Andhra Pradesh State Council of Higher Education

Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	Electronics and Communication Engineering 06th May 2025 Shift 2
Subject Name :	Electronics and Communication Engineering
Creation Date :	2025-05-06 20:31:52
Duration :	180
Total Marks :	200
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
Change Font Color :	No
Change Background Color :	No
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Electronics and Communication Engineering

Group Number :	1
Group Id :	89040175
Group Maximum Duration :	0
Group Minimum Duration :	180
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	200

Mathematics

Section Id :	890401291
Section Number :	1
Section type :	Online

Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	50
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	890401315
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 89040114813 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Order of the matrix $\begin{bmatrix} 1 & 6 \\ 2 & 0 \\ 7 & -1 \end{bmatrix}$ is

Options :

1. ✖ 1×3

2. ✔ 3×2

3. ✖ 2×2

4. ✖ 3×3

Question Number : 2 Question Id : 89040114814 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If two rows (or columns) of a determinant of order 3 are identical then the value of determinant is

Options :

1. ✔ 0

2. ✖ 1

3. ✖ 1

4. ✖ -1

Question Number : 3 Question Id : 89040114815 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

Co-factor of -4 in $\begin{vmatrix} 1 & 2 & 3 \\ -4 & 3 & 6 \\ 2 & -7 & 9 \end{vmatrix}$ is

Options :

1. ✖ 3

2. ✖ 11

3. ✖ 39

4. ✔ -39

Question Number : 4 Question Id : 89040114816 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The Matrix $\begin{bmatrix} a & h & g \\ h & b & f \\ g & f & c \end{bmatrix}$ is

Options :

1. ✖ skew symmetric

2. ✔ Symmetric

3. ✖ symmetric if a=b

4. ✖ Skew symmetric if b=c

Question Number : 5 Question Id : 89040114817 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $A = \begin{bmatrix} 0 & 0 & 1 \\ 0 & 1 & 0 \\ 1 & 0 & 0 \end{bmatrix}$ then $(A^{-1}) =$

Options :

1. ✔ A

2. ✖ $-A$

3. ✖ -2A

4. ✖ 0

Question Number : 6 Question Id : 89040114818 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If deg f(x)≥deg g(x), then the rational fraction $f(x)/g(x)$ is called

Options :

1. ✖ Polynomial

2. ✖ Proper fraction

3. ✔ Improper fraction

4. ✖ irrational fraction

Question Number : 7 Question Id : 89040114819 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $\frac{3x}{x^2+x-2} = \frac{A}{x+2} + \frac{B}{x-1}$ then the ordered pair (A, B) is

Options :

1. ✖ $(1, 2)$

2. ✖ $(-1, 2)$

3. ✖ $(2, -1)$

4. ✔ $(2, 1)$

Question Number : 8 Question Id : 89040114820 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $\tan A = \frac{4}{3}$ then the value of $\cos 2A$ is

Options :

1. ✔ $-\frac{7}{25}$

2. ✖ $-\frac{7}{24}$

3. ✖ $-\frac{24}{7}$

4. ✖ $-\frac{7}{25}$

Question Number : 9 Question Id : 89040114821 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $-1 \leq x \leq 1$, then $\cos^{-1} x + \sin^{-1} x =$

Options :

1. ✖ $-\frac{\pi}{2}$

2. ✖ $\frac{\pi}{4}$

3. ✔ $\frac{\pi}{2}$

4. ✖ $-\frac{\pi}{16}$

Question Number : 10 Question Id : 89040114822 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$\text{Sin } 15^0 =$

Options :

1. ✖ $\frac{\sqrt{3}-1}{\sqrt{3}+2}$

2. ✔ $\frac{\sqrt{6}-\sqrt{2}}{4}$

3. ✖ $\sqrt{6} \pm 1$

4. ✖ $\frac{\sqrt{6}+\sqrt{2}}{4}$

Question Number : 11 Question Id : 89040114823 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $2\cos\theta = x + \frac{1}{x}$ then $2\cos 3\theta =$

Options :

1. ✖ $x^3 - \frac{1}{x^3}$

2. ✖ $-x^3 + \frac{1}{x^3}$

3. ✔ $x^3 + \frac{1}{x^3}$

4. ✖ $x^2 + \frac{1}{x^3}$

Question Number : 12 Question Id : 89040114824 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In any ΔABC, $\tan\frac{B+C}{2} =$

Options :

1. ✖ $c\cot\frac{A}{2}$

2. ✔ $\cot\frac{A}{2}$

3. ✖ $\tan\frac{A}{2}$

4. ✖ $\tan\frac{C}{2}$

Question Number : 13 Question Id : 89040114825 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

In a triangle ΔABC, the value of $\cos\left(\frac{B+C}{2}\right)$ in terms of angle A

Options :

1. ✖ $\sqrt{\sin\frac{A}{2}}$

2. ✖ $\sqrt{A/2}$

3. ✔ $\sin\frac{A}{2}$

4. ✖ $\sqrt{2A}$

Question Number : 14 Question Id : 89040114826 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The value of $\sin 45^0$ is

Options :

1. ✖ $\sqrt{2}$

2. ✖ 1

3. ✖ 0

4. ✔ $1/\sqrt{2}$

Question Number : 15 Question Id : 89040114827 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

In a ΔABC, if $a = 13, b = 14$ and $c = 15$ then the value of $\tan\left(\frac{A}{2}\right)$ is

Options :

1. ✖ $\frac{1}{4}$

2. ✖ $\frac{3}{4}$

3. ✔ $\frac{1}{2}$

4. ✖ $\frac{1}{6}$

Question Number : 16 Question Id : 89040114828 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a ΔABC, $\sum a^3 \cos(B - C) =$

Options :

1. ✖ 4abc

2. ✔ 3abc

3. ✖ 4a+b+c

4. ✖ abc

Question Number : 17 Question Id : 89040114829 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Principle value of $\cot^{-1}(-1)$ is

Options :

1. ✖ $\frac{2\pi}{3}$

2. ✖ $-\frac{2\pi}{3}$

3. ✖ π

4. ✔ $\frac{3\pi}{4}$

Question Number : 18 Question Id : 89040114830 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$(-1+2\mathrm{i})+\left(\frac{1}{2}-\mathrm{i}\right)=$

Options :

1. ✖ $\frac{1}{2}+\mathrm{i}$

2. ✖ $-\frac{1}{2}-\mathrm{i}$

3. ✔ $-\frac{1}{2}+\mathrm{i}$

4. ✖ $\frac{1}{2}\pm\mathrm{i}$

Question Number : 19 Question Id : 89040114831 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

For any real θ, $(\cos\theta+i\sin\theta)(\cos\theta-i\sin\theta)=$

Options :

1. ✔ 1

2. ✖ -1

3. ✖ 0

4. ✖ $4i$

Question Number : 20 Question Id : 89040114832 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The centre and radius of the circle $x^2 + y^2 - 4x - 8y - 41 = 0$ are

Options :

1. ✖ $(1, -2), 5$

2. ✖ $(2,1), 3$

3. ✔ $(2,4), \sqrt{61}$

4. ✖ $(1, -2), \sqrt{51}$

Question Number : 21 Question Id : 89040114833 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The number of common tangents to the circles $x^2 + y^2 - x = 0$ and $x^2 + y^2 + x = 0$ is

Options :

1. ✖ 2

2. ✖ 1

3. ✖ 4

4. ✔ 3

Question Number : 22 Question Id : 89040114834 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Equation of the circle with centre $(-3, 2)$ and radius 4 is

Options :

1. ✖ $(x^2 + 3)^2 + (y + 2)^2 = 4^2$

2. ✖ $(x - 3)^2 + (y + 2)^2 = 16$

3. ✔ $(x + 3)^2 + (y - 2)^2 = 16$

4. ✖ $(x - 2) + (y + 3)^2 = 4^2$

Question Number : 23 Question Id : 89040114835 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The length of the latus rectum of the parabola $y^2 = 12x$ and the focal distance of the point $(3, -6)$ is

Options :

1. ✖ $3,\ 4$

2. ✖ $2,\ 6$

3. ✖ $-12,\ 6$

4. ✔ $12,\ 6$

Question Number : 24 Question Id : 89040114836 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The equation of the Parabola, whose focus is (0,-2) and the vertex is (0,0), is

Options :

1. ✖ $y^2=32x$

2. ✔ $x^2=-8y$

3. ✖ $x^2=4y$

4. ✖ $y^2=-32x$

Question Number : 25 Question Id : 89040114837 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The eccentricity of $x^2+2y^2=3$ is

