{1+x^2}$ *on* $[-1,1]$ is

Options :

1. 0

2. $\frac{\pi}{2}$

3. $\frac{\pi}{4}$

4. $\frac{\pi}{3}$

Question Number : 44 Question Id : 61097514072 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The order and degree of the differential equation $y = x\frac{dy}{dx} + \frac{3}{\frac{dy}{dx}}$ is

Options :

1. 1,2

2. 2,1

3. 1,1

4. 2,2

Question Number : 45 Question Id : 61097514073 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The differential equation $y\frac{dy}{dx} + x = a$ represents

Options :

1. a set of circles whose centers are on the x-axis

2. a set of circles whose centers are on the y-axis

3. a set of parabolas

4. a set of ellipses

Question Number : 46 Question Id : 61097514074 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Solution of $\frac{dy}{dx}+\sqrt{\frac{1-y^2}{1-x^2}}=0$ is

Options :

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

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

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

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

Question Number : 47 Question Id : 61097514075 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Particular solution of $(D^2-D-2)y=\sin 2x$ is

Options :

1. $\frac{\cos 2x-3\sin 2x}{20}$

2. $\frac{\cos x}{2}$

3.

$\frac{\sin x}{2}$

4. $\frac{x \sin 2x}{8}$

Question Number : 48 Question Id : 61097514076 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The integrating factor of $y(xy+2x^2y^2)dx+x(xy-x^2y^2) =0$ is

Options :

1. $\frac{1}{3x^3y^3}$

2. $\frac{1}{x^3}$

3. $\frac{1}{y^3}$

4. $\frac{3}{x^3y^3}$

Question Number : 49 Question Id : 61097514077 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $y=Ae^x+Be^{2x}$, where A and B are arbitrary constants, then the differential equation is

Options :

1. $y_2 + 3y_1 + 2y = 0$

2. $y_2 - 3y_1 - 2y = 0$

3. $y_2 + 3y_1 - 2y = 0$

4. $y_2 - 3y_1 + 2y = 0$

Question Number : 50 Question Id : 61097514078 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The length of the sub normal at any point on $y^2=4ax$ is

Options :

1. $\frac{a}{2}$

2. $\frac{a}{3}$

3. a

4. $2a$

Physics

Section Number :	2
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes

Question Number : 51 Question Id : 61097514079 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The dimensional formula for magnetic flux is

Options :

1. $[ML^2T^{-2}A^{-1}]$

2. $[ML^3T^{-2}A^{-2}]$

3. $[M^0L^{-2}T^{-2}A^{-2}]$

4. $[ML^2T^{-1}A^2]$

Question Number : 52 Question Id : 61097514080 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The unit for angular frequency is

Options :

1. Hertz

2. Newton

3. Degrees (or) radians per second

4. Steradian

Question Number : 53 Question Id : 61097514081 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The sum of two vectors A and B is at right angles to their difference. Then

Options :

1. $A = B$

2. $A = 2B$

3. $B = 2A$

4. A and B have the same direction

Question Number : 54 Question Id : 61097514082 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The resultant of two forces, one double the other in magnitude, is perpendicular to the smaller of the two forces. The angle between the two forces is

Options :

1. 120^0

2. 60^0

3. 90^0

4. 150^0

Question Number : 55 Question Id : 61097514083 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A body starts from rest travels a distance x in first two seconds and a distance y in next two seconds. The relation between x and y is

Options :

1. $y = 4x$

2. $y = x$

3. $y = 3x$

4. $y = 2x$

Question Number : 56 Question Id : 61097514084 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Two bodies are projected from the ground with the same speed. If the angles of their projection from the ground are 45^0 and 15^0 respectively, the ratio of their ranges is

Options :

1. $1 : 2$

2. $2:1$

3. $\sqrt{3}:2$

4. $1:\sqrt{2}$

Question Number : 57 Question Id : 61097514085 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Two bodies of different masses are dropped from heights of 2 m and 8 m respectively,

then the ratio of the time taken by them is _____.

Options :

1. $1:4$

2. $1:1$

3. $1:2$

4. $1:3$

Question Number : 58 Question Id : 61097514086 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The angle of projection of a projectile for which the horizontal range and maximum

height are equal is

Options :

1. $\sin^{-1}(4)$

2. $\tan^{-1}(4)$

3. $\cos^{-1}(4)$

4. $\tan^{-1}(8)$

Question Number : 59 Question Id : 61097514087 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If μ_k is the coefficient of kinetic friction, μ_r is the coefficient of rolling friction and μ_s is the coefficient of static friction, then

Options :

1. $\mu_s > \mu_k > \mu_r$

2. $\mu_s < \mu_k < \mu_r$

3. $\mu_s < \mu_r < \mu_k$

4. $\mu_s > \mu_r > \mu_k$

Question Number : 60 Question Id : 61097514088 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A boy of mass 40 kg is climbing a vertical pole at a constant speed. If the coefficient of friction between his palms and the pole is 0.8 and $g = 10\ m/s^2$, the horizontal force that he is applying on the pole is

Options :

1. 300 N

2. 400 N

3. 500 N

4. 600 N

Question Number : 61 Question Id : 61097514089 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

How many 2.5 kg bricks can a man carry up a 3.6 meter staircase in one hour if he works at an average rate of 9.8 watt?

