DU MTech Microwave Electronics

Topic:- DU_J18_MTECH_ME

1) The Poynting vector $\vec{S}$ of an electromagnetic wave is given by

[Question ID = 51857]

1. $\vec{E}\times\vec{H}$ [Option ID = 87422]
2. $\vec{E}\times\vec{B}$ [Option ID = 87420]
3. $\frac{\vec{E}}{\vec{H}}$ [Option ID = 87421]
4. $\frac{\vec{E}}{\vec{B}}$ [Option ID = 87423]

Correct Answer :-

- $\vec{E}\times\vec{H}$ [Option ID = 87422]

2) A potential field exists in a region where $\varepsilon = f(x)$. If $\rho_v = 0$, $\bar{\nabla}^2 V$ is

[Question ID = 51856]

1. $-f(x)\frac{dF}{dx}\frac{\partial V}{\partial x}$ [Option ID = 87419]
2. $-\frac{1}{f(x)}\frac{dF}{dx}\frac{\partial V}{\partial x}$ [Option ID = 87417]
3. $\frac{1}{f(x)}\frac{dF}{dx}\frac{\partial V}{\partial x}$ [Option ID = 87418]
4. $f(x)\frac{dF}{dx}\frac{\partial V}{\partial x}$ [Option ID = 87416]

Correct Answer :-

- $-\frac{1}{f(x)}\frac{dF}{dx}\frac{\partial V}{\partial x}$ [Option ID = 87417]

3) Find the correct match between group-I and group-II

Group-I	Group-II
P. varactor diode	1. voltage reference
Q. PIN diode	2. high frequency switches
R. Zener diode	3. tuned circuits
S. Schottky diode	4. current controlled attenuator

[Question ID = 51832]

1. P Q R S 4 2 1 3 [Option ID = 87323]
2. P Q R S 2 3 4 1 [Option ID = 87320]
3. P Q R S 3 4 1 2 [Option ID = 87321]
4. P Q R S 3 4 2 1 [Option ID = 87322]

Correct Answer :-

- P Q R S 3 4 1 2 [Option ID = 87321]

4) A triangle in the xy-plane is bounded by the straight lines $2x = 3y$, $y = 0$ and $x = 3$. The volume above the triangle and under the plane $x + y + z = 6$ is

[Question ID = 51782]

1. 20 [Option ID = 87123]
2. 10 [Option ID = 87122]
3. 10.5 [Option ID = 87120]
4. 15 [Option ID = 87121]

Correct Answer :-

- 10 [Option ID = 87122]

5) The measured reflection coefficient of an isolator at input port is 0.1, the percentage ratio of power reflected to power incident is

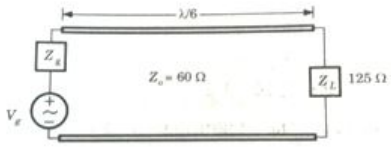
[Question ID = 51869]

1. 1 % [Option ID = 87470]
2. 0.1 % [Option ID = 87471]
3. 0 % [Option ID = 87469]
4. 10 % [Option ID = 87468]

Correct Answer :-

- 1 % [Option ID = 87470]

6) Consider the lossless transmission shown in figure



The SWR is

[Question ID = 51863]

1. 2.08 [Option ID = 87444]
2. 1.63 [Option ID = 87445]
3. 2.44 [Option ID = 87446]
4. 1.93 [Option ID = 87447]

Correct Answer :-

- 2.08 [Option ID = 87444]

7) The longest wavelength that can be absorbed by silicon, which has the bandgap of 1.12 eV is 1.1 μm. If the largest wavelength that can be absorbed by another material is 0.87 μm, then the band gap of this material is

[Question ID = 51830]

1. 1.416 eV [Option ID = 87314]
2. 0.70 eV [Option ID = 87312]
3. 0.49 eV [Option ID = 87315]
4. 2.00 eV [Option ID = 87313]

Correct Answer :-

- 1.416 eV [Option ID = 87314]

8)

What is $\lim_{\theta \to 0} \frac{sin\theta}{\theta}$ equal to

[Question ID = 51794]

1. θ [Option ID = 87171]
2. 1 [Option ID = 87170]
3. $Sin\theta$ [Option ID = 87169]
4. 0 [Option ID = 87168]

Correct Answer :-

- 1 [Option ID = 87170]

9) CMOS technology is used in

[Question ID = 51810]

1. Microprocessor [Option ID = 87233]
2. Both microprocessor and digital logic [Option ID = 87234]
3. Digital logic [Option ID = 87232]
4. Inverter [Option ID = 87235]

Correct Answer :-

- Both microprocessor and digital logic [Option ID = 87234]

10) The input impedance of a lossless transmission line is 100 Ω when terminated in a short-circuit, and 64 Ω when terminated in an open circuit the characteristic impedance of the line is

[Question ID = 51862]

1. 164 Ω [Option ID = 87441]
2. 36 Ω [Option ID = 87443]
3. 64 Ω [Option ID = 87442]
4. 80 Ω [Option ID = 87440]

Correct Answer :-

- 80 Ω [Option ID = 87440]

11) A certain matched antenna radiates one watt (P_r) when driven with voltage V_o = 10 volts. The radiation resistance (R_r) of antenna is

[Question ID = 51871]

1. 36.5 Ω [Option ID = 87479]
2. 50 Ω [Option ID = 87478]
3. 377 Ω [Option ID = 87477]
4. 5 Ω [Option ID = 87476]

Correct Answer :-

- 50 Ω [Option ID = 87478]

12) In a silicon sample the electron concentration drops linearly from 10^{18} cm^{-3} to 10^{16} cm^{-3} over a length of 2.0 μm. The current density due to the electron diffusion current is (D_n = 35 cm^2/s

[Question ID = 51821]

1. 2.8×10^9 A/cm^2 [Option ID = 87278]

9.3×10^{9} A/cm^2

2. [Option ID = 87279]
3. 2.8×10^{4} A/cm^2 [Option ID = 87277]
4. 9.3×10^{4} A/cm^2 [Option ID = 87276]

Correct Answer :-

- 2.8×10^{4} A/cm^2 [Option ID = 87277]

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13) What would be the nature of 'Z_L' if 'Z_{eq}' reactance is inductive according to ' Max power Transfer theorem'?

