

# Question Paper Preview

**Question Paper Name:** Electronics and Communication Engineering  
**Subject Name:** Electronics and Communication Engineering

Mathematics

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

**Question Number : 1 Question Id : 6780945204 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical**

If the traces of A and B are 20 and -8 then the trace of (A+B) is \_\_\_\_

**Options :**

1. 12
2. -12
3. 28
4. -28

**Question Number : 2 Question Id : 6780945205 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical**

If  $A = \begin{bmatrix} x & 1 \\ 1 & 0 \end{bmatrix}$  is an involutory matrix then  $x =$

**Options :**

1. 0
2. -2
3. -1
4. 2

**Question Number : 3 Question Id : 6780945206 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical**

The determinant of  $\begin{bmatrix} \log e & \log e^2 & \log e^3 \\ \log e^2 & \log e^3 & \log e^4 \\ \log e^3 & \log e^4 & \log e^5 \end{bmatrix}$  is \_\_\_\_\_

Options :

1. 0
2. 1
3.  $4\log e$
4.  $5\log e$

Question Number : 4 Question Id : 6780945207 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If  $A = \begin{bmatrix} 1 & 1 & 0 \\ 2 & 1 & 3 \\ 0 & 1 & 2 \end{bmatrix}$  then  $\det(\text{adj}A) =$  \_\_\_\_\_

Options :

1.  $\det A$
2.  $\det A^2$
3.  $-\det A$
4.  $(\det A)^2$

Question Number : 5 Question Id : 6780945208 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If  $A, B$  are two matrices and  $AB=B, BA=A$  then  $A^2 + B^2 =$

Options :

1.  $A+B$
2.  $A-B$
3.  $AB$
4. 0

Question Number : 6 Question Id : 6780945209 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If  $\frac{3x+2}{(x+1)(2x^2+3)} = \frac{A}{x+1} + \frac{Bx+C}{2x^2+3}$ , then  $A+C-B =$  \_\_\_\_

Options :

1. 0
2. 2
3. 3
4. 5

Question Number : 7 Question Id : 6780945210 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If  $\frac{3x}{(x-a)(x-b)} = \frac{2}{x-a} + \frac{1}{x-b}$  then  $a:b =$  \_\_\_\_

Options :

1. -2:1
2. 2:1
3. 1:2
4. 3:1

Question Number : 8 Question Id : 6780945211 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of  $\tan 855^\circ =$  \_\_\_\_

Options :

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

Question Number : 9 Question Id : 6780945212 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If  $\tan \alpha = \frac{m}{m+1}$  and  $\tan \beta = \frac{1}{2m+1}$  then  $\tan(\alpha + \beta) =$  \_\_\_\_

Options :

1. -1
2. 0
3. 1
4. 2

Question Number : 10 Question Id : 6780945213 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of  $6 \sin 20^\circ - 8 \sin^3 20^\circ =$

Options :

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

Question Number : 11 Question Id : 6780945214 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If  $3 \sin \theta + 4 \cos \theta = 5$  then the value of  $4 \sin \theta - 3 \cos \theta =$

Options :

1. 0
2. -1
3. 1
4. 2

Question Number : 12 Question Id : 6780945215 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The sine function with period 3 is

Options :

1.  $\sin \frac{2\pi x}{3}$
2.  $\sin \frac{\pi x}{3}$

3.  $\sin 3\pi x$

3.

4.  $\sin \frac{3\pi x}{2}$

Question Number : 13 Question Id : 6780945216 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The maximum value of  $3\sin^2 x + 5\cos^2 x$  is \_\_\_\_\_

Options :

1. 8

2. 3

3. 5

4. 34

Question Number : 14 Question Id : 6780945217 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The equation  $\sqrt{3}\sin x + \cos x = 4$  has \_\_\_\_\_

Options :

1. Only one solution

2. two solutions

3. Infinite solutions

4. no solution

Question Number : 15 Question Id : 6780945218 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of  $\cos^{-1}(\sqrt{3}x) + \cos^{-1}x = \frac{\pi}{2}$  is \_\_\_\_\_

Options :

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

2.  $\frac{1}{5}$

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

4.  $-\frac{1}{5}$

Question Number : 16 Question Id : 6780945219 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of  $\sin \theta + \sin(\theta + 120^\circ) - \sin(120^\circ - \theta) =$  \_\_\_\_\_

Options :

1. 0
2.  $\sin \theta$
3. 1
4.  $-\sin \theta$

Question Number : 17 Question Id : 6780945220 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The principal solution of  $3\text{Cosec}A = 4\text{Sin}A$  is \_\_\_\_\_

Options :

1.  $\frac{\pi}{4}$
2.  $\pm \frac{\pi}{3}$
3.  $\pm \frac{\pi}{6}$
4.  $\pm 2\pi$

Question Number : 18 Question Id : 6780945221 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If  $|z^2 - 1| = |z|^2 + 1$ , then  $z$  lies in \_\_\_\_\_

Options :

1. The real axis
2. a circle
3. The imaginary axis
4. a parabola

Question Number : 19 Question Id : 6780945222 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If  $\left(\frac{1+i}{1-i}\right)^3 - \left(\frac{1-i}{1+i}\right)^3 = a+ib$ , then  $a$  and  $b$  are \_\_\_\_\_

Options :

1. 1,1
2. 2,-2
3. 0,-2
4. 0,-1

Question Number : 20 Question Id : 6780945223 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the line  $y = 2x + c$  is a tangent to  $x^2 + y^2 = 5$  then the value of  $c$  is \_\_\_\_\_

Options :

1. 2
2. 3
3. 4
4. 5

Question Number : 21 Question Id : 6780945224 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The vertex of the parabola  $x^2 + 8x + 12y + 4 = 0$  is

Options :

1. (-4,1)
2. (4,-1)
3. (-4,-1)
4. (4,1)

Question Number : 22 Question Id : 6780945225 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The number of tangents to the ellipse  $\frac{x^2}{4} + \frac{y^2}{2} = 1$  through (2,1) is \_\_\_\_\_

Options :

1. 0

2. 1
3. 2
4. 3

Question Number : 23 Question Id : 6780945226 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The length of the latus rectum of the hyperbola  $x^2 - 4y^2 = 4$  is \_\_\_\_\_