Options :

1. 800

2. 200

3. 600

4. 400

Question Number : 62 Question Id : 61097514090 Question Type : MCQ Display Question

Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A spring of force constant 800 N m^{-1} has an extension of 5 cm. The work done in extending it from 5 cm to 15 cm is

Options :

1. 16 J

2. 8 J

3. 32 J

4. 24 J

Question Number : 63 Question Id : 61097514091 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Among the following sources of energy, for which source, sun is not a chief source of energy

Options :

1. Hydroelectric power plant

2. Ocean thermal energy

3. Tidal energy

4. Biomass

Question Number : 64 Question Id : 61097514092 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A particle executes simple harmonic motion along a straight line so that its period is 12 seconds .
The time it takes in traversing a distance equal to half of its amplitude from its equilibrium position is

Options :

1. 6 seconds

2. 4 seconds

3. 2 seconds

4. 1 second

Question Number : 65 Question Id : 61097514093 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A particle executes simple harmonic motion with a frequency f. The frequency with which the potential energy oscillates is

Options :

1. f

2. $f/2$

3. $2f$

4. zero

Question Number : 66 Question Id : 61097514094 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A tuning fork A of frequency 512 Hz produces 4 beats per second when sounded with a tuning fork B. Due to filing of the prongs of the tuning fork B, the number of the beats per second becomes 6. The actual frequency of B is

Options :

1. 516 Hz

2. 508 Hz

3. 512 Hz

4. 500 Hz

Question Number : 67 Question Id : 61097514095 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A car sounding a horn of frequency 1000 Hz passes an observer. The ratio of frequencies of the horn noted by the observer before and after passing of car is 11: 9. If the speed of sound is v, then the speed of the car is

Options :

1. v/10

2. v/20

3. v/2

4. v/5

Question Number : 68 Question Id : 61097514096 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The reverberation time is

Options :

1. Directly proportional to sound absorption

2. Inversely proportional to volume

3. Inversely proportional to sound absorption

4. Directly proportional to pressure

Question Number : 69 Question Id : 61097514097 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The pressure P_1 and density d_1 of a diatomic gas ($\gamma = 7/5$) change to P_2 and d_2 during an adiabatic operation. If $\frac{d2}{d1} = 32$, then $\frac{P2}{P1}$ is

Options :

1. 125

2. 128

3. 32

4. 256

Question Number : 70 Question Id : 61097514098 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The first law of thermodynamics is concerned with conservation of

Options :

1. No. of molecules

2. No. of moles

3. Energy

4. Temperature

Question Number : 71 Question Id : 61097514099 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

When ice cube melts into water,

Options :

1. Entropy decreases and internal energy decreases

2. Entropy decreases and internal energy increases

3. Entropy increases and internal energy increases

4. Entropy increases and internal energy decreases

Question Number : 72 Question Id : 61097514100 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For nitrogen, C_P-C_V = x and for argon, C_P-C_V = y. The relation between x and y is

Options :

1. $x = y$

2. $x = 7y$

3. $y = 7x$

4. $x = y/2$

Question Number : 73 Question Id : 61097514101 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A Carnot's engine extracts 1.5×10^3 kilocalories of heat from a reservoir at 627^0C and exhausts it to a sink maintained at 27^0C. The work performed by the engine is

Options :

1. 4.2 J

2. 4.2×10^2 J

3. 4.2×10^{-6} J

4. 4.2×10^6 J

Question Number : 74 Question Id : 61097514102 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

At critical angle, the angle of refraction is

Options :

1. 45^0

2. 90^0

3. 180^0

4. 60^0

Question Number : 75 Question Id : 61097514103 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Superconductivity is due to the formation of

Options :

1. Domain walls

2. Electron-hole pairs

3. Hysteresis

4. Cooper pairs

Chemistry

Section Number :	3
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes

Question Number : 76 Question Id : 61097514104 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The atomic weight and atomic number of an element are A and Z respectively.

The number of neutrons in the atom of that element is.