[Question ID = 51804]

1. Capacitive [Option ID = 87208]
2. Resistive [Option ID = 87210]
3. All of the above [Option ID = 87211]
4. Inductive [Option ID = 87209]

Correct Answer :-

- Capacitive [Option ID = 87208]

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14) In binary PCM system for rectangular pulses, if the quantization levels are increased from 2 to 8, the relative bandwidth requirement will

[Question ID = 51836]

1. remain same [Option ID = 87337]
2. be tripled [Option ID = 87336]
3. be doubled [Option ID = 87338]
4. become four times [Option ID = 87339]

Correct Answer :-

- be tripled [Option ID = 87336]

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15) A 50 ohm line is terminated by a purely reactive load of reactance given by $Z_L = j\,100$. The VSWR on the line is

[Question ID = 51858]

1. 4 [Option ID = 87424]
2. ∞ [Option ID = 87427]
3. -4 [Option ID = 87425]
4. 0 [Option ID = 87426]

Correct Answer :-

- ∞ [Option ID = 87427]

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16) The Boolean expression $(X+Y)(X+\bar{Y})(\bar{X}+Y)$ is equivalent to

[Question ID = 51811]

1. $X\bar{Y}$ [Option ID = 87237]
2. $\overline{XY}$ [Option ID = 87239]
3. $\bar{X}Y$ [Option ID = 87238]
4. XY [Option ID = 87236]

Correct Answer :-

- XY [Option ID = 87236]

17) A source Vs (t) = V cos 100πt has an internal impedance of (4+j3)Ω. If a purely resistive load connected to this source has to extract the maximum power out of the source, find it'sValue.

[Question ID = 51803]

1. 5Ω [Option ID = 87206]
2. 15Ω [Option ID = 87205]
3. 20Ω [Option ID = 87207]
4. 10Ω [Option ID = 87204]

Correct Answer :-

- 5Ω [Option ID = 87206]

18) A particular material has 2.7×10^{29} atoms/m^3 and each atom has a dipole moment of $2.6\times10^{-30}\hat{u}_y$ A. m^2. The magnetic field intensity $\hat{H}$ in material ($\mu_r = 4.2$) is

[Question ID = 51852]

1. $0.17\ \hat{u}_y$ A/m [Option ID = 87402]
2. $2.04\ \hat{u}_y$ A/m [Option ID = 87403]
3. $0.22\ \hat{u}_y$ A/m [Option ID = 87400]
4. $2.94\ \hat{u}_y$ A/m [Option ID = 87401]

Correct Answer :-

- $0.22\ \hat{u}_y$ A/m [Option ID = 87400]

19) A charged particle is moving in the presence of an electric field $\vec{E}$ and magnetic field $\vec{B}$. The directions of the fields are such that the particle moves in a straight line and its velocity $\vec{v}$ increases. Which of the following is true?

[Question ID = 51850]

1. $\vec{E}$, $\vec{B}$ and $\vec{v}$ are all parallel to each other [Option ID = 87393]
2. $\vec{B} \bullet \vec{v} = 0$ and $\vec{E}$ is arbitrary [Option ID = 87395]
3. $\vec{E} \bullet \vec{B} = 0$ and $\vec{v}$ is arbitrary [Option ID = 87392]
4. $\vec{E} \bullet \vec{v} = 0$ and $\vec{B}$ is arbitrary [Option ID = 87394]

Correct Answer :-

- $\vec{E}$, $\vec{B}$ and $\vec{v}$ are all parallel to each other [Option ID = 87393]

20) A PAM source generates four symbols 3V, 1V, -1V, and -3V with probability of p(3) =0.2, p(1)= 0.3, p(-1) = 0.3, p(-3) = 0.2 respectively. The variance for this source will be

[Question ID = 51838]

1. 4.2 V [Option ID = 87347]
2. 3.6 V [Option ID = 87346]
3. 3.2 V [Option ID = 87345]
4. 4.6 V [Option ID = 87344]

Correct Answer :-

- 4.2 V [Option ID = 87347]

21) A receiver tunes signals from 550 kHz to 1600 kHz with an IF of 455 kHz. The frequency tuning range ratio for the oscillator section of the receiver is nearly

[Question ID = 51847]

1. 1.65 [Option ID = 87383]
2. 1.60 [Option ID = 87381]
3. 2.90 [Option ID = 87380]
4. 2.05 [Option ID = 87382]

Correct Answer :-

- 2.05 [Option ID = 87382]

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22) If $F(s)$ is the Laplace transform of a function $f(t)$, then the Laplace transform of $\int_0^t f(t)dt$ is given by

[Question ID = 51775]

1. $\frac{F(s)}{s-1}$ [Option ID = 87094]
2. $\frac{F(s)}{s}$ [Option ID = 87092]
3. $sF(s)$ [Option ID = 87093]
4. $s^2F(s)$ [Option ID = 87095]

Correct Answer :-

- $\frac{F(s)}{s}$ [Option ID = 87092]

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23) An rms voltage of 1 volt is applied at the sending end of a telephone cable of length 1000 meters. The attenuation in the cable is 1 dB/m. The rms voltage at receiving end of the cable is,

[Question ID = 51833]

1. 10^{50} V [Option ID = 87324]
2. 10^{5} V [Option ID = 87325]
3. 10^{-5} V [Option ID = 87326]
4. 10^{-50} V [Option ID = 87327]

Correct Answer :-

- 10^{-50} V [Option ID = 87327]

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24) A lossless transmission line operating at 4.5 GHz has L = 2.6 μH/m and Zo = 80 Ω. The phase constant and the phase velocity v is

[Question ID = 51864]

1. 148 rad/m, 30.8×10^5 m/s [Option ID = 87450]
2. 919 rad/m, 274×10^5 m/s [Option ID = 87448]
3. 148 rad/m, 274×10^5 m/s [Option ID = 87449]
4. 919 rad/m, 30.8×10^6 m/s [Option ID = 87451]

Correct Answer :-

- 919 rad/m, 30.8×10^6 m/s [Option ID = 87451]

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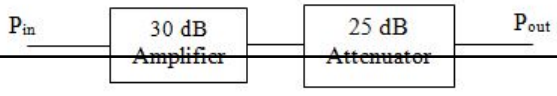
25) The power output for an input power of 1 mW in the following system is



[Question ID = 51868]

1. 10 dBm [Option ID = 87466]
2. 0 dB [Option ID = 87467]
3. 5 dBm [Option ID = 87465]
4. 10 dB [Option ID = 87464]

Correct Answer :-

- 5 dBm [Option ID = 87465]

26) If magnetic monopoles existed, then which of the following Maxwell's equations will be modified?