Options :

1. ✖ $\frac{1}{\sqrt{2}}$

2. ✖ $\sqrt{2}$

3. ✖ $\pm\sqrt{2}$

4. ✔ $\frac{\sqrt{3}}{2}$

Question Number : 26 Question Id : 89040114838 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$\frac{d}{dx}[e^x(x^2+1)] =$

Options :

1. ✔ $e^x(2x+x^2+1)$

2. ✖ $e^x(2x-x^2+1)$

3. ✖ $e^x(2x+x^3+1)$

4. ✖ $e^{-x}(2x+x^2+1)$

Question Number : 27 Question Id : 89040114839 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

When a>0, $\lim_{x\to 0} \frac{a^x-1}{x} =$

Options :

1. ✔ log a

2. ✖ 0

3. ✖ log (x-1)

4. ✖ log (x-a)

Question Number : 28 Question Id : 89040114840 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$\frac{d}{dx}[\tan^{-1}x] =$

Options :

1. ✔ $\frac{1}{x^2+1}$

2. ✖ $-\frac{1}{x^2-1}$

3. ✖ $\frac{2}{x^2+2}$

4. ✖ $-\frac{1}{x^2+1}$

Question Number : 29 Question Id : 89040114841 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If 4x-7y+15=0 then derivative of y with respect to x is

Options :

1. ✖ -4/7

2. ✖ 0

3. ✖ 4

4. ✔ 4/7

Question Number : 30 Question Id : 89040114842 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $y = \cos x$ then $\frac{d^2y}{dx^2} =$

Options :

1. ✔ $-\cos x$

2. ✖ $-\sin x$

3. ✖ $\cos x$

4. ✖ $\sin x$

Question Number : 31 Question Id : 89040114843 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If u= $e^x \sin y$ then first partial derivative of u with respect to y is

Options :

1. ✖ $e^x \sin y$

2. ✔ $e^x \cos y$

3. ✖ $-e^x \cos y$

4. ✖ 0

Question Number : 32 Question Id : 89040114844 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$\frac{d}{dx}\left(e^{3\log x}\right) =$

Options :

1. ✖ $\log x$

2. ✖

$3x$

3. ✖ x^3

4. ✔ $3x^2$

Question Number : 33 Question Id : 89040114845 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $u(x,y) = \text{Sin}^{-1}\frac{x}{y} + \text{Tan}^{-1}\frac{y}{x}$ then $xu_x + yu_y =$

Options :

1. ✖ $u'(x,y)$

2. ✔ 0

3. ✖ 1

4. ✖ $u(x,\ y)$

Question Number : 34 Question Id : 89040114846 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $S = 12t - 3t^2$ then $\frac{ds}{dt} =$

Options :

1. ✔ $12 - 6t$

2. ✖ $12t - 6$

3. ✖

$12 - 3t$

4. ✖ $12 - 6t^2$

Question Number : 35 Question Id : 89040114847 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

$\int \cot^2 x \, dx =$

Options :

1. ✖ $-\cot x + x + c$

2. ✖ $\cot x - x + c$

3. ✖ $\cot^2 x - x + c$

4. ✔ $-\cot x - x + c$

Question Number : 36 Question Id : 89040114848 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

$\int \frac{1}{\sqrt{a^2 - x^2}} \, dx =$

Options :

1. ✖ $\log\left|x + \sqrt{x^2 + a^2}\right| + c$

2. ✖ $\log\left|x + \sqrt{x^2 - a^2}\right| + c$

3. ✔ $\sin^{-1}\frac{x}{a} + c$

4. ✖ $\sin^{-1}x$

Question Number : 37 Question Id : 89040114849 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$\int e^x \cos x \, dx =$

Options :

1. ✔ $\frac{1}{2}e^x(\cos x + \sin x) + c$

2. ✖ $\frac{1}{2}e^x \cos x$

3. ✖ $\frac{1}{2}e^x(\cos x + \operatorname{cosec} x) + c$

4. ✖ $\frac{1}{2}e^x(\cos x - \sin x) + c$

Question Number : 38 Question Id : 89040114850 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$\int \frac{dx}{\sqrt{x}} =$

Options :

1. ✖ $-2\sqrt{x} + c$

2. ✖ $\sqrt{x} + c$

3. ✔ $2\sqrt{x} + c$

4. ✖ $x + c$

Question Number : 39 Question Id : 89040114851 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$\int \sin\frac{y}{2} dy =$

Options :

1. ✖ $2\cos\frac{y}{2} + c$

2. ✖ $2\sin x/2 + c$

3. ✖ $2\cos 2y + c$

4. ✔ $-2\cos\frac{y}{2} + c$

Question Number : 40 Question Id : 89040114852 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$\int_0^{\pi} dx =$

Options :

1. ✖ $\frac{\pi}{2}$

2. ✖ $-\frac{\pi}{2}$

3. ✔ π

4. ✖ $\frac{\pi}{8}$

Question Number : 41 Question Id : 89040114853 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If f(x) is an even function, then $\int_{-a}^{a} f(x)dx=$

Options :

1. ✖ $\int_{0}^{a} f(x)dx$

2. ✔ $2\int_{0}^{a} f(x)dx$

3. ✖ $2a$

4. ✖ 0

Question Number : 42 Question Id : 89040114854 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The area under the curve $f(x) = \sin x$ in $[0,2\pi]$ is

Options :

1. ✖ 1

2. ✖ 3

3. ✖ -4

4. ✔ 4

Question Number : 43 Question Id : 89040114855 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

When a=b then $\int_a^b f(x)dx =$

Options :

1. ✖ b

2. ✔ 0

3. ✖ a

4. ✖ 2a

Question Number : 44 Question Id : 89040114856 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The Order of the differential equation $\left[\frac{d^2y}{dx^2} + \left(\frac{dy}{dx}\right)^3\right]^{6/5} = 6y$ is

Options :

1. ✖ 3

2. ✔ 2

3. ✖ 6/5

4. ✖ 3

Question Number : 45 Question Id : 89040114857 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The Integrating factor of $\frac{dy}{dx} + 3x = 2y$ is

Options :

1. ✖

e^{3x}

2. ✔ e^{-2x}

3. ✖ e^{x}

4. ✖ 0

Question Number : 46 Question Id : 89040114858 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Transform $dx + xdy = e^{-y}sec^2y\,dy$ into linear form

Options :

1. ✖ $\frac{dx}{dy} - x = e^{-y}sec^2y$

2. ✖ $\frac{dx}{dy} = e^{-y}sec^2y$

3. ✖ $\frac{dx}{dy} + x = e^{-y}sec^2y + c$

4. ✔ $\frac{dx}{dy} + x = e^{-y}sec^2y$

Question Number : 47 Question Id : 89040114859 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The necessary and sufficient condition for the differential equation $Mdx + Ndy = 0$ to be exact is

Options :

1. ✖

$$\frac{\partial M}{\partial y} = \frac{\partial N}{\partial y}$$

2. ✔ $\frac{\partial M}{\partial y} = \frac{\partial N}{\partial x}$

3. ✖ $\frac{\partial M}{\partial y} \neq \frac{\partial N}{\partial x}$

4. ✖ $\frac{\partial M}{\partial x} = \frac{\partial N}{\partial x}$

Question Number : 48 Question Id : 89040114860 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Complementary function of the differential equation $(D^3 - 8)y = x$ is

Options :

1. ✖ $c_1e^{2x} + e^x\{c_2\cos(x\sqrt{3}) + c_3\sin x\sqrt{3}\}$

2. ✖ $c_1e^{2x} + e^{-x}(\cos\sqrt{3} + \sin\sqrt{3})$

3. ✖ $c_1e^{-2x} + c_2e^{-x} + c_3\cos x$

4. ✔ $c_1e^{2x} + e^{-x}\{c_2\cos(x\sqrt{3}) + c_3\sin(x\sqrt{3})\}$

Question Number : 49 Question Id : 89040114861 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Bernoulli's equation is of the form

Options :

1. ✖ $\left(\frac{dy}{dx}\right) + y = Qy$

2. ✖ $\left(\frac{dy}{dx}\right)^2 + y^n = Qy$

3. ✔ $\left(\frac{dy}{dx}\right) + Py = Qy^n$

4. ✖ $\left(\frac{d^2y}{dx^2}\right) + Py = Qy^n$

Question Number : 50 Question Id : 89040114862 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Particular integral of $f(D)y = \cos ax$ is