Options :

1. 2
2. 1
3. 4
4. 3

Question Number : 24 Question Id : 6780945227 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The length of the diameter of the circle  $x^2 + y^2 - 6x - 8y = 0$  is \_\_\_\_\_

Options :

1. 10
2. 15
3. 5
4. 20

Question Number : 25 Question Id : 6780945228 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the line  $2y = 5x + k$  touches the parabola  $y^2 = 6x$  then  $k =$  \_\_\_\_\_

Options :

1.  $\frac{2}{3}$
2.  $\frac{4}{3}$
3.  $\frac{3}{5}$
4.  $\frac{6}{5}$



Question Number : 26 Question Id : 6780945229 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$$\lim_{x \rightarrow 2^+} \frac{x|x-2|}{x-2} = \underline{\hspace{2cm}}$$

Options :

1. 1
2. -1
3. 2
4. -2

Question Number : 27 Question Id : 6780945230 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$$\text{If } f(x) = (1+x)^{\frac{2}{x}} \text{ is continuous at } x=0 \text{ then } f(0) = \underline{\hspace{2cm}}$$

Options :

1.  $e$
2.  $e^2$
3.  $e^3$
4.  $e^4$

Question Number : 28 Question Id : 6780945231 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$$\text{If } x = a \sec \theta, y = b \tan \theta \text{ then } \frac{dy}{dx} = \underline{\hspace{2cm}}$$

Options :

1.  $\frac{b}{a} \sec \theta$
2.  $\frac{b}{a} \operatorname{cosec} \theta$
3.  $\frac{a}{b} \sec \theta$
4.  $\frac{a}{b} \operatorname{cosec} \theta$

If  $x^y = e^{x-y}$  then  $\frac{dy}{dx} =$  \_\_\_\_\_

Options :

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

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

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

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

If  $y = \sin^{-1}\left(\frac{x}{\sqrt{1+x^2}}\right)$  then  $\frac{dy}{dx} =$  \_\_\_\_\_

Options :

1.  $-\frac{1}{1+x^2}$

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

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

4.  $-\frac{2}{1+x^2}$

The slope of the normal to the curve  $x = a \sec \theta, y = a \tan \theta$  at  $\theta = \frac{\pi}{6}$  is \_\_\_\_\_

Options :

1. 2

2. 0

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

4. 1

Question Number : 32 Question Id : 6780945235 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The rate of change of area of a circle with respect to radius when  $r=5\text{cm}$  is

Options :

1.  $2\pi \text{ sq.cm/sec}$

2.  $10\pi \text{ sq.cm/sec}$

3.  $100\pi \text{ sq.cm/sec}$

4.  $20\pi \text{ sq.cm/sec}$

Question Number : 33 Question Id : 6780945236 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following function has maxima or minima?

Options :

1.  $e^x$

2.  $\log x$

3.  $x^3 + x^2 + x + 1$

4.  $\sin x$

Question Number : 34 Question Id : 6780945237 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the increase in the side of a square is 2% then the approximate percentage increase in the area of the square is \_\_\_\_\_

Options :

1. 2

2. 4

3. 6

4. 8

Question Number : 35 Question Id : 6780945238 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For the function  $f(x) = \log(x^2 + y^2)$ , which of the following is true?

Options :

1.  $f_x + f_y = 0$

2.  $f_{xx} + f_{yy} = 0$

3.  $f_x - f_y = 0$

4.  $f_{xx} - f_{yy} = 0$

Question Number : 36 Question Id : 6780945239 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$$\int \operatorname{cosec}^5 \theta \cot \theta d\theta = \underline{\hspace{2cm}}$$

Options :

1.  $\frac{\cot^2 \theta}{2}$

2.  $\frac{-\operatorname{cosec}^5 \theta}{5}$

3.  $\frac{\operatorname{cosec}^6 \theta}{6}$

4.  $\frac{-\operatorname{cosec}^6 \theta}{6}$

Question Number : 37 Question Id : 6780945240 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$$\int_2^3 \frac{dx}{x^2 - x} = \underline{\hspace{2cm}}$$

Options :

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

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

3.  $\log \frac{8}{3}$

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

Question Number : 38 Question Id : 6780945241 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If  $a < 0 < b$  then  $\int_a^b \frac{|x|}{x} dx =$  \_\_\_\_\_

Options :

1.  $b - a$
2.  $a - b$
3.  $a + b$
4. 0

Question Number : 39 Question Id : 6780945242 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\int_0^1 x \tan^{-1} x dx =$  \_\_\_\_\_

Options :

1.  $\frac{\pi}{4} - \frac{1}{2}$
2.  $\frac{\pi}{8} - \frac{1}{2}$
3.  $\frac{\pi}{4} + \frac{1}{2}$
4.  $\frac{\pi}{8} + \frac{1}{2}$

Question Number : 40 Question Id : 6780945243 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\lim_{n \rightarrow \infty} \sum_{r=1}^n \frac{1}{n} e^{\frac{r}{n}} =$  \_\_\_\_\_

Options :

1.  $e$

2.  $(1+e)$

3.  $(1-e)$

4.  $(e-1)$

Question Number : 41 Question Id : 6780945244 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$$\int_0^{\pi/4} \sec^6 x dx = \underline{\hspace{2cm}}$$

Options :

1.  $\frac{8}{3}$

2.  $\frac{28}{15}$

3.  $-\frac{28}{15}$

4.  $\frac{4}{5}$

Question Number : 42 Question Id : 6780945245 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The area bounded by the curve  $y = \log x$ ,  $x$ -axis and the straight line  $x - e = 0$  is \_\_\_\_\_ square units

Options :

1.  $e$

2.  $(e-1)$

3.  $0$

4.  $(1-e)$

Question Number : 43 Question Id : 6780945246 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The volume of the solid generated by rotating one arch of the curve  $y = \sin 3x$  about the  $x$ -axis is----

Options :

1.  $\pi^2$

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

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

4.  $\frac{\pi^2}{6}$

Question Number : 44 Question Id : 6780945247 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$y = cx - c^2$  is the general solution of the differential equation

Options :