[Question ID = 51848]

1. $\vec{\nabla} \bullet \vec{D} = 0$ [Option ID = 87384]
2. $\vec{\nabla} \times \vec{H} = \vec{J} + \frac{\partial \vec{D}}{\partial t}$ [Option ID = 87387]
3. $\vec{\nabla} \bullet \vec{B} = 0$ [Option ID = 87385]
4. $\vec{\nabla} \times \vec{E} = -\frac{\partial \vec{B}}{\partial t}$ [Option ID = 87386]

Correct Answer :-

- $\vec{\nabla} \bullet \vec{B} = 0$ [Option ID = 87385]

27) An electron travelling with velocity of 10^7 cm/s. If the velocity increased by a value of 1 cm/s then the increase in kinetic energy (K.E) is

[Question ID = 51824]

1. 0 eV [Option ID = 87291]
2. 10.4×10^{-9} eV [Option ID = 87289]
3. 1 eV [Option ID = 87290]
4. 5.7×10^{-9} eV [Option ID = 87288]

Correct Answer :-

- 5.7×10^{-9} eV [Option ID = 87288]

28) The current, i(t), through a 10Ω resistor in series is equal to $4\sin(100t + 45°) + 4\sin(300t + 60°)$ amperes. The RMS value of the current and the power dissipated in the circuit are:

[Question ID = 51797]

1. 4 A, 160 W [Option ID = 87183]
2. $\sqrt{35}$ A, 410 W [Option ID = 87182]
3. $\sqrt{41}$ A, 410 W [Option ID = 87181]
4. 5 A, 210 W [Option ID = 87180]

Correct Answer :-

- 4 A, 160 W [Option ID = 87183]

29)

In C language, what is the output of the following code

```
int main()
{

int i =5 , j=4;
 j = ++i+i++;
 i*=j;
printf("%d %d",i,j);

}
```

[Question ID = 51813]

1. 60 31 [Option ID = 87244]
2. 90 30 [Option ID = 87245]
3. 91 13 [Option ID = 87247]
4. 180 20 [Option ID = 87246]

Correct Answer :-

- 91 13 [Option ID = 87247]

30) If $\vec{F} = x\hat{i} + 2y\hat{j} + 3z\hat{k}$ the value of $\vec{\nabla} \times (\vec{\nabla} \times \vec{F})$ is

[Question ID = 51772]

1. $\hat{i}$ [Option ID = 87081]
2. $3\hat{k}$ [Option ID = 87083]
3. $2\hat{j}$ [Option ID = 87082]
4. zero [Option ID = 87080]

Correct Answer :-

- zero [Option ID = 87080]

31) Consider an abrupt pn junction. Let V_{bi} be the built in potential of this junction and V_R be the applied reverse bias. If the junction capacitance, C_j is 1 pF for $V_{bi}+V_R$ = 1 V, then for $V_{bi}+V_R$ = 4V, C_j will be

[Question ID = 51823]

1. 0.5 pF [Option ID = 87286]
2. 2 pF [Option ID = 87287]
3. 0.25 pF [Option ID = 87285]
4. 4 pF [Option ID = 87284]

Correct Answer :-

- 0.5 pF [Option ID = 87286]

32) If a particular JFET has shorted gate saturation current (I_{DSS}) is 10 mA at 25 °C then the temperature at which saturation current shall be 4.5 mA is _____

[Question ID = 51829]

1. ~125 °C [Option ID = 87308]
2. ~234 °C [Option ID = 87311]
3. ~450 °C [Option ID = 87309]
4. ~100 °C [Option ID = 87310]

Correct Answer :-

- ~234 °C [Option ID = 87311]

33) A lot has 10% defective items. Ten items are chosen randomly from this lot. The probability that exactly 2 of the chosen items are defective is

[Question ID = 51792]

1. 0.0036 [Option ID = 87160]
2. 0.3874 [Option ID = 87163]
3. 0.2234 [Option ID = 87162]
4. 0.1937 [Option ID = 87161]

Correct Answer :-

- 0.1937 [Option ID = 87161]

34) In the following circuit the output Z is

[Question ID = 51812]

1. $\bar{A}B$ [Option ID = 87241]
2. ABC [Option ID = 87243]
3. $\overline{ABC}$ [Option ID = 87242]
4. $A\bar{B}$ [Option ID = 87240]

Correct Answer :-

- ABC [Option ID = 87243]

35) The main advantages of the crystal oscillator is that its output is

[Question ID = 51827]

1. d.c [Option ID = 87303]
2. 50 MHZ to 60 MHz [Option ID = 87300]
3. variable frequency [Option ID = 87301]
4. a constant frequency [Option ID = 87302]

Correct Answer :-

- a constant frequency [Option ID = 87302]

36) The phenomenon known as 'Early effect' in BJT refers to a reduction of effect base-width caused by

[Question ID = 51831]

1. the reverse biasing of the base-collector junction [Option ID = 87318]
2. electron-hole recombination in the base [Option ID = 87316]
3. the early removal of the stored base charge during saturation to cutoff switching. [Option ID = 87319]
4. the forward biasing of emitter-base junction [Option ID = 87317]

Correct Answer :-

- the reverse biasing of the base-collector junction [Option ID = 87318]

37) A box contains 2 washers, 3 nuts and 4 bolts. Items are drawn from the box at random one at a time without replacement. The probability of drawing 2 washers first followed by 3 nuts and subsequently the 4 bolts is

[Question ID = 51785]

1. 2/315 [Option ID = 87133]
2. 1/1260 [Option ID = 87135]
3. 1/2520 [Option ID = 87134]
4. 1/630 [Option ID = 87132]

Correct Answer :-

- 1/1260 [Option ID = 87135]

38) A discrete memory less source produces symbols m_1, m_2, m_3, m_4 with probabilities 1/2, 1/4, 1/8 and 1/8 respectively. The entropy of the source is

[Question ID = 51837]

1. 1.81 [Option ID = 87340]
2. 0.25 [Option ID = 87342]
3. 1.75 [Option ID = 87341]
4. 2 [Option ID = 87343]

Correct Answer :-

- 1.75 [Option ID = 87341]

39) If the Newton Raphson Method is used to find the positive solution of the equation $f(x) = x^3 - A$, where A is any real number, the iteration equation is

[Question ID = 51814]

1. $x_n = x_{n-1}^3 - A + \dfrac{2x_{n-1} + \dfrac{A}{x_{n-1}^2}}{3}$ [Option ID = 87251]
2. $x_n = 2x_{n-1} + \dfrac{A}{x_{n-1}^2}$ [Option ID = 87249]
3. $x_{n+1} = \dfrac{2x_n + \dfrac{A}{x_n^2}}{2}$ [Option ID = 87248]
4. $x_n = \dfrac{2x_{n-1} + \dfrac{A}{x_{n-1}^2}}{3}$ [Option ID = 87250]

Correct Answer :-

- $x_n = \dfrac{2x_{n-1} + \dfrac{A}{x_{n-1}^2}}{3}$ [Option ID = 87250]

40) Two transmission lines of length 30 m, loss 0.1 dB/m and length 80 m, loss 0.05 dB/m are joined. The joint is not done well and imparts a 3 dB loss. What percentage of the input power reaches the output of the combination?