Options :

1. ✔ $\frac{1}{f(-a^2)}\ cosax\ if f(-a^2) \neq 0$

2. ✖ $\frac{1}{f(a^2)}\ cosax\ if f(-a^2) \neq 0$

3. ✖ $\frac{1}{f(a)}\ cosax\ if f(-a^2) \neq 0$

4. ✖ $\frac{1}{2}\ cosax\ if f(-a^2) \neq 0$

Physics

Section Id :	890401292
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	890401316
Question Shuffling Allowed :	Yes

Question Number : 51 Question Id : 89040114863 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If the unit of mass is 1 Kg, the unit of length is 1m and the unit of time is 1 minute, the unit of pressure in Nm^{-2} is

Options :

1. ✖ $1/60$

2. ✖ 60

3. ✔ $1/3600$

4. ✖ 3600

Question Number : 52 Question Id : 89040114864 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

MLT^{-1} is the dimensional formula for

Options :

1. ✖

Speed

2. ✖ Acceleration

3. ✔ Impulse

4. ✖ Force

Question Number : 53 Question Id : 89040114865 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $|\vec{A} \times \vec{B}| = \sqrt{3}\,\vec{A}\,.\,\vec{B}$ then the value of $|\vec{A} + \vec{B}|$ is

Options :

1. ✔ $(A^2 + B^2 + AB)^{1/2}$

2. ✖ $(A^2 + B^2 + \frac{AB}{\sqrt{2}})^{1/2}$

3. ✖ $A + B$

4. ✖ $(A^2 + B^2 + \sqrt{3}AB)^{1/2}$

Question Number : 54 Question Id : 89040114866 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Of the vectors given below, the parallel vectors are

$\vec{A} = 6\hat{\imath} + 8\hat{\jmath}$ $\vec{B} = 210\hat{\imath} + 280\hat{k}$ $\vec{C} = 5.1\hat{\imath} + 6.8\hat{\jmath}$ $\vec{D} = 3.6\hat{\imath} + 8\hat{\jmath} + 48\hat{k}$

Options :

1. ✔ $\vec{A}$ and $\vec{C}$

2. ✖ $\vec{A}$ and $\vec{B}$

3. ✖ $\vec{A}$ and $\vec{D}$

4. ✖ $\vec{C}$ and $\vec{D}$

Question Number : 55 Question Id : 89040114867 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The position x of a particle with respect to time 't ' along x- axis is given by $x = 9t^2 - t^3$ where x is in metres and t in seconds. The position of this particle when it achieves maximum speed along the x direction is

Options :

1. ✖ 24 m

2. ✖ 32 m

3. ✔ 54 m

4. ✖ 81 m

Question Number : 56 Question Id : 89040114868 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A ball is projected vertically up with a velocity of 40 ms^{-1} from ground. At the same time another ball is dropped from a height of 100 m. The magnitudes of their velocities are equal after

Options :

1. ✖ 1 s

2. ✔ 2 s

3. ✖ 3 s

4. ✖ 4 s

Question Number : 57 Question Id : 89040114869 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Two stones are projected with the same speed but making different angles with the horizontal. Their horizontal ranges are equal. The angle of projection of one is $\pi/3$ and the maximum height reached by it is 102 metres. Then the maximum height reached by the other in metres is

Options :

1. ✖ 336

2. ✖ 224

3. ✖ 56

4. ✔ 34

Question Number : 58 Question Id : 89040114870 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A projectile is thrown into air with velocity u at an angle θ to the horizontal.
The time at which its direction of motion is perpendicular to its initial direction is

Options :

1. ✔ $\frac{u}{g \sin\theta}$

2. ✖

$\frac{u}{g\cos\theta}$

3. ✖ $\frac{u}{g\tan\theta}$

4. ✖ $\frac{u}{g\cot\theta}$

Question Number : 59 Question Id : 89040114871 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

When a bicycle is in motion and pedalled, the force of friction exerted by ground on the two wheels is such that it acts

Options :

1. ✔ In the backward direction on the front wheel and in the forward direction on the rear wheel

2. ✖ In the forward direction on the front wheel and in the backward direction on the rear wheel

3. ✖ In the backward direction on both the front and rear wheels

4. ✖ In the forward direction on both the front and rear wheels

Question Number : 60 Question Id : 89040114872 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Two blocks of masses 4 Kg and 2 Kg are connected by a heavy string and placed on rough horizontal plane. The 2 Kg block is pulled with a constant force F. The coefficient of friction between the blocks and the ground is 0.5. The value of F so that tension in the string is constant throughout during the motion of the blocks is

Options :

1. ✖

40 N

2. ✔ 30 N

3. ✖ 50 N

4. ✖ 60 N

Question Number : 61 Question Id : 89040114873 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a hydroelectric power station, the height of the dam is 10 m. How many kilograms of water must fall per second on the blades of a turbine in order to generate 1 MW of electrical power? [$g = 10\ m/s^2$].

Options :

1. ✖ $10^3\ Kg/s$

2. ✔ $10^4\ Kg/s$

3. ✖ $10^5\ Kg/s$

4. ✖ $10^6\ Kg/s$

Question Number : 62 Question Id : 89040114874 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The kinetic energy at the highest point of the trajectory of a projectile is 200 J. If the mass of the projectile is 1 Kg and the maximum height reached by it is 20 m, then velocity of the projectile from the ground is

Options :

1. ✖ 20 m/s

2. ✖ 10 m/s

3. ✔ $20\sqrt{2}$ m/s

4. ✖ $10\sqrt{2}$ m/s

Question Number : 63 Question Id : 89040114875 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A force applied by an engine on train of mass 2.05×10^6 Kg changes its velocity from 5 m/s to 25 m/s in 5 minutes. The power of the engine is

Options :

1. ✖ 1.025 MW

2. ✔ 2.05 MW

3. ✖ 5 MW

4. ✖ 6 MW

Question Number : 64 Question Id : 89040114876 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Two identical wires have a fundamental frequency of 100 Hz when kept under the same tension. If the tension of one of the wires is increased by 21%, the number of beats produced is

Options :

1. ✖ 11

2. ✔ 10

3. ✖ 9

4. ✖ 8

Question Number : 65 Question Id : 89040114877 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A body executing S.H.M. has a maximum velocity of 1 ms^{-1} and a maximum acceleration of 4 ms^{-2}. Its amplitude in metres is:

Options :

1. ✖ 1

2. ✖ 0.75

3. ✖ 0.5

4. ✔ 0.25

Question Number : 66 Question Id : 89040114878 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A simple pendulum of length l_1 has frequency $\frac{1}{4}$ Hz and another simple pendulum of length l_2 has frequency $\frac{1}{3}$ Hz. Then time period of pendulum of length (l_1 - l_2) is

Options :

1. ✖ 5 s

2. ✖ 1 s

3. ✔ $\sqrt{7}$ s

4. ✖ $\sqrt{12}$ s

Question Number : 67 Question Id : 89040114879 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A source of sound producing wavelength of 50 cm is moving away from stationary observer with $\frac{1^{th}}{5}$ speed of sound. The wavelength of the sound heard by the observer is

Options :

1. ✖ 70 cm

2. ✖ 55 cm

3. ✖ 40 cm

4. ✔ 60 cm

Question Number : 68 Question Id : 89040114880 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

To have a good sound effect inside a hall

Options :

1. ✖ the hall should not have any sound absorbing material

2. ✖ the reverberation time has to be maximum

3. ✖ the reverberation time has to be zero

4. ✔ the reverberation time has to be optimum

Question Number : 69 Question Id : 89040114881 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If the pressure of an ideal gas contained in a closed vessel is increased by 0.5%, the increase in temperature is 2°C. The initial temperature of the gas is

Options :

1. ✖ 27°C

2. ✔ 127°C

3. ✖ 300°C

4. ✖ 400°C

Question Number : 70 Question Id : 89040114882 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

During the free expansion of an ideal gas, which of the following physical quantity remains constant

Options :

1. ✔ Temperature

2. ✖ Pressure

3. ✖ Volume

4. ✖ Ratio of pressure to volume

Question Number : 71 Question Id : 89040114883 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The specific heat at constant volume for a monoatomic gas is 0.075 cal/kg/K and its gram molecular specific heat is 3 cal/mol/K. Then mass of one atom of that gas is

Options :

1. ✔ 6.67×10^{-23} gm

2. ✖ 6.67×10^{23} gm

3. ✖ 2×10^{-23} gm

4. ✖ 2×10^{23} gm

Question Number : 72 Question Id : 89040114884 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A rigid diatomic ideal gas undergoes an adiabatic process at room temperature. The relation between temperature and volume of this process is TV^x = constant. Then x is

Options :

1. ✖ $\frac{5}{3}$

2. ✔ $\frac{2}{5}$

3. ✖ $\frac{2}{3}$

4. ✖ $\frac{3}{5}$

Question Number : 73 Question Id : 89040114885 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A carnot engine having an efficiency of $\frac{1}{10}$ as heat engine, is used as a refrigerator. If the work done on the system is 10 J, the amount of energy absorbed from the reservoir at lower temperature is

Options :

1. ✖ 100 J

2. ✖ 99 J

3. ✔ 90 J

4. ✖ 80 J

Question Number : 74 Question Id : 89040114886 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Two photons of energy 2.5 eV and 3.5 eV fall on a metal surface of work function 1.5 eV.