1.  $\left(\frac{dy}{dx}\right)^2 - x\left(\frac{dy}{dx}\right) + y = 0$

2.  $\frac{d^2y}{dx^2} = 0$

3.  $\frac{dy}{dx} = c$

4.  $\left(\frac{dy}{dx}\right)^2 + x\left(\frac{dy}{dx}\right) + y = 0$

Question Number : 45 Question Id : 6780945248 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The general solution of the differential equation  $\frac{dy}{dx} + \frac{y}{3} = 1$  is

Options :

1.  $y = 3 + ce^{\frac{x}{3}}$

2.  $y = 3 + ce^{-\frac{x}{3}}$

3.  $3y = c + e^{\frac{x}{3}}$

4.  $3y = c + e^{-\frac{x}{3}}$

Question Number : 46 Question Id : 6780945249 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The differential equation corresponding to the family of curves  $y = ae^{bx}$ , where  $a$  and  $b$  are arbitrary constants, is \_\_\_\_\_

Options :

1.  $\frac{d^2y}{dx^2} = y \frac{dy}{dx}$

2.  $y \frac{d^2y}{dx^2} - \frac{dy}{dx} = 0$

3.  $y \frac{d^2y}{dx^2} = \left(\frac{dy}{dx}\right)^2$

4.  $\frac{dy}{dx} - y^2 = 0$

Question Number : 47 Question Id : 6780945250 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An integrating factor of the differential equation

$(x^2y + y + 1)dx + (x + x^3)dy = 0$  is \_\_\_\_

Options :

1.  $e^x$

2.  $x^2$

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

4.  $x$

Question Number : 48 Question Id : 6780945251 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The differential equation whose solution is  $Ax^2 + By^2$ , where  $A, B$  are arbitrary constants are of ----

Options :

1.  $1^{\text{st}}$  order and  $1^{\text{st}}$  degree



2. 2<sup>nd</sup> order and 1<sup>st</sup> degree

3. 2<sup>nd</sup> order and 2<sup>nd</sup> degree

4. 1<sup>st</sup> order and 2<sup>nd</sup> degree

Question Number : 49 Question Id : 6780945252 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The general solution of the differential equation  $\frac{d^2x}{dt^2} - 4\frac{dx}{dt} + 5x = 0$  is

Options :

1.  $x = (c_1 \cos t + c_2 \sin t)e^{2t}$

2.  $t = (c_1 \cos x + c_2 \sin x)e^{2x}$

3.  $x = (c_1 \cos 2t + c_2 \sin 2t)e^t$

4.  $t = (c_1 \cos 2x + c_2 \sin 2x)e^x$

Question Number : 50 Question Id : 6780945253 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The particular integral of  $(D - 2)^2 y = \sin 2x$  is

Options :

1.  $\frac{\cos 2x}{8}$

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

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

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

Physics

Number of Questions:

25

Display Number Panel:

Yes

Group All Questions:

No

Question Number : 51 Question Id : 6780945254 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The unit of impulse is the same as that of

Options :

1. moment of force
2. linear momentum
3. force
4. pressure

Question Number : 52 Question Id : 6780945255 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the force is given by  $F = at+bt^2$  where  $t$  is the time. The dimensions of  $a$  and  $b$  are

Options :

1.  $MLT^{-4}, MLT^{-2}$
2.  $MLT^{-3}, MLT^{-4}$
3.  $ML^2T^{-3}, ML^2T^{-2}$
4.  $ML^2T^{-3}, ML^3T^{-4}$

Question Number : 53 Question Id : 6780945256 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Vector parallel to  $6\hat{i} + 8\hat{j}$  and having a magnitude of 5 is

Options :

1.  $4\hat{i} + 3\hat{j}$
2.  $12\hat{i} + 16\hat{j}$
3.  $16\hat{i} + 8\hat{j}$
4.  $3\hat{i} + 4\hat{j}$

Question Number : 54 Question Id : 6780945257 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If  $|\vec{A} \times \vec{B}| = K(AB)$  then angle between  $\vec{A}$  and  $\vec{B}$  is

Options :

1.  $\cos^{-1}K$
2.  $\cos^{-1}(1/K)$
3.  $\sin^{-1}K$
4.  $\sin^{-1}(1/K)$

Question Number : 55 Question Id : 6780945258 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A cricket ball is thrown at a speed of 28 m/s in a direction  $30^{\circ}$  above the horizontal. The maximum height reached by the ball is

Options :

1. 10 m
2. 20 m
3. 30 m
4. 40 m

Question Number : 56 Question Id : 6780945259 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two bodies are projected at angles of  $45^{\circ}$  and  $60^{\circ}$  with the horizontal with same velocity simultaneously. Ratio of their horizontal ranges is

Options :

1.  $\sqrt{3} : 2$
2.  $2 : \sqrt{3}$
3. 1:2
4. 2:1

Question Number : 57 Question Id : 6780945260 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A ball thrown by a boy is caught 2 seconds later by another at some distance away on the same level. If the angle of projection is  $30^{\circ}$ , the velocity of projection is

Options :

1. 19.6 m/sec
2. 9.8 m/sec
3. 4.9 m/sec
4. 5.2 m/sec

Question Number : 58 Question Id : 6780945261 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A 200 m wide river flows with a velocity of 5 m/sec. A man crosses the river in the shortest time of 25 sec. If there is no flow and he swims with the same velocity, the time taken to cross the river is

Options :

1.  $\frac{200}{5\sqrt{3}}$  sec
2. 20 sec
3. 25 sec
4.  $25\sqrt{2}$  sec

Question Number : 59 Question Id : 6780945262 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A body of mass 1 Kg lies on an inclined plane of angle  $60^\circ$  to the horizontal. If the coefficient of friction is 0.4, the frictional force along the inclined plane is

Options :

1. 1.96 N
2. 0.98 N
3. 0.49 N
4. 0.245 N

Question Number : 60 Question Id : 6780945263 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A force of 20 Kg weight is required to just slide a wooden box weighing 50 Kg over ice. Then coefficient of static friction between the surfaces in contact is

Options :

1. 0.2

- 2. 0.4
- 3. 0.8
- 4. 0.1

Question Number : 61 Question Id : 6780945264 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A cyclist comes to a skidding stop in 10m. During this process, the force on the cycle due to the road is 200N and is directly opposed to the motion. The work done by the road on the cycle is

- Options :
- 1. 1000 J
  - 2. 2000J
  - 3. -1000J
  - 4. -2000J

Question Number : 62 Question Id : 6780945265 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A sphere of mass 4 Kg is dropped from a certain height. After 5s, its kinetic energy is (g=10 m/s<sup>2</sup>)

- Options :
- 1. 5J
  - 2. 50 J
  - 3. 5 KJ
  - 4. 50 KJ

Question Number : 63 Question Id : 6780945266 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An elevator weighing 500 kg is to be lifted up at a constant velocity of 0.20 m/s. What would be the minimum power of the motor to be used?