[Question ID = 51860]

1. 5% [Option ID = 87433]
2. 10% [Option ID = 87434]
3. 2.5% [Option ID = 87432]
4. 4.3% [Option ID = 87435]

Correct Answer :-

- 10% [Option ID = 87434]

41) The minimum bandwidth of the link needed for a guard band of 10 kHz frequency to prevent interference between six channels, each with 100kHz frequency, is

[Question ID = 51842]

1. 575 kHz [Option ID = 87360]
2. 650 kHz [Option ID = 87361]
3. 725 kHz [Option ID = 87363]
4. 425 kHz [Option ID = 87362]

Correct Answer :-

- 650 kHz [Option ID = 87361]

42) A message signal Band limited to 4K is transmitted through 256 level PCM system. Find Transmission bandwidth of the system

[Question ID = 51845]

1. 16 K [Option ID = 87372]
2. 64 K [Option ID = 87374]
3. 128 K [Option ID = 87375]
4. 32 K [Option ID = 87373]

Correct Answer :-

- 32 K [Option ID = 87373]

43) The modulus of the complex number $\left(\frac{3+4i}{1+2i}\right)$ is

[Question ID = 51786]

1. $1/\sqrt{5}$ [Option ID = 87137]
2. $\sqrt{5}$ [Option ID = 87138]
3. 5 [Option ID = 87136]
4. 1/5 [Option ID = 87139]

Correct Answer :-

- $\sqrt{5}$ [Option ID = 87138]

44) If the two ports are connected in cascade configuration, then which arithmetic operation Should be performed between the individual transmission parameters in order to determine Overall transmission parameters?

[Question ID = 51807]

1. Multiplication [Option ID = 87220]
2. Addition [Option ID = 87221]
3. Subtraction [Option ID = 87222]
4. Division [Option ID = 87223]

Correct Answer :-

- Multiplication [Option ID = 87220]

45) A 70 MHz carrier is QPSK modulated by a1.544 Mbps T1 data stream. The transmitter employs a raised-cosine filter with $\alpha = 0.2$. Which is the transmitted bandwidth of the signal?

[Question ID = 51839]

1. 1852.8 KHz [Option ID = 87348]
2. 3705.6 KHz [Option ID = 87350]
3. 926.4 KHz [Option ID = 87351]
4. 308.8 KHz [Option ID = 87349]

Correct Answer :-

- 926.4 KHz [Option ID = 87351]

46) Evaluate $\int_0^1 \int_0^{\sqrt{1+x^2}} \frac{dx.dy}{1+x^2+y^2}$

[Question ID = 51776]

1. $\frac{\pi}{2}[\log(1+\sqrt{2}))$ [Option ID = 87097]
2. $\frac{\pi}{4}[\log(1-\sqrt{2})$ [Option ID = 87099]
3. $\frac{\pi}{2}[\log(1-\sqrt{2}))$ [Option ID = 87098]
4. $\frac{\pi}{4}[\log(1+\sqrt{2}))$ [Option ID = 87096]

Correct Answer :-

- $\frac{\pi}{4}[\log(1+\sqrt{2}))$ [Option ID = 87096]

47) A solid state Microwave Device used as transmitters for millimeter-wave communication is

[Question ID = 51825]

1. TRAPATT [Option ID = 87295]
2. BARITT [Option ID = 87294]
3. GUNN [Option ID = 87292]
4. IMPATT [Option ID = 87293]

Correct Answer :-

- IMPATT [Option ID = 87293]

48) The solution of the differential equation $\frac{d^3y}{dx^3} - 8y = 0$ is

[Question ID = 51773]

1. $y = C_1e^{2x} + e^{-x}[C_2\cos(\sqrt{3}x) + C_2\sin(\sqrt{3}x)]$ [Option ID = 87086]
2. $y = C_1e^{x} + C_2e^{-x}$ [Option ID = 87087]
3. $y = C_1e^{x} + e^{-x}[C_2\cos(\sqrt{3}x) + C_2\sin(\sqrt{3}x)]$ [Option ID = 87084]
4. $y = C_1e^{2x} + e^{x}[C_2\cos(\sqrt{3}x) + C_2\sin(\sqrt{3}x)]$ [Option ID = 87085]

Correct Answer :-

- $y = C_1e^{2x} + e^{-x}[C_2\cos(\sqrt{3}x) + C_2\sin(\sqrt{3}x)]$ [Option ID = 87086]

49) The reactance offered by a capacitor to ac of frequency 50Hz is 10Ω. If the frequency is increased to double, reactance becomes

[Question ID = 51806]

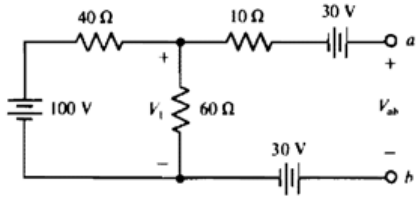
1. 5Ω [Option ID = 87217]

2. 20Ω [Option ID = 87219]
3. 2.5Ω [Option ID = 87216]
4. 10Ω [Option ID = 87218]

Correct Answer :-

- 5Ω [Option ID = 87217]

50) Find the voltage V_{ab} across the open circuit in the circuit shown below:



[Question ID = 51798]

1. 60 V [Option ID = 87187]
2. 100 V [Option ID = 87186]
3. 70 V [Option ID = 87184]
4. 50 V [Option ID = 87185]

Correct Answer :-

- 60 V [Option ID = 87187]

51) Consider 2X2 square matrix A where X is unknown.

$$A = \begin{bmatrix} \sigma & X \\ \omega & \sigma \end{bmatrix}$$

If the eigen values of the matrix A are $(\sigma + j\omega)$ and $(\sigma - j\omega)$, the X is equal to

[Question ID = 51778]

1. $-\omega$ [Option ID = 87107]
2. $+j\omega$ [Option ID = 87106]
3. $-j\omega$ [Option ID = 87104]
4. $+\omega$ [Option ID = 87105]

Correct Answer :-

- $-\omega$ [Option ID = 87107]

52) Which of the following represents an elliptically polarized electrmagnetic wave propagating in the z-direction

[Question ID = 51851]