The ratio of the maximum velocities of the photoelectrons emitted from the metal surface is

Options :

1. ✖ 1 : 4

2. ✖ 2 : 1

3. ✖ 1 : 2

4. ✔ $1 : \sqrt{2}$

Question Number : 75 Question Id : 89040114887 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

At critical angle, the angle of refraction is

Options :

1. ✖ 45^0

2. ✔ 90^0

3. ✖ 120^0

4. ✖ 180^0

Chemistry

Section Id :	890401293
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	890401317
Question Shuffling Allowed :	Yes

Question Number : 76 Question Id : 89040114888 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The quantum number which describes the shape of an atomic orbital is indicated by the symbol

Options :

1. ✔ l

2. ✖ m_l

3. ✖

m_s

4. ✖ n

Question Number : 77 Question Id : 89040114889 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

"No two electrons in an atom can have the same set of four quantum numbers".
This is known as

Options :

1. ✖ Pauli`s Principle

2. ✔ Hund`s Rule

3. ✖ Aufbau Principle

4. ✖ Lewis Rule

Question Number : 78 Question Id : 89040114890 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In the elements with atomic number Z=1 to Z=20,
how many of them have no unpaired electrons in their ground state?

Options :

1. ✖ 8

2. ✖ 4

3. ✖ 10

4. ✔ 6

Question Number : 79 Question Id : 89040114891 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is not a property of covalent compounds?

Options :

1. ✖ They are generally insoluble in water

2. ✖ They consist of molecules

3. ✖ They exist as solids, liquids or gases

4. ✔ The reactions between them are fast

Question Number : 80 Question Id : 89040114892 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The sum of covalent bonds in H_2, N_2 and HCl is

Options :

1. ✖ 4

2. ✔ 5

3. ✖ 6

4. ✖ 3

Question Number : 81 Question Id : 89040114893 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

How many grams of NaOH is required to prepare 5.0 litre of 0.1 N solution?
(Given: At. wt: H=1, O=16, Na=23)

Options :

1. ✔ 20

2. ✖ 30

3. ✖ 10

4. ✖ 50

Question Number : 82 Question Id : 89040114894 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

A gaseous mixture contains 8g of oxygen, 14 g of nitrogen and 8 g of hydrogen.
Total number of molecules present in the gaseous mixture is
(Given: At. wt: H=1, N=14, O=16, N_A= 6 x 10^{23} mol^{-1})

Options :

1. ✖ 1.43 X 10^{23}

2. ✖ 2.85 X 10^{23}

3. ✔ 2.85 X 10^{24}

4. ✖ 1.85 X 10^{24}

Question Number : 83 Question Id : 89040114895 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The equivalent weight of which of the following is the highest?

Options :

1. ✖ Na_2CO_3 (molecular weight = 106)

2. ✖ H_3PO_4 (molecular weight = 98)

3. ✔ $H_2C_2O_4.\ 2H_2O$ (molecular weight = 126)

4. ✖ $AlCl_3$ (molecular weight = 133.5)

Question Number : 84 Question Id : 89040114896 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

At 25^0C, ionic product (Kw) of 0.01M HCl solution is

Options :

1. ✖ 1.0×10^{-13} mol^2/L^2

2. ✖ 1.0×10^{-12} mol^2/L^2

3. ✔ 1.0×10^{-14} mol^2/L^2

4. ✖ 1.0×10^{-15} mol^2/L^2

Question Number : 85 Question Id : 89040114897 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following combinations give a buffer solution?

Options :

1. ✖ HCl + NaCl

2. ✔ $CH_3COOH + CH_3COONa$

3. ✖ $CH_3COOH + NaCl$

4. ✖ $NH_4OH + NaOH$

Question Number : 86 Question Id : 89040114898 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A current of 0.5 amp is passed through molten $AlCl_3$ for 96.5 seconds. The volume of Cl_2 gas liberated at STP at anode (in ml) is (Cl = 35.5 u) (1F=96500 C mol^{-1})

Options :

1. ✖ 11.2

2. ✖ 22.4

3. ✔ 5.6

4. ✖ 33.6

Question Number : 87 Question Id : 89040114899 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The amount of substance deposited due to passage of 1F of electricity is called

Options :

1. ✖ Atomic weight

2. ✔ Equivalent weight

3. ✖ Electrochemical equivalent

4. ✖ Molecular weight

Question Number : 88 Question Id : 89040114900 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is the emf of the cell?

$Sn|Sn^{2+}\,(1M)||Ag^{+}\,(1M)|Ag$

[Given $E^{0}_{Sn^{2+}|Sn} = -0.14V$ *and* $E^{0}_{Ag^{+}|Ag} = +0.80\,V$]

Options :

1. ✖ 0.66 V

2. ✖ 0.80 V

3. ✖ 1.08 V

4. ✔ 0.94 V

Question Number : 89 Question Id : 89040114901 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If the standard reduction potentials of A,B,C are respectively 0.68V, -2.54V and -0.50 V, then the order of their reducing power is

Options :

1. ✖ A>B>C

2. ✖ A>C>B

3. ✖ C>B>A

4. ✔ B>C>A

Question Number : 90 Question Id : 89040114902 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

With which of the following anions, Mg^{2+} and Ca^{2+} ions form salts responsible for permanent hardness of water?

Options :

1. ✔ Cl^-, SO_4^{2-}

2. ✖ Cl^-, NO_2^-

3. ✖ HCO_3^-, Cl^-

4. ✖ CO_3^{2-}, HCO_3^-

Question Number : 91 Question Id : 89040114903 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Exhausted permutit is regenerated by washing with

Options :

1. ✖ Dilute NaOH solution

2. ✔ Dilute NaCl solution

3. ✖ Dilute HCl solution

4. ✖ Dilute $AlCl_3$ solution

Question Number : 92 Question Id : 89040114904 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

27.2 mg of $CaSO_4$ and 2.4 mg of $MgSO_4$ are present in a 2 kg water sample.
What is the total hardness of water (in ppm) in terms of equivalents of $CaCO_3$?
(molecular weight of $CaSO_4$ = 136 & molecular weight of $MgSO_4$ = 120)

Options :

1. ✔ 11

2. ✖ 10

3. ✖ 20

4. ✖ 22

Question Number : 93 Question Id : 89040114905 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Statement I: The lower the pH greater is the corrosion

Statement II: Electrochemical Corrosion always occurs at the anodic area.