- Options :
- 1. 100 W
  - 2. 500 W

3. 980 W

4. 900 W

Question Number : 64 Question Id : 6780945267 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

At  $t=0$ , the displacement of a particle in SHM is half its amplitude. Its initial phase is (referring to mean position)

Options :

1.  $\frac{\pi}{6}$

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

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

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

Question Number : 65 Question Id : 6780945268 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The length of seconds pendulum is 100 cm. To have a period half of this value, the length is to be reduced by

Options :

1. 25 cm

2. 75 cm

3. 50 cm

4. 100 cm

Question Number : 66 Question Id : 6780945269 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Inside a big hall, the reverberation time is

Options :

1. directly proportional to volume

2. inversely proportional to sound absorption

both directly proportional to volume

and

inversely proportional to sound absorption

- 3.
4. depends on temperature

Question Number : 67 Question Id : 6780945270 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The voice of lion is different from that of a mosquito because

Options :

1. the sounds have different pitch
2. they are of different size
3. the two voices travel with different velocities
4. the sounds have different phases

Question Number : 68 Question Id : 6780945271 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A car is travelling at  $\frac{v}{10}$  m/s and sounds horn of frequency 990 Hz. The apparent frequency heard by a police chasing the car at  $\frac{v}{9}$  m/s ( $v$  is the velocity of sound) is

Options :

1. 990 Hz
2. 900 Hz
3. 100 Hz
4. 1000Hz

Question Number : 69 Question Id : 6780945272 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When ice cube melts and becomes water, the ice-water system undergoes a change such that

Options :

1. entropy of the system decreases and internal energy decreases
2. entropy of the system decreases and internal energy increases

entropy of the system increases and internal energy increases

3.

entropy of the system increases and internal energy decreases

4.

Question Number : 70 Question Id : 6780945273 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A mass of 300 gm falls from a height of 3 m ( $g=9.8 \text{ m/s}^2$ ). Assuming that the whole energy is converted into heat, the amount of heat produced is

Options :

1. 2 cal

1.

2. 2.1 cal

2.

3. 4 cal

3.

4. 4.2 cal

4.

Question Number : 71 Question Id : 6780945274 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

During an adiabatic expansion of 2 moles of a gas, the change in internal energy was found to be equal to 100 J. The work done during the process will be equal to

Options :

1. zero

1.

2. -100 J

2.

3. 200 J

3.

4. 100 J

4.

Question Number : 72 Question Id : 6780945275 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The pressure and density of a diatomic gas ( $\gamma = \frac{7}{5}$ ) change adiabatically from

(P,d) to ( $P^1, d^1$ ). If  $\frac{d^1}{d} = 32$ , then  $\frac{P^1}{P}$  is

Options :

1. 128

1.

2. 32

2.



3. 256

4. 64

Question Number : 73 Question Id : 6780945276 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Boyle's law holds good for an ideal gas during

Options :

1. isobaric changes

2. isothermal changes

3. isochoric changes

4. isotopic changes

Question Number : 74 Question Id : 6780945277 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The threshold frequency of metal is  $\nu_0$ . When a light of frequency  $4\nu_0$  is incident on metal then the  $K.E_{\max}$  of emitted electrons is

Options :

1.  $2\nu_0 h$

2.  $3\nu_0 h$

3.  $4\nu_0 h$

4.  $\nu_0 h$

Question Number : 75 Question Id : 6780945278 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Superconductors are \_\_\_\_\_ materials

Options :

1. dielectric

2. paramagnetic

3. ferromagnetic

4. diamagnetic

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

Question Number : 76 Question Id : 6780945279 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Pauli exclusion principle is concerned with

Options :

1. Energy of orbital.
2. Spin of electron.
3. Energy of electron
4. Angular momentum of electron

Question Number : 77 Question Id : 6780945280 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

According to Bohr's model of hydrogen atom, the following is quantized

Options :

1. Linear momentum
2. Linear velocity
3. Angular momentum
4. Angular velocity

Question Number : 78 Question Id : 6780945281 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

How many 'd' – orbitals have two perpendicular nodal planes

Options :

1. Two
2. Three
3. Four
4. Five

Question Number : 79 Question Id : 6780945282 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In sodium chloride crystal, each  $\text{Na}^+$  ion is surrounded by

Options :

1. Two  $\text{Cl}^-$  ions
2. Four  $\text{Cl}^-$  ions
3. Six  $\text{Cl}^-$  ions
4. Eight  $\text{Cl}^-$  ions

Question Number : 80 Question Id : 6780945283 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following molecule contains a  $\pi$  – bond

Options :

1.  $\text{H}_2$
2.  $\text{O}_2$
3.  $\text{F}_2$
4.  $\text{HCl}$

Question Number : 81 Question Id : 6780945284 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is insoluble in water?

Options :

1. Alcohol
2. Ammonia
3. Benzene
4. Acetone

Question Number : 82 Question Id : 6780945285 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The normality of 2.3 M  $\text{H}_2\text{SO}_4$  solution is

Options :

1. 0.46N
2. 0.23 N
3. 2.3 N

4. 4.6N

Question Number : 83 Question Id : 6780945286 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

8 grams of substance of molecular weight 40 is dissolved in 250 g of water. Then the molality of the solution is

Options :

1. 0.4
2. 0.8
3. 0.2
4. 0.6

Question Number : 84 Question Id : 6780945287 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The pH value of 0.05M Ba(OH)<sub>2</sub> solution is

Options :

1. 10
2. 12
3. 13
4. 11

Question Number : 85 Question Id : 6780945288 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following molecule is not a Lewis Base?