1. $\vec{E} = E_0(\hat{i} + 2\hat{j})e^{j(\omega t - kz + \phi)}$ [Option ID = 87397]
2. $\vec{E} = E_0(\hat{i} + 2\hat{j})e^{j(\omega t + kz + \phi)}$ [Option ID = 87398]
3. $\vec{E} = E_0(\hat{i} + 2j\,\hat{j})e^{j(\omega t - kz + \phi)}$ [Option ID = 87396]
4. $\vec{E} = E_0(\hat{i} + \hat{j})e^{j(\omega t - kz + \phi)}$ [Option ID = 87399]

Correct Answer :-

- $\vec{E} = E_0(\hat{i} + 2j\,\hat{j})e^{j(\omega t - kz + \phi)}$ [Option ID = 87396]

53)

The gradient of the field $f = \rho^2 z \cos 2\phi$ at point (1, 45°, 2) is

[Question ID = 51853]

1. $-4\hat{u}_\phi$ [Option ID = 87407]
2. $4\sqrt{2}\hat{u}_\phi$ [Option ID = 87405]
3. $4\hat{u}_\phi$ [Option ID = 87404]
4. $-4\sqrt{2}\hat{u}_\phi$ [Option ID = 87406]

Correct Answer :-

- $-4\hat{u}_\phi$ [Option ID = 87407]

54) The Lagrange polynomial that passes through the three data points $(x_0, y_0), (x_1, y_1)$ and $(x_2, y2)$ given as (15,24), (18,37) and (22,25) is given by

$$P_2(x) = 24L_0(x) + 37L_1(x) + 25L_2(x)$$

The value of $L_1(x)$ at x=16 is

[Question ID = 51816]

1. 0.5000 [Option ID = 87257]
2. -0.0714 [Option ID = 87256]
3. 4.3333 [Option ID = 87259]
4. 0.57143 [Option ID = 87258]

Correct Answer :-

- 0.5000 [Option ID = 87257]

55) A 6 cm x 4 cm rectangular waveguide is filled with a dielectric of dielectric constant 4.0. The range of frequencies over which the waveguide will have single mode operation will be

[Question ID = 51854]

1. 625 MHz <f< 938 MHz [Option ID = 87409]
2. 1.0 GHz <f< 2.275 GHz [Option ID = 87410]
3. 1.25 GHz <f< 1.875 GHz [Option ID = 87408]
4. 1.0 GHz <f< 2.5 GHz [Option ID = 87411]

Correct Answer :-

- 1.25 GHz <f< 1.875 GHz [Option ID = 87408]

56) For a lossy distortionless transmission line the propagation constant, β, is given by

[Question ID = 51859]

1. $\omega\sqrt{LC}$ [Option ID = 87428]
2. $\omega\sqrt{\frac{G}{R}}$ [Option ID = 87431]
3. $\omega\sqrt{RG}$ [Option ID = 87429]
4. $\omega\sqrt{\frac{R}{G}}$ [Option ID = 87430]

Correct Answer :-

- $\omega\sqrt{LC}$ [Option ID = 87428]

57) The current i in a series R-L circuit with R=10Ω and L= 20 mH is given by i=2sin500t A. If v is the voltage across the R-L combination, then i

[Question ID = 51799]

1. Is in phase with v [Option ID = 87189]
2. Lags v by 45° [Option ID = 87188]
3. Leads by 45° [Option ID = 87190]
4. Lags v by 90° [Option ID = 87191]

Correct Answer :-

- Lags v by 45° [Option ID = 87188]

58) For a partial differential equation $\frac{\partial^2 u}{\partial x^2} = \frac{\partial^2 u}{\partial t^2}$, the finite difference form is obtained as (where $\alpha = \frac{\Delta t}{\Delta x}$)

[Question ID = 51817]

1. $u_{i,j+1} = u_{i,j-1} + \alpha^2(u_{i-1,j} + u_{i+1,j}) + 2(1-\alpha^2)u_{i,j}$ [Option ID = 87260]
2. $u_{i,j+1} = -u_{i,j-1} - \alpha^2(u_{i-1,j} + u_{i+1,j}) + 2(1-\alpha^2)u_{i,j}$ [Option ID = 87263]
3. $u_{i,j+1} = -u_{i,j-1} + \alpha^2(u_{i-1,j} + u_{i+1,j}) + 2(1-\alpha^2)u_{i,j}$ [Option ID = 87261]
4. $u_{i,j+1} = -u_{i,j-1} + \alpha^2(u_{i-1,j} + u_{i+1,j}) + 2(1+\alpha^2)u_{i,j}$ [Option ID = 87262]

Correct Answer :-

- $u_{i,j+1} = -u_{i,j-1} + \alpha^2(u_{i-1,j} + u_{i+1,j}) + 2(1-\alpha^2)u_{i,j}$ [Option ID = 87261]

59) If $\emptyset(x) = \int_0^{x^4} \sqrt[3]{t}\,dt$, then $\frac{d\emptyset}{dx}$

[Question ID = 51784]

1. $\frac{9}{4}x^2$ [Option ID = 87128]
2. $\frac{4}{9}x^2$ [Option ID = 87129]
3. $4x^{\frac{13}{3}}$ [Option ID = 87131]
4. $\sqrt{x}$ [Option ID = 87130]

Correct Answer :-

- $4x^{\frac{13}{3}}$ [Option ID = 87131]

60) If a single-tone amplitude modulated signal at a modulation depth of 100% transmits a total power of 15 w, the power in the carrier component is

[Question ID = 51840]

1. 15 W [Option ID = 87355]
2. 10 W [Option ID = 87352]
3. 5 W [Option ID = 87353]

4. 12 W [Option ID = 87354]

Correct Answer :-

- 10 W [Option ID = 87352]

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61) A single die is thrown twice. What is the probability that the sum is neither 8 nor 9?