Options :

1. A

2. Z

3. $Z + A$

4. $A - Z$

Question Number : 77 Question Id : 61097514105 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The two electrons present in an orbital are distinguished by :

Options :

1. Principal Quantum number

2. Spin Quantum number

3. Magnetic Quantum number

4. Azimutal Quantum number

Question Number : 78 Question Id : 61097514106 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The order of increasing energies of the orbitals follows:

Options :

1. 3s, 3p, 3d, 4s, 4p

2. 3s, 3p, 4s, 4p, 3d

3. 3s, 3p, 4s, 3d, 4p

4. 3s, 3p, 3d, 4p, 4s

Question Number : 79 Question Id : 61097514107 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Ionic bond is formed by

Options :

1. Sharing of electrons

2. Donating of electron

3. Transfer of Electrons

4. Donating of electron pair

Question Number : 80 Question Id : 61097514108 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The total number of electrons that take part in forming bonds in N_2 is

Options :

1. 2

2. 4

3. 10

4. 6

Question Number : 81 Question Id : 61097514109 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Sum of mole fractions of the two components of a solution is always

Options :

1. more than one

2. less than one

3. exactly one

4. not fixed

Question Number : 82 Question Id : 61097514110 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A 10N Solution stands for

Options :

1. Normal solution

2. Decanormal solution

3. Decinormal solution

4. Seminormal solution

Question Number : 83 Question Id : 61097514111 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The molarity of pure water is

Options :

1. 55.6

2. 50

3. 100

4. 18

Question Number : 84 Question Id : 61097514112 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

According to Bronsted –Lowry theory which one of the following is considered as an acid?

Options :

1. OH^-

2. HSO_4^-

3. H_3O^+

4. Cl-

Question Number : 85 Question Id : 61097514113 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The pH of a solution containing 10^{-6} HCl is

Options :

1. 4

2. 6

3. 8

4. 10

Question Number : 86 Question Id : 61097514114 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Calculate the quantity of electricity that will be required for liberating 710g of chlorine gas by the electrolysis of a concentrated solution of NaCl.

Options :

1. 10 faradys

2. 20 faradays

3. 5 faradays

4. 18 faradays

Question Number : 87 Question Id : 61097514115 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The standard reduction potentials (E^0)for the half reactions are as given below

$Zn = Zn^{2+} + 2e^-$: $E^0 = +0.76V$

$Fe = Fe^{2+} + 2e^-$; $E^0 = +0.41V$

The EMF for the cell reaction $Fe^{2+} + Zn \rightarrow Zn^{2+} + Fe$ is

Options :

1. -0.35 V

2. +0.35 V

3. +1.17 V

4. -1.17 V

Question Number : 88 Question Id : 61097514116 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The best electronic conductor is

Options :

1. Copper

2. Aluminium

3. Zinc

4. Silver

Question Number : 89 Question Id : 61097514117 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The electric charge for electrode deposition of one gram equivalent of a substance is

Options :

1. Charge on one mole of electrons

2. One ampere per second

3. 96500 coulombs per second

4. One ampere for one hour

Question Number : 90 Question Id : 61097514118 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Hardness of water is expressed in terms of ------- equivalents

Options :

1. $MgCO_3$

2. $CaCO_3$

3. Na_2CO_3

4. K_2CO_3

Question Number : 91 Question Id : 61097514119 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is a powerful disinfectant?

Options :

1. O_2

2. Cl_2

3. $CaOCl_2$

4. N_2

Question Number : 92 Question Id : 61097514120 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The process of killing pathogenic bacteria in water is called

Options :

1. Softening

2. Osmosis

3. Sterilization

4. Reverse osmosis

Question Number : 93 Question Id : 61097514121 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The metal oxide film that can easily undergo corrosion is

Options :

1. Stable

2. Porous

3. Volatile

4. Unstable

Question Number : 94 Question Id : 61097514122 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In galvanised articles, which metal protects the base metal?

Options :

1. Fe

2. Cu

3. Zn

4. Pb

Question Number : 95 Question Id : 61097514123 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is thermosetting plastic?

Options :

1. PVC

2. Bakelite

3. Polystyrene

4. Teflon

Question Number : 96 Question Id : 61097514124 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Natural rubber is a polymer of:

Options :

1. Isoprene

2. Ethylene

3. Vinyl chloride

4. Styrene

Question Number : 97 Question Id : 61097514125 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Ebonite is a :

Options :

1. PVC

2. Synthetic rubber

3. Highly vulcanised rubber

4. Polystyrene

Question Number : 98 Question Id : 61097514126 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option

Orientation : Vertical

The coal having the highest ranking is

Options :

1. Anthracite

2. Peat

3. Lignite

4. Bituminous

Question Number : 99 Question Id : 61097514127 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following causes Minamata disease

Options :

1. Argan

2. Sulphur

3. Mercury

4. Nitrogen

Question Number : 100 Question Id : 61097514128 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a green house gas?