Options :

1. H<sub>2</sub>O
2. BF<sub>3</sub>
3. NH<sub>3</sub>
4. CO

Question Number : 86 Question Id : 6780945289 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

During the electrolysis of brine, 710 g of Cl<sub>2</sub> was liberated at anode. The weight of NaOH formed

Options :

1. 800 g
2. 400 g
3. 80 g
4. 40 g

Question Number : 87 Question Id : 6780945290 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the Daniell cell, which electrode acts as anode?

Options :

1. Cu
2. Hg
3. Zn
4. Pt

Question Number : 88 Question Id : 6780945291 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The molar conductance of HCl is more than that of NaCl because

Options :

1. NaCl is more polar than KCl
2. NaCl is ionic while HCl is covalent
3. Ionic mobility of  $H^+$  is more than that of  $Na^+$
4.  $H^+$  get hydrated.

Question Number : 89 Question Id : 6780945292 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The units for electrochemical equivalent are

Options :

1. grams
2. grams ampere
3. Coulomb
4. Grams per coulomb

Question Number : 90 Question Id : 6780945293 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Zeolite softening process removes

Options :

1. Only permanent hardness of water
2. Only temporary hardness of water
3. Both temporary and permanent hardness of water
4. The dissolved gases in permanent hard water.

Question Number : 91 Question Id : 6780945294 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The permanent hardness of water is caused by the presence of

Options :

1. Bicarbonates of Ca and Mg
2. Carbonates of Na and K
3. Chlorides and Sulphates of Ca and Mg.
4. Phosphates of Na and K

Question Number : 92 Question Id : 6780945295 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The secondary treatment of water uses \_\_\_\_\_ to consume wastes in water.

Options :

1. Filtration
2. Sedimentation
3. Chemicals
4. Microorganisms

Question Number : 93 Question Id : 6780945296 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Difficult to monitor and very dangerous form of corrosion is

Options :

1. Galvanic
2. Pitting

3. Crevice

4. Stress

Question Number : 94 Question Id : 6780945297 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When Pt and Co are electrically connected, which one gets corroded?

Options :

1. Co

2. Pt

3. None

4. both

Question Number : 95 Question Id : 6780945298 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What rubber was invented when Dr. Joseph C. Patrick tried to make antifreeze?

Options :

1. Methyl rubber

2. Chloroprene

3. Bruna N

4. Thiokol

Question Number : 96 Question Id : 6780945299 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The first plastic ever synthesized was called \_\_\_\_\_.

Options :

1. Bakelite

2. Nylon

3. Dacron

4. Cellulose

Question Number : 97 Question Id : 6780945300 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

\_\_\_\_\_ is a brand of polyester textile fiber that is wrinkle resistant and strong

Options :

1. Cellulose
2. Dacron
3. Bakelite
4. Nylon

Question Number : 98 Question Id : 6780945301 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Water gas is a mixture of

Options :

1.  $H_2 + CO$
2.  $N_2 + CO$
3.  $H_2 + CO_2$
4.  $H_2 + CH_4$

Question Number : 99 Question Id : 6780945302 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a greenhouse gas?

Options :

1. CO
2.  $CO_2$
3. water vapour
4.  $CH_4$

Question Number : 100 Question Id : 6780945303 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Burning of fossil fuels causes

Options :

1. Global warming
2. Ozone depletion
3. Acid rain
4. Eutrophication



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

Question Number : 101 Question Id : 6780945304 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A high resistance reading in both forward bias and reverse bias directions indicate that the diode is

Options :

1. An open diode
2. A shorted diode
3. A good diode
4. A defective ohmmeter

Question Number : 102 Question Id : 6780945305 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which capacitance dominates in forward bias

Options :

1. Depletion
2. Transition
3. Diffusion
4. Conversion

Question Number : 103 Question Id : 6780945306 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A type of diode typically used for tuning circuit applications is

Options :

1. Gunn diode
2. Varactor diode
3. Schottky diode
4. LED

Question Number : 104 Question Id : 6780945307 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

FET is \_\_\_\_\_ device and BJT is \_\_\_\_\_ device

Options :

1. Voltage controlled, Current controlled
2. Current controlled, Voltage controlled
3. Voltage controlled, Voltage controlled
4. Current controlled, Current controlled

Question Number : 105 Question Id : 6780945308 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the percentage of regulation if  $V_{NL} = 20V$  and  $V_{FL} = 19.8 V$ ?

Options :

1. 0 %
2. 1 %
3. 0.1 %
4. 0.5 %

Question Number : 106 Question Id : 6780945309 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Negative resistance characteristics in Unipolar Junction Transistor occurs,

Options :

1. Between Peak and Valley currents
2. At peak current
3. At valley current
4. In saturation region

Question Number : 107 Question Id : 6780945310 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Transformer Utilization Factor of Bridge rectifier is

Options :

1. 0.287
2. 0.812
3. 0.984
4. 0.693

Question Number : 108 Question Id : 6780945311 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Voltage buffer is the application of

Options :

1. Common Emitter amplifier
2. Emitter follower
3. Common Base amplifier
4. Common Drain amplifier

Question Number : 109 Question Id : 6780945312 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following coupling provides high power amplification

Options :

1. Direct coupling
2. RC coupling
3. Transformer coupling
4. Impedance coupling

Question Number : 110 Question Id : 6780945313 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The type of power amplifier which exhibits crossover distortion in its output is

Options :

1. Class A
2. Class AB
3. Class B
4. Class C

Question Number : 111 Question Id : 6780945314 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Input impedance of an ideal operational amplifier is,

Options :

1. Zero
2.  $100 \Omega$
3.  $1 M \Omega$
4. Infinite

In operational amplifiers, the voltage required to make the output zero for no signal condition is known as,

Options :

1. Slew rate
2. Bias voltage
3. Input offset voltage
4. CMRR

\_\_\_\_\_ multivibrator is used as an amplitude comparator.