The correct answer is

Options :

1. ✔ Both statement – I and Statement – II are correct

2. ✖ Both statement – I and Statement – II are not correct

3. ✖ Statement – I is correct but statement – II is not correct

4. ✖ Statement – I is not correct but statement – II is correct

Question Number : 94 Question Id : 89040114906 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Rust is chemically

Options :

1. ✔ Hydrated Ferric Oxide

2. ✖ Hydrated Copper (II) Chloride

3. ✖ Hydrated Ferrous Sulphate

4. ✖ Hydrated Ferric Sulphate

Question Number : 95 Question Id : 89040114907 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The monomer of Teflon is X. The number of fluorine atoms in X is

Options :

1. ✖ 2

2. ✖ 3

3. ✔ 4

4. ✖ 1

Question Number : 96 Question Id : 89040114908 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Bakelite is an example of

Options :

1. ✖ Thermoplastic Polymer

2. ✖ Elastomer

3. ✖ Fibre

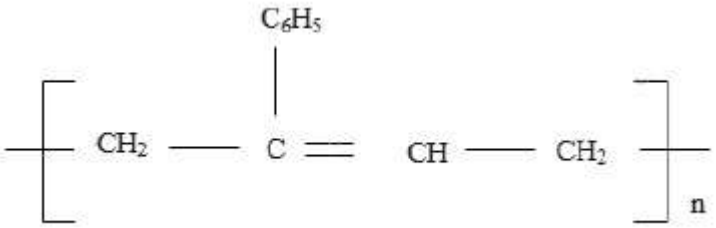
4. ✔ Thermosetting polymer

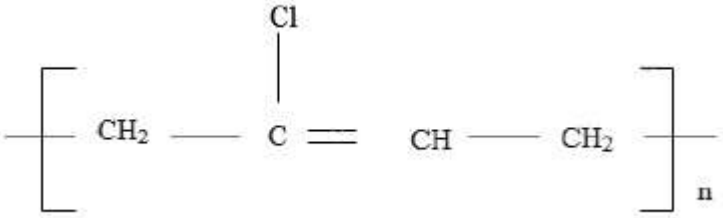
Question Number : 97 Question Id : 89040114909 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

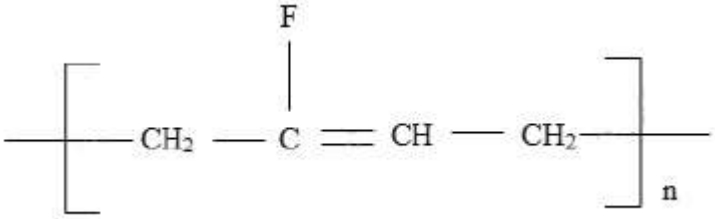
Correct Marks : 1 Wrong Marks : 0

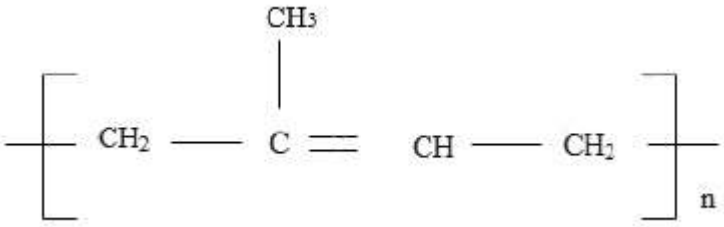
The correct structure of neoprene rubber is

Options :

1. ✖ 

2. ✔ 

3. ✖ 

4. ✖ 

Question Number : 98 Question Id : 89040114910 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is NOT regarded as a primary fuel?

Options :

1. ✖ Natural gas

2. ✔ Coal gas

3. ✖ Lignite

4. ✖ Crude oil

Question Number : 99 Question Id : 89040114911 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

pH of acid rain water is generally in the range of

Options :

1. ✖ 1.0 - 3.0

2. ✔ 3.5 - 5.6

3. ✖ 5.9 - 6.9

4. ✖ 7.1 - 7.5

Question Number : 100 Question Id : 89040114912 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In _____ part of the atmosphere ozone layer is present.

Options :

1. ✖ Troposphere

2. ✖ Thermosphere

3. ✔ Stratosphere

4. ✖ Mesosphere

Electronics and Communication Engineering

Section Id :	890401294
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	100
Number of Questions to be attempted :	100
Section Marks :	100
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	890401318
Question Shuffling Allowed :	Yes

Question Number : 101 Question Id : 89040114913 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A cascaded stage of three amplifiers has individual voltage gains of 25, 10 and 4.

Its overall gain in dB is

Options :

1. ✖ 30

2. ✖ 39

3. ✔ 60

4. ✖ 1000

Question Number : 102 Question Id : 89040114914 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The temperature coefficient of a metal is ___ and that of a semiconductor is ___ respectively

Options :

1. ✔ + ve, - ve

2. ✖ + ve, + ve

3. ✖ - ve, + ve

4. ✖ - ve, - ve

Question Number : 103 Question Id : 89040114915 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

For a transistor if $\alpha = 0.98$ and emitter current I_E is 2 mA then the collector current is

Options :

1. ✖ 0.44 mA

2. ✖ 0.88 mA

3. ✔ 1.96 mA

4. ✖ 3.32 mA

Question Number : 104 Question Id : 89040114916 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The gain of an amplifier with positive feedback is given by the relation

Options :

1. ✖ $A/1+A\beta$

2. ✖ $\beta/1+A\beta$

3. ✖ $\beta/1-A\beta$

4. ✔ $A/1-A\beta$

Question Number : 105 Question Id : 89040114917 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The junction capacitance of a PN junction depends on

Options :

1. ✖ applied voltage only

2. ✖ barrier potential

3. ✔ both doping concentration and applied voltage

4. ✖ doping concentration only

Question Number : 106 Question Id : 89040114918 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A JFET

Options :

1. ✖ is a current controlled device

2. ✖ has low input resistance

3. ✖ has high gate current

4. ✔ is a voltage controlled device

Question Number : 107 Question Id : 89040114919 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Compared to bipolar junction transistor, JFET has

Options :

1. ✖ lower input impedance

2. ✖ high input impedance and high voltage gain

3. ✖ higher voltage gain

4. ✔ high input impedance and low voltage gain

Question Number : 108 Question Id : 89040114920 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In the transfer characteristic of an n-channel MOSFET the region of $V_{GS} > 0$ corresponds to region.

Options :

1. ✖ constant current

2. ✔ enhancement

3. ✖ depletion

4. ✖ saturation

Question Number : 109 Question Id : 89040114921 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The main advantage of using crystal oscillator is

Options :

1. ✔ constant frequency of oscillations

2. ✖ suitable for low voltages

3. ✖ high efficiency

4. ✖ high output voltage

Question Number : 110 Question Id : 89040114922 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The lower cut-off frequency of N cascaded stages is given by

Options :

1. ✖ $f_1(2^{\frac{1}{n}}-1)^{\frac{1}{2}}$

2. ✔ $\frac{f_1}{\sqrt{2^{\frac{1}{n}}-1}}$

3. ✖ nf_1

4. ✖ $\frac{nf_1}{\sqrt{2^{\frac{1}{n}}-1}}$

Question Number : 111 Question Id : 89040114923 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

For a fixed bias circuit the stability factor is

Options :

1. ✖ $\frac{1}{\beta+1}$

2. ✖ $\beta - 1$

3. ✖ $\frac{1}{\beta-1}$

4. ✔ $1 + \beta$

Question Number : 112 Question Id : 89040114924 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Most commonly used bias in BJT amplifier circuit is

Options :

1. ✖ fixed bias

2. ✔ self bias

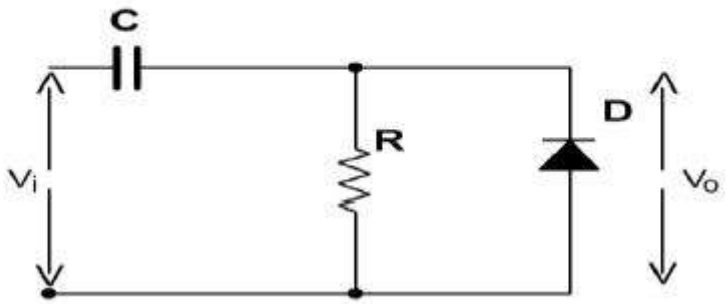
3. ✖ collector to base bias

4. ✖ collector feedback bias

Question Number : 113 Question Id : 89040114925 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The circuit shown in the figure is a



Options :

1. ✖ negative damper

2. ✖ positive peak clipper

3. ✔ positive clamper

4. ✖ differentiator

Question Number : 114 Question Id : 89040114926 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

An amplifier having noise figure of 3 dB and available power gain of 20 dB is

followed by a mixer circuit having noise figure 10dB. The overall noise figure is numerically equal to

Options :

1. ✔ 2.09

2. ✖ 3.45

3. ✖ 2.90

4. ✖ 4.5

Question Number : 115 Question Id : 89040114927 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The total phase shift of loop in phase shift oscillator is

Options :

1. ✖ $45°$

2. ✖ 90^0

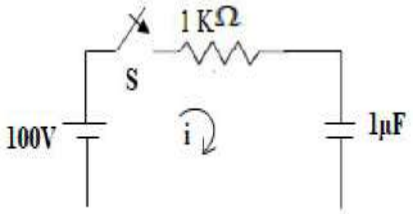
3. ✖ 180^0

4. ✔ 360^0

Question Number : 116 Question Id : 89040114928 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In the network shown in the given figure, the switch S is closed at t = 0 with the capacitor uncharged. The value of $\frac{di}{dt}$ at $t = 0^+$ will be