[Question ID = 51793]

1. 1/4 [Option ID = 87165]
2. 3/4 [Option ID = 87167]
3. 5/36 [Option ID = 87164]
4. 1/9 [Option ID = 87166]

Correct Answer :-

- 3/4 [Option ID = 87167]

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62) A triode valve as an amplifier gives a voltage gain of 30. If the anode resistance is 20 kΩ for the valve and load resistance is 60 kΩ then the value of amplification factor for the valve is

[Question ID = 51826]

1. 39.99 [Option ID = 87297]
2. 80.01 [Option ID = 87298]
3. 1 [Option ID = 87299]
4. 20.05 [Option ID = 87296]

Correct Answer :-

- 39.99 [Option ID = 87297]

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63) The relationship between wave number k and angular frequency ω for a certain type of wave is given by $\omega^2 = \alpha k + \beta k^3$. The wave number k for which group velocity equals phase velocity is

[Question ID = 51855]

1. $\frac{1}{3}\sqrt{\frac{\alpha}{\beta}}$ [Option ID = 87415]
2. $3\sqrt{\frac{\alpha}{\beta}}$ [Option ID = 87414]
3. $\frac{1}{2}\sqrt{\frac{\alpha}{\beta}}$ [Option ID = 87413]
4. $\sqrt{\frac{\alpha}{\beta}}$ [Option ID = 87412]

Correct Answer :-

- $\sqrt{\frac{\alpha}{\beta}}$ [Option ID = 87412]

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64) The value of $\int_{0.2}^{3.2} xe^x \, dx$ by using the three segment trapezoidal rule is most nearly

[Question ID = 51818]

1. 78.92 [Option ID = 87265]
2. 89.36 [Option ID = 87267]
3. 55.48 [Option ID = 87264]
4. 63.21 [Option ID = 87266]

Correct Answer :-

- 63.21 [Option ID = 87266]

65) The standard deviation of a uniformly distributed random variable between 0 and 2 is

[Question ID = 51819]

1. $\frac{7}{\sqrt{12}}$ [Option ID = 87271]
2. $\frac{2}{\sqrt{12}}$ [Option ID = 87270]
3. $\frac{1}{\sqrt{3}}$ [Option ID = 87269]
4. $\frac{4}{\sqrt{12}}$ [Option ID = 87268]

Correct Answer :-

- $\frac{2}{\sqrt{12}}$ [Option ID = 87270]

66) An ideal n-channel MOSFET has parameters $\mu_n = 525$ cm^2/V-s, $V_{tn} = 0.75$ V, $t_{ox} = 40$ nm. If the device is biased in saturation with V_{gs} = 5 V, the required rated current is $I_{D,sat}$ = 6 mA. The required W/L ratio is

[Question ID = 51822]

1. 14.7 [Option ID = 87282]
2. 12.3 [Option ID = 87280]
3. 7.2 [Option ID = 87283]
4. 9.6 [Option ID = 87281]

Correct Answer :-

- 14.7 [Option ID = 87282]

67) The optical power incident on a photo diode is 3.60 µW. If the responsivity of photo diode is 0.7 A/W then the photo current generated (in µA) is _____

[Question ID = 51828]

1. 1.58 µA [Option ID = 87304]
2. 5.62 µA [Option ID = 87306]
3. 2.52 µA [Option ID = 87305]
4. 7.86 µA [Option ID = 87307]

Correct Answer :-

- 2.52 µA [Option ID = 87305]

68) In an air-filled waveguide, a TE mode operating at 6 GHz has $E_y = 15\sin\left(\frac{2\pi x}{a}\right)\left(\frac{\pi x}{b}\right)\sin(\omega t - 12z)$. The cut-off frequency is approximately

[Question ID = 51865]

1. 15 GHz [Option ID = 87454]
2. 5.97 GHz [Option ID = 87453]
3. 4.5 GHz [Option ID = 87455]
4. 8.25 GHz [Option ID = 87452]

Correct Answer :-

- 5.97 GHz [Option ID = 87453]

69) An unmodulated carrier frequency is given by 1 MHz after frequency modulation, maximum frequency is given by 1.4 MHz Find Δf and f_{min}?

[Question ID = 51846]

1. 0.6 MHz and 0.4 MHz respectively [Option ID = 87377]
2. 0.25MHz and 0.5 MHz respectively [Option ID = 87378]
3. 0.4 MHz and 0.6 MHz respectively [Option ID = 87379]
4. 0.4 MHz and 0.4 MHz respectively [Option ID = 87376]

Correct Answer :-

- 0.4 MHz and 0.6 MHz respectively [Option ID = 87379]

70) The Gauss divergence theorem relates certain

[Question ID = 51795]

1. Surface integrals to line integrals [Option ID = 87172]
2. Line integrals to volume integral [Option ID = 87175]
3. Vector quantities to other vector quantities [Option ID = 87173]
4. Surface integrals to volume integrals [Option ID = 87174]

Correct Answer :-

- Surface integrals to volume integrals [Option ID = 87174]

71) For which value of βwill the matrix given become a singular?

$$\begin{bmatrix} 8 & \beta & 0 \\ 4 & 0 & 2 \\ 12 & 6 & 0 \end{bmatrix}$$

[Question ID = 51788]

1. -4 [Option ID = 87147]
2. -2 [Option ID = 87145]
3. 1 [Option ID = 87144]
4. 4 [Option ID = 87146]

Correct Answer :-

- 4 [Option ID = 87146]

72) $\int_0^1 \int_0^1 \left(x^2 y + xy^3\right) dx dy$ equals to

[Question ID = 51787]

1. 4/33 [Option ID = 87140]
2. 0 [Option ID = 87143]
3. 7/24 [Option ID = 87141]
4. 2/31 [Option ID = 87142]

Correct Answer :-

- 7/24 [Option ID = 87141]

73)

A silicon sample doped n-type with $10^{18}cm^{-3}$ has a resistance of 10 Ω. The sample has an area of 10^{-6} cm^2 and a length of 10 µm. The doping efficiency of the sample is approximately (μ_n = 800 cm^2/V-s)

[Question ID = 51820]

1. 43 % [Option ID = 87272]
2. 78 % [Option ID = 87274]
3. 96 % [Option ID = 87275]
4. 54 % [Option ID = 87273]

Correct Answer :-

- 78 % [Option ID = 87274]

74) If $F(\omega)$ is the Fourier transform of a function $f(t)$, then the Fourier transform of $\int_{-\infty}^{t} f(t)dt$ is given by

[Question ID = 51774]

1. $\omega F(\omega)$ [Option ID = 87089]
2. $\frac{F(\omega)}{j\omega}$ [Option ID = 87088]
3. $j\omega F(\omega)$ [Option ID = 87091]
4. $j\frac{F(\omega)}{\omega}$ [Option ID = 87090]

Correct Answer :-

- $\frac{F(\omega)}{j\omega}$ [Option ID = 87088]

75) Solution of the differential equation $3y\frac{dy}{dx} + 2x = 0$ represents a family of

[Question ID = 51791]

1. ellipses [Option ID = 87157]
2. parabolas [Option ID = 87158]
3. hyperbolas [Option ID = 87159]
4. Circles [Option ID = 87156]

Correct Answer :-

- ellipses [Option ID = 87157]

76) The locus represented by $|z-3|+|z+3|=10$ is

[Question ID = 51780]