Options :

1. Bistable
2. Monostable
3. Astable
4. Schmitt Trigger

In bootstrap sweep circuit, the amplifier gain should be,

Options :

1. Infinite
2. Finite
3. Unity
4. Zero

The frequency of oscillation of Astable multivibrator using 555 timer is given as,

Options :

1.  $\frac{1.45}{(R_A + R_B)C}$

2.  $1.45(R_A + R_B)C$

3.  $\frac{1.45}{(R_A + 2R_B)C}$

4.  $1.45(R_A + 2R_B)C$

Question Number : 116 Question Id : 6780945319 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Superposition theorem can be applied only to circuits having

Options :

1. resistive elements

2. passive elements

3. non-linear elements

4. linear bilateral elements

Question Number : 117 Question Id : 6780945320 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For maximum transfer of power, internal resistance of the source should be

Options :

1. equal to load resistance

2. less than the load resistance

3. greater than the load resistance

4. zero

Question Number : 118 Question Id : 6780945321 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

“Considering two loops A and B of a network and if an ideal voltage source E in loop A produces a current I in loop B, then interchanging positions, if an identical source in loop B produces the same current in loop A” – the statement is associated with,

Options :

1. Compensation theorem

2. Superposition theorem

3. Reciprocity theorem

4. Millman's theorem

Question Number : 119 Question Id : 6780945322 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Application of Norton's theorem to a circuit yields

Options :

1. Equivalent current source and admittance in series
2. Equivalent current source and admittance in parallel
3. Equivalent voltage source and impedance in series
4. Equivalent voltage source and impedance in parallel

Question Number : 120 Question Id : 6780945323 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The imaginary part of admittance is called as,

Options :

1. Resistance
2. Reactance
3. Susceptance
4. Conductance

Question Number : 121 Question Id : 6780945324 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Q of a circuit can be increased by

Options :

1. increasing BW
2. decreasing BW
3. independent of BW
4. decreasing  $f_0$

Question Number : 122 Question Id : 6780945325 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The VSWR of a perfectly matched transmission line is \_\_\_\_\_

Options :

1. 1
2. 0

3. -1

4. 5

Question Number : 123 Question Id : 6780945326 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the load impedance in a transmission line is  $Z_L$  and  $Z_0$  is the characteristic

impedance, reflection coefficient is

Options :

1.  $\frac{Z_L + Z_0}{Z_L - Z_0}$

2.  $\frac{Z_L - Z_0}{Z_L + Z_0}$

3.  $\frac{Z_L}{Z_0}$

4.  $\frac{Z_0}{Z_L}$

1.  $\frac{Z_L}{Z_0}$

2.  $\frac{Z_0}{Z_L}$

3.  $\frac{Z_L}{Z_0}$

4.  $\frac{Z_0}{Z_L}$

Question Number : 124 Question Id : 6780945327 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a series type ohmmeter

Options :

1. 'O' marking is on the left hand side of scale while  $\infty$  marking is on the right

hand side

2. 'O' marking is on the right hand side of scale and  $\infty$  marking on the left

hand side

3. Two marking can be left or right side of the scale

4. 'O' marking is in the middle of scale

1. 'O' marking is in the middle of scale

Question Number : 125 Question Id : 6780945328 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A Q-meter is working on the principle of.....

Options :

1. Parallel resonance

2. Series resonance

Series resonance

2.

Either on Parallel or Series resonance

3.

Neither on Parallel nor Series resonance

4.

Question Number : 126 Question Id : 6780945329 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A sampling CRO is used for.....

Options :

HF

1.

VLF

2.

VHF

3.

LF

4.

Question Number : 127 Question Id : 6780945330 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Time base generators are called.....

Options :

compensating network

1.

phantastron

2.

sweep circuit

3.

restoring circuit

4.

Question Number : 128 Question Id : 6780945331 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The sensitivity of voltmeter is defined as

Options :

$\Omega / V$

1.

$V / \Omega$

2.

$I / \Omega$

3.

$\Omega / I$

4.

Question Number : 129 Question Id : 6780945332 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The range of AF oscillators



Options :

1. 10 kHz to 30 MHz
2. 20 HZ to 20kHz
3. dc to 5 MHz
4. 1.5 MHz to 30 MHz

Question Number : 130 Question Id : 6780945333 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An SCR combines the features of .....

Options :

1. A rectifier and resistance
2. A rectifier and transistor
3. A rectifier and capacitor
4. A rectifier and inductor

Question Number : 131 Question Id : 6780945334 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A triac has ..... semiconductor layers

Options :

1. Two
2. Three
3. Four
4. Five

Question Number : 132 Question Id : 6780945335 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A chopper

Options :

1. converts constant voltage dc into ac and then into variable voltage dc
2. converts constant voltage dc into variable voltage dc directly
3. converts ac of one frequency into ac of another frequency
4. converts ac to dc

Question Number : 133 Question Id : 6780945336 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

\_\_\_\_\_ is a timer which controls the number of cycles for which the welding current flows and the number of cycles for which it is disallowed

Options :

1. pulsation timer
2. line control timer
3. sequence timer
4. heat control timer

Question Number : 134 Question Id : 6780945337 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

\_\_\_\_\_ method has leading power factor

Options :

1. resistance heating
2. dielectric heating
3. arc heating
4. inductive heating

Question Number : 135 Question Id : 6780945338 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the carrier of a 100% modulated AM wave is suppressed, the percentage power saving will be---

Options :

1. 50
2. 150
3. 100
4. 66.66

Question Number : 136 Question Id : 6780945339 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The image channel rejection in a super heterodyne receiver comes from --

Options :

1. IF stages only

2. RF stages only
3. detector and RF stages only
4. detector, RF and IF stages

Question Number : 137 Question Id : 6780945340 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The most commonly used signaling for PCM is --

Options :

1. RZ
2. NRZ
3. Bipolar
4. Manchester

Question Number : 138 Question Id : 6780945341 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The FM modulation Index ---

Options :

1. Increases with both frequency deviation and modulation frequency
2. Decreases with frequency deviation and increases with modulation frequency
3. Increases with frequency deviation and decreases with modulation frequency
4. Is equal to twice the frequency deviation

Question Number : 139 Question Id : 6780945342 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In FM, the amount of frequency deviation is proportional to--

Options :

1. Amplitude of modulating signal
2. frequency of the carrier
3. the frequency of modulating signal
4. phase of modulating signal

Question Number : 140 Question Id : 6780945343 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In phase modulation, the frequency deviation is---

Options :

1. Independent of the modulating signal frequency
2. Inversely proportional to the modulating signal frequency
3. Directly proportional to the modulating signal frequency
4. Inversely proportional to the square root of the modulating frequency

Question Number : 141 Question Id : 6780945344 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Ground wave is effective when the transmitting and receiving antennas are....