Options :

1. ✖ 200 amp/sec

2. ✔ 100 amp/sec

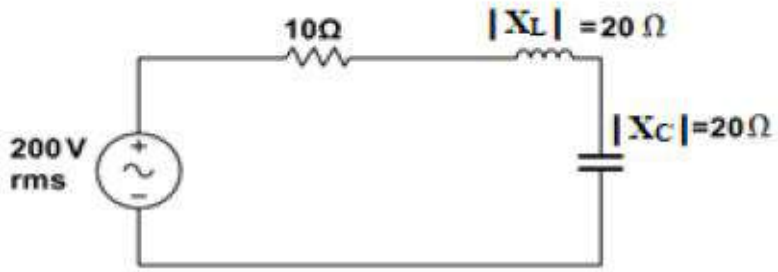
3. ✖ -100 amp/sec

4. ✖ -200 amp/sec

Question Number : 117 Question Id : 89040114929 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

For RLC circuit shown below, the rms voltage across the capacitor is



Options :

1. ✖ $200 \angle -90°$ V

2. ✖ $100 \angle -90°$ V

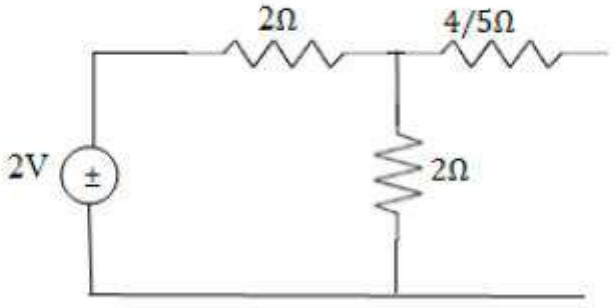
3. ✔ $400 \angle -90°$ V

4. ✖ $400 \angle 90°$ V

Question Number : 118 Question Id : 89040114930 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Find the Norton's equivalent of the circuit given below



Options :

1. ✖ $\frac{5}{2}$ A, 2 Ω

2. ✔ $\frac{2}{5}$ A, 2 Ω

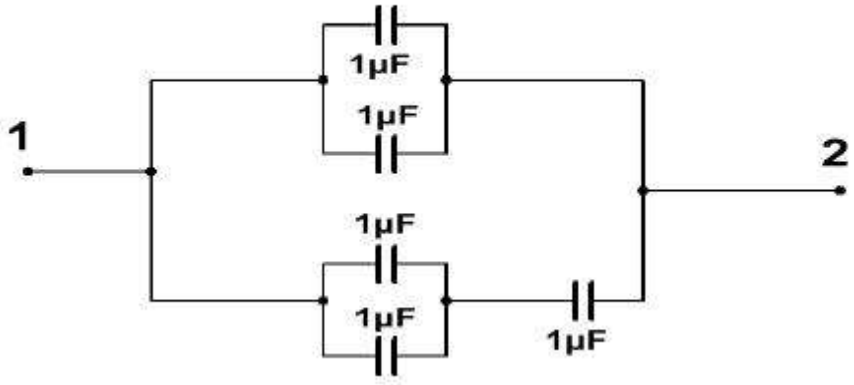
3. ✖ $\frac{5}{2}$ A, 1 Ω

4. ✖ $\frac{2}{5}$ A, 1 Ω

Question Number : 119 Question Id : 89040114931 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The total capacitance across points '1' and '2' in the circuit shown is



Options :

1. ✖ 0.66 μF

2. ✖ 4.66 μF

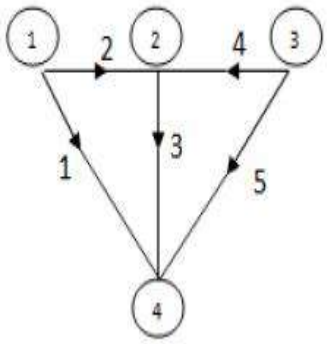
3. ✖ 3.66 μF

4. ✔ 2.66 μF

Question Number : 120 Question Id : 89040114932 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which one of the following represents the total number of trees in the graph given in the figure



Options :

1. ✖ 4

2. ✖ 7

3. ✔ 8

4. ✖ 6

Question Number : 121 Question Id : 89040114933 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A lossless line will be distortion less if the phase shift

Options :

1. ✖ is constant with frequency

2. ✔ varies directly with frequency

3. ✖ has nothing to do with distortion on a lossless line

4. ✖ varies inversely with frequency

Question Number : 122 Question Id : 89040114934 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

On a transmission line with standing waves the distance between a voltage maximum and adjacent current maximum is

Options :

1. ✔ $\frac{\lambda}{4}$

2. ✖ $\frac{\lambda}{6}$

3. ✖ $\frac{\lambda}{2}$

4. ✖ $\frac{\lambda}{8}$

Question Number : 123 Question Id : 89040114935 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In an ideal transmission line with matched load, the VSWR and reflection Coefficient are respectively

Options :

1. ✖ 1 and 1

2. ✖ 0 and 1

3. ✖ infinity and 0

4. ✔ 1 and 0

Question Number : 124 Question Id : 89040114936 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A transmission line has a VSWR of 2 then the reflection coefficient is

Options :

1. ✖ 1/2

2. ✖ 0

3. ✖ 1/4

4. ✔ 1/3

Question Number : 125 Question Id : 89040114937 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The input impedance of short circuited loss less line of length less than a quarter wavelength is

Options :

1. ✖ purely resistive

2. ✖ purely capacitive

3. ✔ purely inductive

4. ✖ complex

Question Number : 126 Question Id : 89040114938 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In India the TV channel bandwidth is

Options :

1. ✖ 3 MHz

2. ✔ 7 MHz

3. ✖ 5 MHz

4. ✖ 4 MHz

Question Number : 127 Question Id : 89040114939 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In broadcast television, the number of scanning per frame is chosen to be an odd number to

Options :

1. ✔ make interlacing easier

2. ✖ improve the picture resolution

3. ✖ reduce peak power requirement

4. ✖ reduce the required bandwidth

Question Number : 128 Question Id : 89040114940 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 10 K ohms/V

2. ✖ 100 K ohms/V

3. ✖ 50 K ohms/V

4. ✔ 20 K ohms/V

Question Number : 129 Question Id : 89040114941 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The horizontal plates of CRO is supplied with following to observe the waveform

Options :

1. ✖ Sine wave

2. ✖ Cos wave

3. ✔ Sawtooth wave

4. ✖ Square wave

Question Number : 130 Question Id : 89040114942 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Resistances can be measured with the help of

Options :

1. ✖ wattmeters

2. ✖ voltmeters

3. ✖ ammeters

4. ✔ ohmmeters and resistance bridges

Question Number : 131 Question Id : 89040114943 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Two voltmeters have the same range 0-400 V. The internal resistances are 30,000 ohms and 20,000 ohms respectively.

When they are connected in series and applied voltage is 600 V, the readings are

Options :

1. ✔ 360 V and 240 V

2. ✖ 300 V each

3. ✖ 400 V and 200 V

4. ✖ One meter out of range and other 100V

Question Number : 132 Question Id : 89040114944 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The function of Q-meter is to measure

Options :

1. ✖ Capacitance

2. ✖ Inductance

3. ✔ Quality factor of capacitor and inductor

4. ✖ Quality factor and form factor of capacitor and inductor

Question Number : 133 Question Id : 89040114945 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is a temperature measurement element?

Options :

1. ✔ Thermocouple

2. ✖ Pressure gauge

3. ✖ Flow meter

4. ✖ Tachometer

Question Number : 134 Question Id : 89040114946 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is the function of a signal generator?

Options :

1. ✖ To measure temperature

2. ✔ To generate electrical signals

3. ✖ To measure pressure

4. ✖ To measure flow

Question Number : 135 Question Id : 89040114947 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following can be used to produce a square waveform ?

Options :

1. ✖ Wien bridge oscillators

2. ✖ T-oscillator

3. ✖ Hartley oscillator

4. ✔ Multivibrators

Question Number : 136 Question Id : 89040114948 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following signals are generated by Wien-bridge oscillators?

Options :

1. ✖ Square wave

2. ✔ Sine wave

3. ✖ Triangular wave

4. ✖ Pulse wave

Question Number : 137 Question Id : 89040114949 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The characteristic equation of a closed loop control system is given as $S^2+4S+16 = 0$.