1. parabola [Option ID = 87114]
2. ellipse [Option ID = 87113]
3. hyperbola [Option ID = 87115]
4. Circle [Option ID = 87112]

Correct Answer :-

- ellipse [Option ID = 87113]

77) In an impedance Smith chart, a clockwise movement along a constant resistance circle gives rise to

[Question ID = 51866]

1. no change in the impedance value [Option ID = 87457]
2. no change in the reactance value [Option ID = 87458]
3. a decrease in the value of reactance [Option ID = 87456]
4. an increase in the value of reactance [Option ID = 87459]

Correct Answer :-

- an increase in the value of reactance [Option ID = 87459]

78) A certain coaxial line of copper conductors with inner and outer conductor diameters of 1mm and 3mm respectively, filled with a dielectric of ε_r=2.8 has an inductance per unit length given by $\frac{\mu_0}{2\pi}\ln 3$. The corresponding capacitance per unit length is given by

[Question ID = 51861]

1. $\frac{2\pi\varepsilon_r}{\ln 3}$ [Option ID = 87438]
2. $\frac{2\pi\varepsilon_0}{\ln 3}$ [Option ID = 87436]
3. $\frac{5.6\pi\varepsilon_0}{\ln 3}$ [Option ID = 87437]
4. $\frac{2\pi\varepsilon_r}{\mu_0}\ln 3$ [Option ID = 87439]

Correct Answer :-

- $\frac{5.6\pi\varepsilon_0}{\ln 3}$ [Option ID = 87437]

79) The values of the integral along a closed contour c in anti-clockwise direction for

$$\frac{1}{2\pi j}\oint_c \frac{e^z}{z-2}dz$$

a. The point $z_0 = 2$ inside the contour c, and
b. The point $z_0 = 2$ outside the contour c,

Respectively, are

[Question ID = 51777]

1. (i) 2.72, (ii) 0 [Option ID = 87100]
2. (i) 0, (ii) 7.39 [Option ID = 87103]
3. (i) 0, (ii) 2.72 [Option ID = 87101]
4. (i) 7.39, (ii) 0 [Option ID = 87102]

Correct Answer :-

- (i) 7.39, (ii) 0 [Option ID = 87102]

80) Magnetic bubble is a

[Question ID = 51808]

1. high capacity magnetic storage material [Option ID = 87227]
2. magnetic drive [Option ID = 87225]
3. bubble appearing on the magnetic liquid surface [Option ID = 87224]
4. magnetic storage element [Option ID = 87226]

Correct Answer :-
- magnetic storage element [Option ID = 87226]

81) The SSB modulator is known as

[Question ID = 51844]

1. none [Option ID = 87371]
2. Amplitude modulator [Option ID = 87369]
3. Product modulator [Option ID = 87370]
4. Balanced modulator [Option ID = 87368]

Correct Answer :-
- Product modulator [Option ID = 87370]

82) The information in an analog voltage waveform is to be transmitted over a PCM system with a ± 0.1 % accuracy. This analog waveform has an absolute bandwidth of 100 Hz and an amplitude range of -10 V to +10 V. The minimum number of bits per sample needed for the waveform is

[Question ID = 51834]

1. 16 bits/samples [Option ID = 87328]
2. 6 bits/samples [Option ID = 87329]
3. 12 bits/samples [Option ID = 87330]
4. 9 bits/samples [Option ID = 87331]

Correct Answer :-
- 9 bits/samples [Option ID = 87331]

83) The Y-parameter matrix of a network is given by $Y = \begin{vmatrix} 1 & 1 \\ -1 & 1 \end{vmatrix}$ The Z_{11} parameter of the same network is

[Question ID = 51800]

1. 2 Ω [Option ID = 87195]
2. 1/√2 Ω [Option ID = 87192]
3. 1/2 Ω [Option ID = 87193]
4. 1 Ω [Option ID = 87194]

Correct Answer :-
- 1/2 Ω [Option ID = 87193]

84) VSWR meter displays the power in the following manner

[Question ID = 51867]

1. in terms of voltage [Option ID = 87462]
2. relative [Option ID = 87461]
3. in terms of current [Option ID = 87463]
4. absolute [Option ID = 87460]

Correct Answer :-
- relative [Option ID = 87461]

85) Compact disk (CD) players use 16 bit PCM, including one parity bit with 8 times oversampling of the analog signal. If the analog signal bandwidth is 20 kHz. The peak SNR in dB for this signal is,

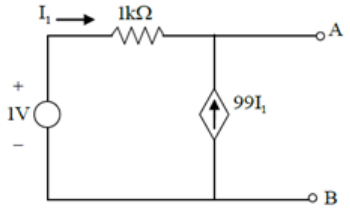
[Question ID = 51835]

1. 101.1 dB [Option ID = 87335]
2. 95.08 dB [Option ID = 87334]
3. 10.1 dB [Option ID = 87333]
4. 9.50 dB [Option ID = 87332]

Correct Answer :-

- 95.08 dB [Option ID = 87334]

86) For the network shown, Thevenin's equivalent voltage source and resistance are, respectively:



[Question ID = 51801]

1. 1mV and 1 kΩ [Option ID = 87197]
2. 1mV and 10 kΩ [Option ID = 87199]
3. 1V and 1 kΩ [Option ID = 87196]
4. 1V and 10Ω [Option ID = 87198]

Correct Answer :-

- 1V and 10Ω [Option ID = 87198]

87) A signal x(t)= 6cos 10πt is sampled at the rate of 14 Hz. To recover the original signal, the cut-off frequency f_c of the ideal low-pass filter should be

[Question ID = 51841]

1. 9Hz [Option ID = 87357]
2. 10Hz [Option ID = 87358]
3. 14Hz [Option ID = 87359]
4. 5Hz < f_c< 9Hz [Option ID = 87356]

Correct Answer :-

- 5Hz < f_c< 9Hz [Option ID = 87356]

88) Which of the following is the correct expression for integration of $f(x)$ by composite Simpson rule over an interval $[a,b]$ subdivided into 2M subintervals of equal width $h=\frac{(b-a)}{2M}$?