Options :

1. Carbon dioxide

2. Methane gas

3. Water vapour

4. Nitrogen gas

Electronics and Communication Engineering

Section Number :	4
Mandatory or Optional :	Mandatory
Number of Questions :	100
Number of Questions to be attempted :	100
Section Marks :	100
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes

Question Number : 101 Question Id : 61097514129 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

At room temperature the current in an intrinsic semiconductor is due to

Options :

1. Electrons and Ions

2. Holes and Ions

3. Electrons only

4. Electrons and Holes

Question Number : 102 Question Id : 61097514130 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The breakdown voltage in zener diode

Options :

1. is almost constant

2. is very small

3. may destroy the diode

4. decrease with increase in current

Question Number : 103 Question Id : 61097514131 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which circuit is used for obtaining desired output waveform in operational amplifier?

Options :

1. Clamper

2. Clipper

3. Peak amplifier

4. Sample and hold

Question Number : 104 Question Id : 61097514132 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The diode in a half wave rectifier has a forward resistance R_F. The voltage is $V_m \sin\omega t$ and the load resistance is RL. The DC current is given by

Options :

1. $V_m/\sqrt{2}R_L$

2. $V_m/(R_F+R_L)\pi$

3. $2V_m/\sqrt{\pi}$

4. V_m/R_L

Question Number : 105 Question Id : 61097514133 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If input frequency is 50Hz for a full wave rectifier, the ripple frequency of it would be

Options :

1. 100Hz

2. 50Hz

3. 25Hz

4. 500Hz

Question Number : 106 Question Id : 61097514134 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The relation between α and β is

Options :

1. $\beta=\alpha/(1-\alpha)$

2. $\alpha= \beta/(1+\beta)$

3. $\beta=\alpha/(1+\alpha)$

4. $\alpha= \beta/(1- \beta)$

Question Number : 107 Question Id : 61097514135 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The application of a CC configured transistor is_____

Options :

1. voltage multiplier

2. level shifter

3. rectification

4. impedance matching

Question Number : 108 Question Id : 61097514136 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Conduction electrons have more mobility than holes because they

Options :

1. are lighter

2. experience collisions less frequency

3. have negative charge

4. need less energy to move them

Question Number : 109 Question Id : 61097514137 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The depletion region in a semiconductor p-n junction diode has

Options :

1. Electrons and holes

2. positive and negative ions on either side

3. Neither electrons nor ions

4. No electrons

Question Number : 110 Question Id : 61097514138 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Thermal runaway will take place if the quiescent point is such that

Options :

1. $V_{CE} > 1/2\ V_{CC}$

2. $V_{CE} < V_{CC}$

3. $V_{CE} < 2\ V_{CC}$

4. $V_{CE} < 1/2\ V_{CC}$

Question Number : 111 Question Id : 61097514139 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The voltage gain of an amplifier without feedback and with negative feedback respectively are 100 and 20. The percentage of negative feedback (β) would be

Options :

1. 4%

2. 5%

3. 20%

4. 80%

Question Number : 112 Question Id : 61097514140 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A 1 msec pulse can be stretched to 1 sec pulse by using

Options :

1. An astable multivibrator

2. A monostable multivibrator

3. A bistable multivibrator

4. A Schmitt trigger circuit

Question Number : 113 Question Id : 61097514141 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For an Op-Amp with negative feedback, the output is

Options :

1. Equal to the input

2. Increased

3. Fed back to the inverting input

4. fed back to the non-inverting input

Question Number : 114 Question Id : 61097514142 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

An ideal amplifier has

Options :

1. Infinite output impedance

2. Zero input impedance

3. Infinite bandwidth

4. Zero frequency

Question Number : 115 Question Id : 61097514143 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

An Oscillator converts

Options :

1. A.C. power into D.C. power

2. D.C. power into A.C. power

3. Mechanical power into A.C. power

4. Mechanical power into D.C.power

Question Number : 116 Question Id : 61097514144 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If there are 8 nodes in network, we can get ____ number of equations in the nodal analysis.

Options :

1. 9

2. 8

3. 7

4. 6

Question Number : 117 Question Id : 61097514145 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Under the condition of maximum power transfer, the efficiency is?