Options :

1. Vertically Polarized
2. Horizontally Polarized
3. Circularly Polarized
4. Elliptically Polarized

Question Number : 142 Question Id : 6780945345 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Space wave field strength depends on....

Options :

1. only on direct ray
2. only on ground reflected rays
3. both on direct and ground reflected rays
4. inversely proportional to antenna heights

Question Number : 143 Question Id : 6780945346 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Critical frequency of the ionospheric layer, if  $N_{\max}$  is  $1 \times 10^6$  electrons/m<sup>3</sup> is....

Options :

1. 9KHz

2. 81KHz
3. 9MHz
4. 81MHz

Question Number : 144 Question Id : 6780945347 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

During day time the ionospheric layer that does not exist is

Options :

1. D
2. F
3. F1
4. F2

Question Number : 145 Question Id : 6780945348 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The wavelength of a 100MHz Electro Magnetic Wave propagating through a perfect non-magnetic dielectric with relative permittivity '9' is-----

Options :

1. 3m
2. 3cm
3. 100cm
4. 10cm

Question Number : 146 Question Id : 6780945349 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An EM wave incident on a perfect conductor is-----

Options :

1. Entirely reflected
2. Partially reflected
3. Partially Transmitted
4. Fully Transmitted

Question Number : 147 Question Id : 6780945350 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Step-index optical fiber core refractive index is 1.48 with core-cladding index

difference 0.01, then cladding refractive index is-----

Options :

1. 0.0148
2. 1.46
3. 1.49
4. 148

Question Number : 148 Question Id : 6780945351 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The power pattern of surface emitter LED is----

Options :

1. Half-power pattern
2. Full-power pattern
3. Lambertian Pattern
4. Quarter-power pattern

Question Number : 149 Question Id : 6780945352 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The following, which splicing technique is used for permanent joint-----

Options :

1. Fusion splice
2. V-groove splicing
3. Elastic -tube splice
4. Expanded beam splice

Question Number : 150 Question Id : 6780945353 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The directivity of a half-wave dipole is-----

Options :

1. 1.50
2. 1.64
3. 1.0

3.28

4.

Question Number : 151 Question Id : 6780945354 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In N-number element yagi-uda antenna, number of reflectors are----

Options :

1. 1
2. N
3. N-1
4. N-2

Question Number : 152 Question Id : 6780945355 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In parabolic antenna, reflector is called-----

Options :

1. Feed Antenna
2. Primary antenna
3. Secondary antenna
4. Directive antenna

Question Number : 153 Question Id : 6780945356 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The duplexer consists of -----

Options :

1. TR & ATR
2. only TR
3. only ATR
4. Oscillator

Question Number : 154 Question Id : 6780945357 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In Radar system, if the transmitted power is increased by 16 times, then the

detection range is -----

Options :

increased by 16 times

1.

reduced by 16times

2.

doubled

3.

reduced to half

4.

Question Number : 155 Question Id : 6780945358 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The basic principle of operation of Klystron is -----

Options :

Density Modulation

1.

Velocity modulation

2.

Frequency Modulation

3.

Phase modulation

4.

Question Number : 156 Question Id : 6780945359 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A satellite is a Radio repeater in ----

Options :

The Sky

1.

Under Ground

2.

Under water

3.

Near the Ground Surface

4.

Question Number : 157 Question Id : 6780945360 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A satellite system consists of a ---

Options :

Transponder only

1.

Both Transponder and Ground-Based Station

2.

Radar and Ground-Based station

3.

Ground-Based Station only

4.



Question Number : 158 Question Id : 6780945361 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The cut-off wavelength for TE<sub>10</sub> mode for a standard rectangular waveguide is ---

Options :

1.  $2a$
2.  $a$
3.  $a/2$
4.  $4a$

Question Number : 159 Question Id : 6780945362 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The dominant mode in most waveguides is----

Options :

1. TM<sub>11</sub>
2. TM<sub>10</sub>
3. TE<sub>10</sub>
4. TE<sub>11</sub>

Question Number : 160 Question Id : 6780945363 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The binary equivalent of decimal number 57 is,

Options :

1. 111001
2. 01010111
3. 101111
4. 1100101

Question Number : 161 Question Id : 6780945364 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The minimum number of NAND gates required to implement

$$A + A\bar{B} + A\bar{B}C \text{ is}$$

Options :

1. 0
2. 1
3. 4

Question Number : 162 Question Id : 6780945365 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What logic function is produced by adding inverters to the inputs of OR gates.

Options :

1. NOR
2. NAND
3. AND
4. X-NOR

Question Number : 163 Question Id : 6780945366 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A full adder can be realized using,

Options :

1. One half adder, two OR gates
2. Two half adders, one OR gate
3. Two half adders, two OR gates
4. Two half adders, one AND gate

Question Number : 164 Question Id : 6780945367 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Toggle mode for a J-K flip-flop is,

Options :

1.  $J=0, K=0$
2.  $J=1, K=0$
3.  $J=0, K=1$
4.  $J=1, K=1$

Question Number : 165 Question Id : 6780945368 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

How many states a 6-bit ripple counter can have ?

Options :

1. 6
2. 12

32

3.

64

4.

Question Number : 166 Question Id : 6780945369 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A register which is capable to shift the data both to the right and left is called,

Options :

1. Parallel register

1.

2. Universal register

2.

3. Serial register

3.

4. Static shift register

4.

Question Number : 167 Question Id : 6780945370 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is an example of volatile memory?

Options :

1. ROM

1.

2. RAM

2.

3. PROM

3.

4. Hard-disk

4.

Question Number : 168 Question Id : 6780945371 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Successive approximation type ADC with N output bits, the number of clocks

required is,

Options :

1. N

1.

2.  $2N+1$

2.

3.  $2^N$

3.

4.  $2^N-1$

4.