[Question ID = 51815]

1. $\frac{h}{2}\left\{[f(a)+f(b)]+2\sum_{k=1}^{M-1}f(x_{2k})+4\sum_{k=1}^{M}f(x_{2k-1})\right\}$ [Option ID = 87255]
2. $\frac{h}{2}\left\{[f(a)+f(b)]+\sum_{k=1}^{M-1}f(x_{2k})+2\sum_{k=1}^{M}f(x_{2k-1})\right\}$ [Option ID = 87254]
3. $\frac{h}{3}\left\{2[f(a)+f(b)]+\sum_{k=1}^{M-1}f(x_{2k})+2\sum_{k=1}^{M}f(x_{2k-1})\right\}$ [Option ID = 87252]
4. $\frac{h}{3}\left\{[f(a)+f(b)]+2\sum_{k=1}^{M-1}f(x_{2k})+4\sum_{k=1}^{M}f(x_{2k-1})\right\}$ [Option ID = 87253]

Correct Answer :-

- $\frac{h}{3}\left\{[f(a)+f(b)]+2\sum_{k=1}^{M-1}f(x_{2k})+4\sum_{k=1}^{M}f(x_{2k-1})\right\}$ [Option ID = 87253]

89) A 75 Ω load is connected to a generator of 50 Ω internal impedance through a quarter wavelength coaxial line. The characteristic impedance of this coaxial line is

[Question ID = 51870]

1. 62.5 Ω [Option ID = 87475]
2. 102.48 Ω [Option ID = 87472]
3. 75 Ω [Option ID = 87474]
4. 61.24 Ω [Option ID = 87473]

Correct Answer :-

- 61.24 Ω [Option ID = 87473]

90) The final value of $L^{-1}\dfrac{2s+1}{s^4+8s^3+16s^2+s}$ is

[Question ID = 51781]

1. 0 [Option ID = 87118]
2. 2 [Option ID = 87117]
3. 1 [Option ID = 87116]
4. ∞ [Option ID = 87119]

Correct Answer :-

- 1 [Option ID = 87116]

91) The complete solution of the differential equation $\dfrac{d^2y}{dx^2}-7\dfrac{dy}{dx}+6y=e^{2x}$ is:

[Question ID = 51779]

1. $c_1e^x+c_2e^{6x}-\frac{1}{4}e^{2x}$ [Option ID = 87111]
2. $c_1e^x+c_2e^{3x}-e^{2x}$ [Option ID = 87110]
3. $c_1e^x+c_2e^{3x}-\frac{1}{4}e^{2x}$ [Option ID = 87108]
4. $c_1e^x+c_2e^{6x}-e^{2x}$ [Option ID = 87109]

Correct Answer :-

- $c_1e^x+c_2e^{3x}-e^{2x}$ [Option ID = 87110]

92) $\lim_{x\to 0}\frac{log_e(1+4x)}{e^{3x}-1}$ is equal to

[Question ID = 51789]

1. 1 [Option ID = 87148]
2. none of these [Option ID = 87151]
3. 0 [Option ID = 87149]
4. $\frac{4}{3}$ [Option ID = 87150]

Correct Answer :-

- $\frac{4}{3}$ [Option ID = 87150]

93) 10 message signal, each band limited to 10K are multiplexed using FDM. Guard Band is 0.5K. Find multiplexed signal B.W for DSB modulation

[Question ID = 51843]

1. 104.5 K [Option ID = 87365]
2. 100 K [Option ID = 87366]
3. 204.5 K [Option ID = 87367]
4. 20K [Option ID = 87364]

Correct Answer :-

- 204.5 K [Option ID = 87367]

94) A Y-network has resistances of 10Ω each in two of its arms, while the third arm has a resistance of 5Ω. In the equivalent Δ-network, the highest value (in Ω) among the three resistances is

[Question ID = 51796]

1. 35 Ω [Option ID = 87179]
2. 40 Ω [Option ID = 87177]
3. 20 Ω [Option ID = 87176]
4. 30 Ω [Option ID = 87178]

Correct Answer :-

- 40 Ω [Option ID = 87177]

95) In a charge free region ($\sigma = 0$, $\varepsilon = \varepsilon_0\varepsilon_r$, $\mu = \mu_0$), magnetic field intensity is $\vec{H} = 10\cos\left(10^{11}\,t - 4y\right)\hat{a}_z$ A/m. The displacement current density is

[Question ID = 51849]

1. $40\sin(10^3 t - 4y)\hat{a}_x$ [Option ID = 87390]
2. $40\sin(10^{11} t - 4y)\hat{a}_y$ [Option ID = 87388]
3. $-40\sin(10^3 t - 4y)\hat{a}_x$ [Option ID = 87391]
4. $-40\sin(10^{11} t - 4y)\hat{a}_y$ [Option ID = 87389]

Correct Answer :-

- $40\sin(10^{11} t - 4y)\hat{a}_y$ [Option ID = 87388]

96) A series RLC circuit has a resonance frequency of 2 KHz and a quality factor Q=200. If each of R,L and C is doubled from its original value, the new Q of the circuit is

[Question ID = 51802]

1. 25 [Option ID = 87203]
2. 100 [Option ID = 87200]
3. 200 [Option ID = 87201]
4. 50 [Option ID = 87202]

Correct Answer :-

- 100 [Option ID = 87200]

97) The Laplace transform of e^{i5t} is _____ where $i = \sqrt{-1}$

[Question ID = 51790]

1. $\frac{s+5i}{s^2+25}$ [Option ID = 87155]
2. $\frac{1+5i}{s^2-25}$ [Option ID = 87152]
3. $\frac{5i}{s^2+25}$ [Option ID = 87153]
4. $\frac{s}{s^2-25}$ [Option ID = 87154]

Correct Answer :-

- $\frac{s+5i}{s^2+25}$ [Option ID = 87155]

98) The value of a, b, c such that
$\vec{F} = (3x-4y+az)\hat{i} + (cx+5y-2z)\hat{j} + (x-by+7z)\hat{k}$ is irrotational are

[Question ID = 51783]

1. -4,1,2 [Option ID = 87127]
2. 2,1, -4 [Option ID = 87124]
3. 1, 2, -4 [Option ID = 87125]
4. 1,8,4 [Option ID = 87126]

Correct Answer :-

- 1, 2, -4 [Option ID = 87125]

99) What should be done, if the dependent current and voltage sources are present in a circuit while applying 'Superposition theorem'?

[Question ID = 51805]

1. None of the above [Option ID = 87215]
2. Keep in their original form without replacing by either open or short circuits [Option ID = 87212]
3. Replace them by short circuit [Option ID = 87214]
4. Replace them by open circuit [Option ID = 87213]

Correct Answer :-

- Keep in their original form without replacing by either open or short circuits [Option ID = 87212]

100) Among the given storages, which one has the highest storage capacity

[Question ID = 51809]

1. hard disk [Option ID = 87228]
2. fiexible floppy disk [Option ID = 87231]
3. multiple disk storage [Option ID = 87229]
4. CDROM [Option ID = 87230]

Correct Answer :-

- multiple disk storage [Option ID = 87229]