Options :

1. 100%

2. 10 %

3. 30%

4. 50%

Question Number : 118 Question Id : 61097514146 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Quality factor-Q of a resonant circuit signifies

Options :

1. Loss in the resonant circuit

2. Gain in the resonant circuit

3. Magnetic energy stored in the circuit

4. Electric energy stored in the circuit

Question Number : 119 Question Id : 61097514147 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

What is the Standing wave ratio if a 75Ω antenna load is connected to a 50Ω transmission line?

Options :

1. 1

2. 2

3. 1.5

4. 1.43

Question Number : 120 Question Id : 61097514148 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In a series resonance circuit, series resonance occurs when?

Options :

1. $X_L = 1$

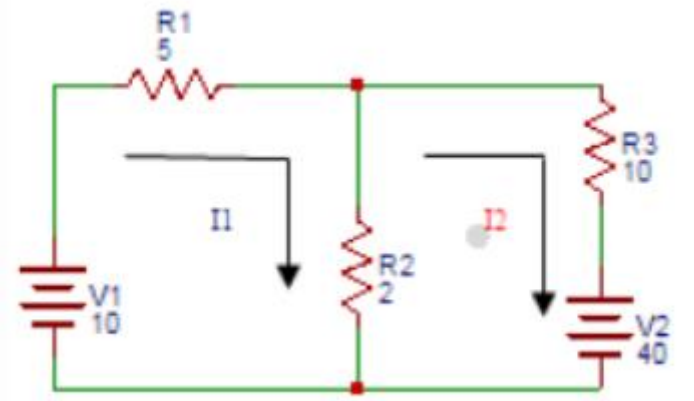
2. $X_C = 1$

3. $X_L = X_C$

4. $X_L = 0$

Question Number : 121 Question Id : 61097514149 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Find current through R_2 resistor



Options :

1. 3

2. 3.25

3. 3.5

4. 3.75

Question Number : 122 Question Id : 61097514150 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Thevenin's theorem is true for _____

Options :

1. Linear networks

2. Non-Linear networks

3. Both linear networks and nonlinear networks

4. Neither linear networks nor non-linear networks

Question Number : 123 Question Id : 61097514151 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

When VSWR is 3, the magnitude of the reflection coefficient will be

Options :

1. 1/4

2. 1/3

3. ½

4. 1

Question Number : 124 Question Id : 61097514152 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Alternating current is measured by

Options :

1. Induction type ammeter

2. Permanent magnet type ammeter

3. Electrostatic ammeter

4. Moving iron repulsion type voltage meter

Question Number : 125 Question Id : 61097514153 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

An ammeter has a resistance of 50 Ω and a shunt of 0.01 Ω. The deflection is 'Θ'. If the shunt resistance is increased to 0.02 Ω, the deflection will be

Options :

1. Θ

2. 2Θ

3. 0.5Θ

4. 0.25Θ

Question Number : 126 Question Id : 61097514154 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The input impedance of CRO is about

Options :

1. zero

2. 10 Ω

3. 100 Ω

4. 1M Ω

Question Number : 127 Question Id : 61097514155 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Q meter operator is the principle of

Options :

1. series resonance

2. current resonance

3. self – inductance

4. eddy currents

Question Number : 128 Question Id : 61097514156 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A voltmeter using thermocouples measures

Options :

1. rms value

2. peak value

3. average value

4. peak to peak value

Question Number : 129 Question Id : 61097514157 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If the full-scale deflection current of a multimeter is 50 μA, its sensitivity is

Options :

1. 10 kΩ/V

2. 100 kΩ/V

3. 50 kΩ/V

4. 20 kΩ/V

Question Number : 130 Question Id : 61097514158 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For display of signal pattern what type voltage is applied to the horizontal plates of a CRO

Options :

1. Sinusoidal

2. Rectangular

3. Saw tooth

4. D.C. voltage

Question Number : 131 Question Id : 61097514159 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The material used to coat inside the face of CRT screen is

Options :

1. Carbon

2. Sulphur

3. Silicon

4. Phosphorous

Question Number : 132 Question Id : 61097514160 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A CRO can display

Options :

1. only AC signals

2. only DC Signals

3. only Time invariant signals

4. Both AC and DC Signals

Question Number : 133 Question Id : 61097514161 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

An ideal ammeter resistance is

Options :

1. Low

2. Zero

3. Infinite

4. High

Question Number : 134 Question Id : 61097514162 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For the SCR to remain in the ON (conducting) state

Options :

1. gate signal is continuously required

2. no continuous gate signal is required

3. no forward anode-cathode voltage is required

4. negative gate signal is continuously required

Question Number : 135 Question Id : 61097514163 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A dual converters has

Options :

1. two full converters in series

2. two half converters in series

3. two full converters in anti-parallel

4. two half converters in anti-parallel

Question Number : 136 Question Id : 61097514164 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

IGBT & BJT both posses___

Options :