Question Number : 169 Question Id : 6780945372 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is a D/A converter?

Options :

1. Successive approximation type
2. Dual slope technique
3. Weighted resistor type
4. Counter type technique

Question Number : 170 Question Id : 6780945373 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a 8085 microprocessor, the register which holds address of the next instruction to be fetched is,

Options :

1. Accumulator
2. Program counter
3. Stack pointer
4. Instructor Register

Question Number : 171 Question Id : 6780945374 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

8085 microprocessor does not have

Options :

1. Zero flag
2. Sign flag
3. Parity flag
4. Overflow flag

Question Number : 172 Question Id : 6780945375 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The 8051 Microcontroller is of .....pin package as a.....Processor

Options :

1. 30, 1 byte
2. 20, 1 byte

3. 40, 8 bit

4. 40, 8 byte

Question Number : 173 Question Id : 6780945376 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In 8051, which interrupt has highest priority

Options :

1. IE1

2. TF0

3. IE0

4. TF1

Question Number : 174 Question Id : 6780945377 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

8051 has.....16 bit counter/timers

Options :

1. 1

2. 2

3. 3

4. 4

Question Number : 175 Question Id : 6780945378 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In 8085 processor, which interrupt is Edge trigger interrupt

Options :

1. Trap

2. RST 7.5

3. RST 6.5

4. RST 5.5

Question Number : 176 Question Id : 6780945379 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The interrupt having highest priority in 8085 processor is

Options :

1. Trap

2. RST 7.5
3. RST 6.5
4. RST 5.5

Question Number : 177 Question Id : 6780945380 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

AJMP will cause a jump with in.....Range

Options :

1. 16KB
2. 64KB
3. 2KB
4. 1KB

Question Number : 178 Question Id : 6780945381 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The instruction used to access data from external memory

Options :

1. MOV
2. MOVC
3. MOVX
4. MOVN

Question Number : 179 Question Id : 6780945382 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Registers r15,r13 in ARM Processor are

Options :

1. LR,SP
2. SP,PC
3. PC,SP
4. SP,LR

Question Number : 180 Question Id : 6780945383 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Trace period of a horizontal line is

Options :

1. 18720  $\mu\text{s}$

2. 1280  $\mu\text{s}$

3. 20 ms

4. 100s

Question Number : 181 Question Id : 6780945384 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Image Orthicon is based on

Options :

1. Photo conduction principle

2. Photo emission principle

3. Thermal emission

4. Electromagnetic principle

Question Number : 182 Question Id : 6780945385 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Operation of CCD image sensors is based on

Options :

1. Photo conductivity

2. Photo voltaic Principle

3. Photo emission

4. Photo electric

Question Number : 183 Question Id : 6780945386 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

FM detector employed in the sound section of a television receiver is generally:

Options :

1. A ratio detector

2. A frequency discriminator

3. Amplifier

4. Loud speaker

Question Number : 184 Question Id : 6780945387 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Television picture tube has:

Options :

1. Magnetic focus and electrostatic deflection
2. Magnetic focus and magnetic deflection
3. Electrostatic focus and electrostatic deflection
4. Electrostatic focus and magnetic deflection

Question Number : 185 Question Id : 6780945388 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Optical fibers use reflection to guide light through

Options :

1. Light
2. channel
3. plastic
4. metal

Question Number : 186 Question Id : 6780945389 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which network supports pipelining effect?

Options :

1. Circuit-switched networks
2. Message-switched networks
3. Packet switched networks
4. Virtual circuit switched networks.

Question Number : 187 Question Id : 6780945390 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The layer responsible for end to end delivery of the entire message is

Options :

1. Application layer
2. Transport layer



3. Session layer
4. Data link layer

Question Number : 188 Question Id : 6780945391 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which device is used to handle carrier detection and collision detection in LANs?

Options :

1. Router
2. Repeater
3. Packet assembler/disassembler
4. Trans-receiver

Question Number : 189 Question Id : 6780945392 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In which method, one channel carries all transmissions simultaneously

Options :

1. TDMA
2. CDMA
3. FDMA
4. CSMA

Question Number : 190 Question Id : 6780945393 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Transmission control protocol (TCP), is also protocol like,

Options :

1. UDP
2. SCTP
3. CMP
4. IP

Question Number : 191 Question Id : 6780945394 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In synchronous transfer mode(ATM), network to network interfaces are used to connect the

Options :

1. Cells
2. frames
3. endpoints
4. switches

Question Number : 192 Question Id : 6780945395 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

How will you print `\n` on the screen?

Options :

1. `printf("\n");`
2. `echo "\\n";`
3. `printf('\n');`
4. `printf("\\n");`

Question Number : 193 Question Id : 6780945396 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Preprocessor feature that supply line numbers and filenames to compiler is called?

Options :

1. Selective inclusion
2. macro substitution
3. Concatenation
4. Line control

Question Number : 194 Question Id : 6780945397 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value obtained in the function is given back to main by using \_\_\_\_\_

keyword?

Options :

1. return
2. static
3. new
4. volatile

Question Number : 195 Question Id : 6780945398 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following are the two main components of the CPU?

Options :

1. Control Unit and Registers
2. Registers and Main Memory
3. Control unit and ALU
4. ALU and bus

Question Number : 196 Question Id : 6780945399 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Personal computers used a number of chips mounted on a main circuit board.

What is the common name for such boards?

Options :

1. Daughterboard
2. Motherboard
3. Father board
4. Child board

Question Number : 197 Question Id : 6780945400 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The first recognized modern embedded system is

Options :

1. Apple Computer
2. Apollo Guidance Computer
3. Calculator
4. Cell phone

Question Number : 198 Question Id : 6780945401 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In VLSI design, which process deals with the determination of resistance & capacitance of interconnections?

Options :

1. Floor-planning
2. Placement & Routing
3. Testing
4. Extraction

Question Number : 199 Question Id : 6780945402 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A set of Concurrent assignment statements to represent-----style of modeling in Verilog HDL.

Options :

1. Behavioral
2. Data flow
3. Structural
4. Mixed style

Question Number : 200 Question Id : 6780945403 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An IC containing more than 100000 gates will be designated as

Options :

1. LSI
2. VLSI
3. MSI
4. ULSI