The resonant frequency in rad/sec of the system is

Options :

1. ✖ 2

2. ✖ $2\sqrt{3}$

3. ✖ 4

4. ✔ $2\sqrt{2}$

Question Number : 138 Question Id : 89040114950 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Natural frequency of a unity feedback control system of transfer function $G(s) = \frac{10}{s(s+1)}$ is

Options :

1. ✖ 0.5 rad/sec

2. ✔ 3.16 rad/sec

3. ✖ 4.6 rad/sec

4. ✖ 1 rad/sec

Question Number : 139 Question Id : 89040114951 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The phenomenon of injection electro luminescence is the basis of working of

Options :

1. ✖ Photodiodes

2. ✔ Light Emitting Diodes

3. ✖ Phototransistors

4. ✖ Solar cells

Question Number : 140 Question Id : 89040114952 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider the following statements in respect to a solar cell

(i) a solar cell is a large area p-n junction

(ii) in a solar cell the p-n junction is near the surface

(iii) a solar cell is a photovoltaic device

Which of the statements given above are correct ?

Options :

1. ✔ 1, 2 and 3

2. ✖ 1 and 2

3. ✖ 2 and 3

4. ✖ 1 and 3

Question Number : 141 Question Id : 89040114953 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

Which of the following is active transducer ?

Options :

1. ✖ Strain Gauge

2. ✖ Thermistor

3. ✖ LVDT

4. ✔ Thermocouple

Question Number : 142 Question Id : 89040114954 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

What type of transducer is used to convert force into electrical signals?

Options :

1. ✖ LVDT

2. ✖ Potentiometer

3. ✔ Load cell

4. ✖ Thermocouple

Question Number : 143 Question Id : 89040114955 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The two transistor model of a SCR consists of two following transistors

Options :

1. ✔ one n-p-n and other p-n-p

2. ✖ Both n-p-n

3. ✖ Both p-n-p

4. ✖ One n-p-n and other UJT

Question Number : 144 Question Id : 89040114956 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

To turn-off an SCR, it is necessary to reduce its current to less than

Options :

1. ✖ Trigger current

2. ✔ Holding current

3. ✖ Breakdown current

4. ✖ Forward current

Question Number : 145 Question Id : 89040114957 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a parallel inverter

Options :

1. ✔ Each thyristor is turned on twice during each cycle

2. ✖ Each thyristor is turned on once during each cycle

3. ✖ Each thyristor is turned on either once or twice during each cycle

4. ✖ Each thyristor may be turned on up to four times during each cycle

Question Number : 146 Question Id : 89040114958 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The working principle of SMPS is based on

Options :

1. ✖ Integral control principle

2. ✖ Frequency control principle

3. ✔ Chopper principle

4. ✖ Phase control principle

Question Number : 147 Question Id : 89040114959 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A 1000 KHz carrier is simultaneously modulated with 300 Hz and 2 KHz audio sine waves.

Which of the following frequencies will not be present in the output ?

Options :

1. ✔ 700 KHz

2. ✖ 998 KHz

3. ✖ 999.7 KHz

4. ✖ 1000.3 KHz

Question Number : 148 Question Id : 89040114960 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

An AM wave is given by $C(t) = 10(1 + 0.4 \cos 10^3 t + 0.3 \cos 10^4 t) \cos 10^6 t$.

The modulation index of the envelope is

Options :

1. ✖ 0.4

2. ✔ 0.5

3. ✖ 0.3

4. ✖ 0.9

Question Number : 149 Question Id : 89040114961 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The envelope detector is

Options :

1. ✔ asynchronous detector

2. ✖ synchronous detector

3. ✖ coherent detector

4. ✖ product demodulator

Question Number : 150 Question Id : 89040114962 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The SSB can be obtained from balanced modulator by connecting at its output a

Options :

1. ✔ filter

2. ✖ adder

3. ✖ buffer

4. ✖ clipper

Question Number : 151 Question Id : 89040114963 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following circuits is an indirect method of generating FM ?

Options :

1. ✖ reactance modulator

2. ✖ varactor diode modulator

3. ✔ Armstrong modulator

4. ✖ balanced modulator

Question Number : 152 Question Id : 89040114964 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The function of a pre-emphasis circuit in a communication system is to boost

Options :

1. ✖ the amplitude of modulated signal

2. ✔ the higher audio frequencies

3. ✖ the lower audio frequencies

4. ✖ the whole audio band

Question Number : 153 Question Id : 89040114965 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a commercial FM broadcasting the maximum frequency deviation is

Options :

1. ✖ 15 KHz

2. ✖ 20 KHz

3. ✖ 200 KHz

4. ✔

75 KHz

Question Number : 154 Question Id : 89040114966 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A super heterodyne receiver with an IF of 450 KHz is tuned to a signal at 1200 KHz. The image frequency is

Options :

1. ✖ 900 KHz

2. ✖ 1800 KHz

3. ✔ 2100 KHz

4. ✖ 1550 KHz

Question Number : 155 Question Id : 89040114967 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

For M> 4, the signal constellation of M-ary PSK is

Options :

1. ✖ circular

2. ✖ rectangular

3. ✔ Elliptical

4. ✖ Line

Question Number : 156 Question Id : 89040114968 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The Nyquist sampling rate for a signal band limited to 4 KHZ is

Options :

1. ✖ 5 KHZ

2. ✔ 8 KHZ

3. ✖ 2 KHZ

4. ✖ 16 KHZ

Question Number : 157 Question Id : 89040114969 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The modulation method that represents bits as different phase shifts of a carrier is known as

Options :

1. ✖ ASK

2. ✖ FSK

3. ✔ PSK

4. ✖ MSK

Question Number : 158 Question Id : 89040114970 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The data rate of a binary signal with a bit time 115 micro seconds is

Options :

1. ✖ 9600 K bits/sec

2. ✔

8696 K bits/sec

3. ✖ 6700 K bits/sec

4. ✖ 8200 K bits/sec

Question Number : 159 Question Id : 89040114971 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The spectral density of white noise is

Options :

1. ✖ Exponential

2. ✔ Uniform

3. ✖ Random

4. ✖ Gaussian

Question Number : 160 Question Id : 89040114972 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Long distance short wave radio broadcasting uses

Options :

1. ✖ ground wave

2. ✖ direct wave

3. ✔ ionosphere wave

4. ✖ space wave

Question Number : 161 Question Id : 89040114973 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is not a travelling wave?

Options :

1. ✖ $e = E_m \sin(\beta x - \omega t)$

2. ✖ $e = E_m \cos(\beta x - \omega t)$

3. ✖ $e = E_m \sin(\omega t - \beta x)$

4. ✔ $e = E_m \sin(\beta x)$

Question Number : 162 Question Id : 89040114974 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A Reflex Klystron oscillator uses

Options :

1. ✔ one cavity resonator

2. ✖ two cavity resonator

3. ✖ three cavity resonator

4. ✖ four cavity resonator

Question Number : 163 Question Id : 89040114975 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Wave guide may be considered as

Options :

1. ✔ high pass filter

2. ✖ low pass filter

3. ✖ band pass filter

4. ✖ band stop filter

Question Number : 164 Question Id : 89040114976 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Maximum effective aperture of a $\lambda/2$ dipole is

Options :

1. ✖ $0.013\ \lambda^2$

2. ✖ $1.3\ \lambda^2$

3. ✔ $0.13\ \lambda^2$

4. ✖ $13\ \lambda^2$

Question Number : 165 Question Id : 89040114977 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following RADAR cannot be used for range measurement?

Options :

1. ✖ Pulsed

2. ✖ MTI

3. ✔ CW

4. ✖ FM CW

Question Number : 166 Question Id : 89040114978 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A scope in RADAR systems displays

Options :

1. ✖ Target azimuth angle and range

2. ✖ Target azimuth angle alone

3. ✔ Target range alone

4. ✖ Target range and Elevation angle

Question Number : 167 Question Id : 89040114979 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a fibre optic system the source and detector respectively are

Options :

1. ✔ PN junction laser and a photo diode

2. ✖ PN junction laser and an LED

3. ✖ LED and a BJT

4. ✖ LED and a MOSFET

Question Number : 168 Question Id : 89040114980 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The standard reference antenna for the directive gain is the

Options :

1. ✖ half wave dipole

2. ✔ isotropic antenna

3. ✖ infinitesimal dipole

4. ✖ elementary doublet

Question Number : 169 Question Id : 89040114981 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The dominant mode in a rectangular waveguide is

Options :

1. ✖ TM_{01}

2. ✔ TE_{10}

3. ✖ TM_{11}

4. ✖ TE_{01}

Question Number : 170 Question Id : 89040114982 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which system allows the entire bandwidth available to each user at the same time ?