1. low on-state power losses

2. high on-state power losses

3. low switching losses

4. high input impedance

Question Number : 137 Question Id : 61097514165 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In IGBT, the p^+ layer connected to the collector terminal is called as the

Options :

1. drift layer

2. injection layer

3. body layer

4. collector Layer

Question Number : 138 Question Id : 61097514166 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The voltage in a single phase half wave inverter varies between

Options :

1. Vs and 0

2. Vs/2 and 0

3. Vs/2 and –Vs/2

4. Vs and –Vs

Question Number : 139 Question Id : 61097514167 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Choppers converts

Options :

1. AC to DC

2. DC to AC

3. DC to DC

4. AC to AC

Question Number : 140 Question Id : 61097514168 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A cycloconverter is a

Options :

1. one stage power converter

2. one stage voltage converter

3. one stage frequency converter

4. Two stage voltage converter

Question Number : 141 Question Id : 61097514169 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The single phase mid-point type cycloconverter uses _____ number of SCRs.

Options :

1. 4

2. 8

3. 6

4. 10

Question Number : 142 Question Id : 61097514170 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A wire strain gauge has a gauge factor of 2, resistance of 125 ohms and length of 1m.If the length of wire changes by 0.005m, change in resistance will be

Options :

1. 0.25

2. 0.5

3. 1.25

4. 2.5

Question Number : 143 Question Id : 61097514171 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

LVDT windings are wound on

Options :

1. Steel sheets

2. Aluminum

3. Ferrite

4. Copper

Question Number : 144 Question Id : 61097514172 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The ratio between the modulating signal voltage and the carrier voltage is called?

Options :

1. Amplitude modulation

2. Modulation frequency

3. Modulation index

4. Ratio of modulation

Question Number : 145 Question Id : 61097514173 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

When does over-modulation occur?

Options :

1. Modulating signal voltage < Carrier voltage

2. Modulating signal voltage > Carrier voltage

3. Modulating signal voltage = Carrier voltage

4. Modulating signal voltage = 0

Question Number : 146 Question Id : 61097514174 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For 100% modulation, power in each sideband is _____ of that of carrier?

Options :

1. 50%

2. 70%

3. 60%

4. 25%

Question Number : 147 Question Id : 61097514175 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Maximum power efficiency of an AM modulator is

Options :

1. 25%

2. 50%

3. 33%

4. 100%

Question Number : 148 Question Id : 61097514176 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

What is the disadvantage of FM over AM?

Options :

1. high modulating power is needed

2. requires high output power

3.

high noise is produced

4. large bandwidth required

Question Number : 149 Question Id : 61097514177 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If the modulating frequency of a carrier wave varies between 700 Hz and 7 KHz, find it's AM bandwidth?

Options :

1. 10 KHz

2. 23 KHz

3. 17.3 KHz

4. 12.6 KHz

Question Number : 150 Question Id : 61097514178 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Audio frequency range lies between

Options :

1. 2 MHz to 20 MHz

2. 20 Hz to 20 KHz

3. 20 KHz to 200 KHz

4. 20 MHz to 200 MHz

Question Number : 151 Question Id : 61097514179 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Signal to quantization noise ratio in PCM system depends on

Options :

1. sampling rate

2. signal bandwidth

3. number of quantization levels

4. bit rate

Question Number : 152 Question Id : 61097514180 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Aliasing refers to

Options :

1. Sampling of signals less than at Nyquist rate

2. Sampling of signals at Nyquist rate

3. Sampling of signals greater than at Nyquist rate

4. Unsampled the original signal

Question Number : 153 Question Id : 61097514181 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Standard intermediate frequency used for AM receiver is

Options :

1. 455 MHz

2. 455 KHz

3. 455 Hz

4. 20 KHz

Question Number : 154 Question Id : 61097514182 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which statement is true about multiplexing?

Options :

1. it is used to reduce the bandwidth

2. it is used to combine multiple data streams over a single data channel

3. it is used to allow multiple data streams over multiple channels

4. it is used to match and pass the same frequency signal

Question Number : 155 Question Id : 61097514183 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In a super heterodyne receiver, the IF is 455 KHz, if it is tuned to 1200 KHz, the image frequency will be

Options :

1. 1655 KHz

2. 745 KHz

3. 2110 KHz

4. 910 KHz

Question Number : 156 Question Id : 61097514184 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A 10 KW carrier is sinusoidally modulated by two carriers corresponding to a modulation index of 30% and 40% respectively. The total radiated power is

Options :

1. 11.25 KW

2. 12.5 KW

3. 15 KW

4. 17 KW

Question Number : 157 Question Id : 61097514185 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Signal $x(t)=\sin 2\pi 10^3 t+2\sin 2\pi 660t$. At what sampling frequency should this signal be sampled to avoid aliasing?

Options :

1. 2x660Hz

2. 2x1000Hz

3. 2[1000+660]Hz

4. 2[1000-660]Hz

Question Number : 158 Question Id : 61097514186 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

13 dBm is equivalent to

Options :

1. 2 mW

2. 20 W

3. 20 mW

4. 2 MW

Question Number : 159 Question Id : 61097514187 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If the antenna increases 3.3 times how much does the radiated power increase?

Options :

1. 3.3 times

2. 10.89 times

3. 9.9 times

4. 6.6 times

Question Number : 160 Question Id : 61097514188 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

What is the front-to-back ratio of an antenna which radiates 500 watts in a northernly direction and 50 watts in a southernly direction?

Options :

1. 2500 dB

2. 10 dB

3. 100 dB

4. 20 dB

Question Number : 161 Question Id : 61097514189 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which antenna does not use the ground?

Options :

1. Marconi

2. Rhombic

3. Hertz

4. Yagi

Question Number : 162 Question Id : 61097514190 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The modes of propagation supported by a rectangular wave guide is:

Options :

1. TM, TEM, TE modes

2. TM, TE

3. TM, TEM

4. TE, TEM

Question Number : 163 Question Id : 61097514191 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In TE10 mode of wave propagation in a rectangular waveguide, if the broader dimension of the waveguide is 4 cm, then the cutoff wavelength for that mode is:

Options :

1. 8 cm

2. 6 cm

3. 4 cm

4. 2 cm

Question Number : 164 Question Id : 61097514192 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option

Orientation : Vertical

The lowest mode of TM wave propagation is:

Options :

1. TM_{10} mode

2. TM_{01} mode

3. TM_{11} mode

4. TM_{12} mode

Question Number : 165 Question Id : 61097514193 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Single cavity klystron tube that operates as an oscillator by using a reflector electrode after the cavity is

Options :

1. Backward wave oscillator

2. Reflex klystron

3. Travelling wave tube

4. Magnetrons

Question Number : 166 Question Id : 61097514194 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The transmitter-receiver combination in the satellite is known as

Options :

1. Relay

2. Repeater

3. Transponder

4. Duplexer

Question Number : 167 Question Id : 61097514195 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Why are VHF, UHF, and microwave signals used in satellite communication?

Options :

1. More bandwidth

2. More spectrum space

3. Are not diffracted by the ionosphere

4. Economically viable

Question Number : 168 Question Id : 61097514196 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Multimode step index fiber has

Options :

1. Large core diameter & large numerical aperture

2. Large core diameter and small numerical aperture

3. Small core diameter and large numerical aperture

4. Small core diameter & small numerical aperture

Question Number : 169 Question Id : 61097514197 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The decimal equivalent of the octal number $(645)_8$ is

Options :

1. $(450)_{10}$

2. $(451)_{10}$

3. $(421)_{10}$

4. $(501)_{10}$

Question Number : 170 Question Id : 61097514198 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The expression for Absorption law is given by

Options :

1. $A + AB = A$

2. $A + AB = B$

3. $AB + AA' = A$

4. $A + B = B + A$

Question Number : 171 Question Id : 61097514199 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

How many AND, OR and EXOR gates required for the configuration of Full-Adder

Options :

1. 1, 2, 2

2. 2, 1, 2

3. 3, 1, 2

4. 4, 0, 1

Question Number : 172 Question Id : 61097514200 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

How much storage capacity does each stage in a shift register represent?

Options :

1. One bit

2. Two bits

3. Four bits

4. Eight bits

Question Number : 173 Question Id : 61097514201 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is volatile in nature?

Options :

1. ROM

2. RAM

3. PROM

4. EROM

Question Number : 174 Question Id : 61097514202 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Find out the integrating type analog to digital converter?

Options :

1. Flash type ADC

2. Dual slope ADC

3. Counter type ADC

4. Successive Approximation ADC

Question Number : 175 Question Id : 61097514203 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In a signed magnitude representation the binary equivalent of 22.5625 is

Options :

1. 010110.1011

2. 010110.1001

3. 110101.1001

4. 110110.1001

Question Number : 176 Question Id : 61097514204 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Minimum number of J-K flip flops needed to construct a BCD counter is

Options :

1. 2

2. 3

3. 4

4. 5

Question Number : 177 Question Id : 61097514205 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which one of the following can be used as parallel to series converter?