Options :

1. ✖ CSMA

2. ✖ GSM

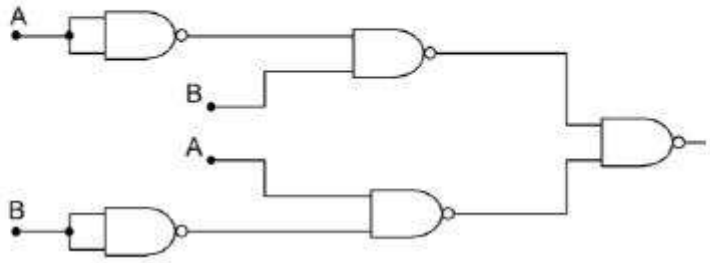
3. ✔ CDMA

4. ✖ FDMA

Question Number : 171 Question Id : 89040114983 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which type of gate is shown in the figure ?



Options :

1. ✔ EX-OR

2. ✖ OR

3. ✖ NOR

4. ✖ NAND

Question Number : 172 Question Id : 89040114984 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Full adder can be implemented by

Options :

1. ✖ decoders

2. ✔ multiplexers

3. ✖ AND & OR gates

4. ✖ half adders

Question Number : 173 Question Id : 89040114985 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is dual of A + [B + (AC)] + D?

Options :

1. ✖ A[B+D]AC

2. ✖ A+[B(A+C)D]

3. ✖ A+[B(A+C)]+D

4. ✔ A[B(A+C)]D

Question Number : 174 Question Id : 89040114986 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

NAND gate with positive logic will operate as

Options :

1. ✖ NOR with negative logic

2. ✖ AND with negative logic output

3. ✖ AND with negative logic

4. ✔ OR with negative logic input

Question Number : 175 Question Id : 89040114987 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The main advantage of CMOS over TTL circuit is its

Options :

1. ✖ extremely low cost

2. ✖ increased speed of operation

3. ✔ much reduced power dissipation

4. ✖ very small physical size

Question Number : 176 Question Id : 89040114988 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

For emitter coupled logic the switching speed is very high because

Options :

1. ✖ negative logic is used

2. ✔ the transistors are not saturated when conducting

3. ✖ emitter coupled transistor are used

4. ✖ multi emitter transistors are used

Question Number : 177 Question Id : 89040114989 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Minimum number of comparators needed to build a 6-bit simultaneous A/D converter is

Options :

1. ✔ 63

2. ✖ 64

3. ✖ 7

4. ✖ 6

Question Number : 178 Question Id : 89040114990 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The figure of merit of a logic family is given by

Options :

1. ✖ gain bandwidth product

2. ✔ (propagation delay time)*(power dissipation)

3. ✖ (fan out)*(propagation delay time)

4. ✖ (noise margin)*(power dissipation)

Question Number : 179 Question Id : 89040114991 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A 10-bit ADC has a range of -5V to +5V, the resolution of the ADC is approximately

Options :

1. ✔ 10 mV

2. ✖ 100 mV

3. ✖ 0.5 V

4. ✖ 1V

Question Number : 180 Question Id : 89040114992 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is the minimum number of JK flip-flops required to realize a modulo-5 synchronous counter ?

Options :

1. ✖ 5

2. ✖ 2

3. ✖ 4

4. ✔ 3

Question Number : 181 Question Id : 89040114993 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

One megabyte is equivalent to

Options :

1. ✔ 2^{20} bytes

2. ✖ 2^{10} bytes

3. ✖ 2^{30} bytes

4. ✖ 2^{16} bytes

Question Number : 182 Question Id : 89040114994 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A microcontroller differs from a microprocessor in that it has

Options :

1. ✔ both on-chip memory and on-chip ports

2. ✖ only on-chip memory but not on-chip ports

3. ✖ only on-chip ports but not on-chip memory

4. ✖ neither on-chip memory nor on-chip ports

Question Number : 183 Question Id : 89040114995 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following I/O methods does not use the CPU for performing I/O operation ?

Options :

1. ✖ program initiated I/O

2. ✖ device initiated I/O

3. ✔ direct memory access

4. ✖ serial I/O

Question Number : 184 Question Id : 89040114996 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The program counter in a computer is a special purpose register which contains

Options :

1. ✖ The instruction being executed

2. ✖ The address of the instruction being executed

3. ✖ The next instruction to be executed

4. ✔ The address of the next instruction to be executed

Question Number : 185 Question Id : 89040114997 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

8051 series has how many 16 bit registers ?

Options :

1. ✔ 2

2. ✖ 3

3. ✖ 1

4. ✖ 0

Question Number : 186 Question Id : 89040114998 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is the status of carry, auxiliary carry and parity flags after execution of following instructions:

MOV A, #9C

ADD A, #64H

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 : 187 Question Id : 89040114999 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

How are the bits of the register PSW affected if we select Bank2 of 8051 ?

Options :

1. ✖ PSW.5=0 and PSW.4=1

2. ✖ PSW.2=0 and PSW.3=1

3. ✖ PSW.3=1 and PSW.4=1

4. ✔ PSW.3=0 and PSW.4=1

Question Number : 188 Question Id : 89040115000 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

How many bytes of bit addressable memory is present in 8051 microcontrollers ?

Options :

1. ✔ 32 bytes

2. ✖ 8 bytes

3. ✖ 16 bytes

4. ✖ 128 bytes

Question Number : 189 Question Id : 89040115001 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

On power up, the 8051 uses which RAM locations for register R0- R7?

Options :

1. ✔ 00-07

2. ✖ 00-2F

3. ✖ 00-7F

4. ✖ 00-0F

Question Number : 190 Question Id : 89040115002 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which instruction at the end of interrupt service program takes the execution back to the interrupted program ?

Options :

1. ✖ forward

2. ✔

return

3. ✖ data

4. ✖ line

Question Number : 191 Question Id : 89040115003 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The instructions that involve various string manipulation operations are

Options :

1. ✖ branch instructions

2. ✖ flag manipulation instructions

3. ✖ shift and rotate instructions

4. ✔ string instructions

Question Number : 192 Question Id : 89040115004 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

In a memory map the lowest address of an 8 K byte RAM is 1000 H. What is the highest address ?

Options :

1. ✖ 8192 H

2. ✔ 2FFF H

3. ✖ 7FFF H

4. ✖

3000 H

Question Number : 193 Question Id : 89040115005 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

Which of the following memory units needs periodic refreshing ?

Options :

1. ✖ ROM

2. ✖ EPROM

3. ✖ Static ROM

4. ✔ Dynamic RAM

Question Number : 194 Question Id : 89040115006 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

What is a Firewall in Computer Network ?

Options :

1. ✖ The physical boundary of Network

2. ✖ An operating System of Computer Network

3. ✔ A system designed to prevent unauthorized access

4. ✖ A web browsing Software

Question Number : 195 Question Id : 89040115007 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

How many layers does OSI Reference Model has ?

Options :

1. ✖ 4

2. ✖ 5

3. ✖ 6

4. ✔ 7

Question Number : 196 Question Id : 89040115008 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

How many bits are there in the Ethernet address ?

Options :

1. ✖ 64 bits

2. ✔ 48 bits

3. ✖ 32 bits

4. ✖ 16 bits

Question Number : 197 Question Id : 89040115009 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What does Router do in a network ?

Options :

1. ✖ Forwards a packet to all outgoing links

2. ✖ Forwards a packet to the next free outgoing link

3. ✔ Determines on which outing link a packet is to be forwarded

4. ✖ Forwards a packet to all outgoing links except the originated link

Question Number : 198 Question Id : 89040115010 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is operating system ?

Options :

1. ✖ MS Word

2. ✖ Ventura

3. ✖ Java

4. ✔ Windows

Question Number : 199 Question Id : 89040115011 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

MAC Address is the example of

Options :

1. ✖ Transport Layer

2. ✔ Data Link Layer

3. ✖ Application Layer

4. ✖ Physical Layer

Question Number : 200 Question Id : 89040115012 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Bluetooth is an example of

Options :

1. ✔ Personal area network

2. ✖ Local area network

3. ✖ Virtual private network

4. ✖ Wide area network