Options :

1. Decoder

2. Digital Counter

3. Multiplexer

4. De multiplexer

Question Number : 178 Question Id : 61097514206 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The initial state of mod-16 down counter is 0110. After 37 clock pulses, the state of the counter will be

Options :

1. 1011

2. 0110

3. 0101

4. 0001

Question Number : 179 Question Id : 61097514207 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

8051 series has how many 16 bit registers?

Options :

1. 2

2. 3

3. 1

4. 0

Question Number : 180 Question Id : 61097514208 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

How are the status of the carry, auxiliary carry and parity flag affected if the instructions
MOV A,#9C
ADD A,#64H are executed.

Options :

1. CY=0,AC=0,P=0

2. CY=1,AC=1,P=0

3. CY=0,AC=1,P=0

4. CY=1,AC=1,P=1

Question Number : 181 Question Id : 61097514209 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The number of registers and flags in 8086 are

Options :

1. 13 and 5 respectively

2. 9 and 5 respectively

3. 13 and 9 respectively

4. 9 and 9 respectively

Question Number : 182 Question Id : 61097514210 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

JZ, JNZ, DJNZ, JC, JNC instructions monitor the bits of which register?

Options :

1. DPTR

2. B

3. A

4. PSW

Question Number : 183 Question Id : 61097514211 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the ports of 8051 act as the 16 bit address lines for transferring data through it?

Options :

1. PORT 0 and PORT 1

2. PORT 1 and PORT 2

3. PORT 0 and PORT 2

4. PORT 1 and PORT 3

Question Number : 184 Question Id : 61097514212 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Port C of 8255 can function independently as

Options :

1. input port only

2. output port only

3. either input or output ports

4. both input and output ports

Question Number : 185 Question Id : 61097514213 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In 8257 (DMA), each of the four channels has

Options :

1. a pair of two 8-bit registers

2. a pair of two 16-bit registers

3. one 16-bit register

4. one 8-bit register

Question Number : 186 Question Id : 61097514214 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The instruction, MOV AX, 1234H is an example of

Options :

1. register addressing mode

2. direct addressing mode

3. immediate addressing mode

4. based indexed addressing mode

Question Number : 187 Question Id : 61097514215 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Because of Pentium's superscalar architecture, the number of instructions that are executed per clock cycle is

Options :

1. 1

2. 2

3. 3

4. 4

Question Number : 188 Question Id : 61097514216 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The unit that is used to implement the multiple branch prediction in Pentium-Pro is

Options :

1. Branch target buffer

2. bus interface unit

3. Control unit

4. branch instruction register

Question Number : 189 Question Id : 61097514217 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

AFC stands for

Options :

1. Audio Frequency Control

2. Automatic Frequency Control

3. Amplitude Frequency Control

4. Adjacent Frequency Control

Question Number : 190 Question Id : 61097514218 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The purpose of sync separator in television receiver is :

Options :

1. To separate horizontal and vertical sync pulses

2. To separate sync pulses from associated noise

3. To separate sync pulses from the CVS

4. video signal

Question Number : 191 Question Id : 61097514219 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Automatic correction of colour error is possible in

Options :

1. NTSC

2. PAL

3. SECAM

4. Audio

Question Number : 192 Question Id : 61097514220 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Sound system uses _____ in PAL transmitter

Options :

1. AM

2. FM

3. DSB

4. VSB

Question Number : 193 Question Id : 61097514221 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If the frequency of a sound wave is 20 Hz, the time period is

Options :

1. 20 secs

2. 2 secs

3. 0.2 secs

4. 0.05 secs

Question Number : 194 Question Id : 61097514222 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The inner core of an optical fiber is _____in composition.

Options :

1. glass or plastic

2. copper

3. bimetallic

4. liquid

Question Number : 195 Question Id : 61097514223 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

What is the major factor that makes coaxial cable less susceptible to noise than twisted-pair cable?

Options :

1. inner conductor

2. diameter of cable

3. outer conductor

4. insulating material

Question Number : 196 Question Id : 61097514224 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A topology that involves Tokens is

Options :

1. Star

2. Ring

3. Bus

4. Daisy Chaining

Question Number : 197 Question Id : 61097514225 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The number of layers in ISO OSI reference model is

Options :

1. 4

2. 5

3. 6

4. 7

Question Number : 198 Question Id : 61097514226 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Bluetooth is the wireless technology for

Options :

1. local area network

2. personal area network

3. metropolitan area network

4. wide area network

Question Number : 199 Question Id : 61097514227 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The domain name system is maintained by

Options :

1. distributed database system

2. a single server

3. a single computer

4. Mail transfer agent

Question Number : 200 Question Id : 61097514228 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which protocol provides e-mail facility among different hosts?

Options :

1. FTP

2. Post Office Protocol (POP)

3. TELNET

4. SMTP