

**Exam Name** : AEGCL\_Assistant Manager\_Electrical

**Total Questions** : 100

**Description** : **Important Examination Instructions**

1. Each question will carry 1 (One) Mark for correct answer.
2. There will be a negative marking of 0.25 (one-fourth) marks for wrong answer
3. Do not use the alt-tab, mouse or any other device to shift from examination screen to any other screen or do not try to open any other application while attempting the examination. Doing so may result in discontinuation of examination and your examination will be considered as null and void. **Attempting to close the browser repeatedly will lock the exam.**

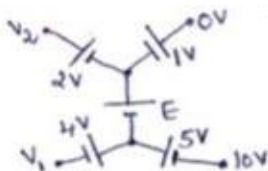
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1. **How to start the test:** You can start the test by clicking the Declaration Check box and then 'I am ready to begin button ' .
  2. **How to change the question:** For the move to the next question you have to click on the 'Save And Next' button the same as for move to the back, click on the 'Previous' button.
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<b>Q.1</b> The inductance for the impedance $12+j 30$ ohms at 60 Hz frequency is		<b>Question ID:</b> 1106
<b>Marks</b>	1	
<b>No</b>	<b>Options Details</b>	<b>Correct Option</b>
1	44.209 mH	
2	45.94 mH	
3	73.53 mH	
4	79.58 mH	✓

Q.2

In the circuit of figure below, the value of the voltage source  $E$  is



- (A)  $-16V$  (B)  $4V$   
 (C)  $-6V$  (D)  $16V$

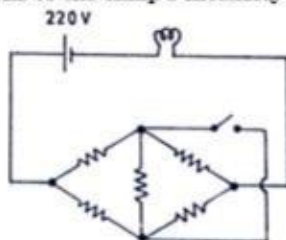
Marks 1

Question ID:  
1107

No	Options Details	Correct Option
1	A	✓
2	B	
3	C	
4	D	

Q.3

All resistances in the circuit in figure below are of  $R$  ohms each. The switch is initially open. What happens to the lamp's intensity when the switch is closed?



- (A) Increases  
 (B) Decreases  
 (C) Remains the same  
 (D) Answer depends on the value of  $R$ .

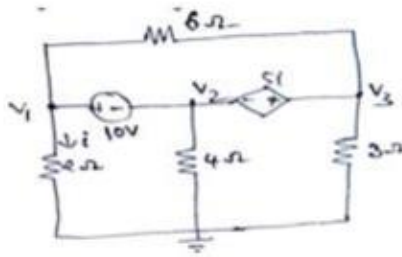
Marks 1

Question ID:  
1108

No	Options Details	Correct Option
1	A	
2	B	
3	C	✓
4	D	

Q.4

The value of voltage  $V_1$  for the circuit shown in figure below is



- (A) 3.043 V (B) 8.5 V  
(C) 30.05 V (D) 15.532 V

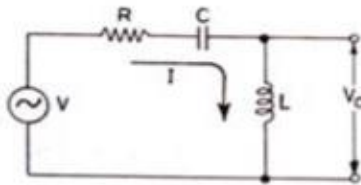
Marks 1

Question ID:  
1109

No	Options Details	Correct Option
1	A	✓
2	B	
3	C	
4	D	

Q.5

In the circuit of figure below, with  $X_L > X_C$ , voltage  $V_o$  is



- (A) leads current  $I$  by  $90^\circ$   
(B) lags current  $I$  by  $90^\circ$   
(C) lags current  $I$  by some angle less than  $90^\circ$   
(D) leads current  $I$  by some angle less than  $90^\circ$

Marks 1

Question ID:  
1110

No	Options Details	Correct Option
1	A	✓
2	B	
3	C	
4	D	

**Q.6**

A higher value of Quality factor is characterized by

- (1) Narrow band of frequency
- (2) Sharp response
- (3) Poor selectivity

Pick out the correct one

- (A) 1 and 2
- (B) 1 and 3
- (C) 2 and 3
- (D) 1, 2 and 3

Marks 1

Question ID:  
1111

No	Options Details	Correct Option
1	A	✓
2	B	
3	C	
4	D	

**Q.7**

For a star connection network, consuming power of 1.8 kW and power factor 0.5, the inductance and resistance of each coil at a supply voltage of 230 Volts, 60 Hz is

Marks 1

Question ID:  
1112

No	Options Details	Correct Option
1	0.01 H, 8 Ohms	
2	0.05 H, 10 Ohms	
3	0.03 H, 7.4 Ohms	✓
4	1H, 7 Ohms	

**Q.8**

For a two port reciprocal network, the three transmission parameters are given by  $A = 4$ ,  $B = 7$  and  $C = 5$ . The value of D is equal to

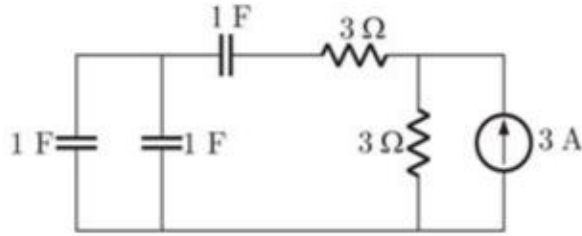
Marks 1

Question ID:  
1113

No	Options Details	Correct Option
1	8.5	
2	9	✓
3	9.5	
4	8	

Q.9

The time constant for the circuit given below will be



(A)  $\frac{1}{9}$  s

(B)  $\frac{1}{4}$  s

(C) 4 s

(D) 9 s

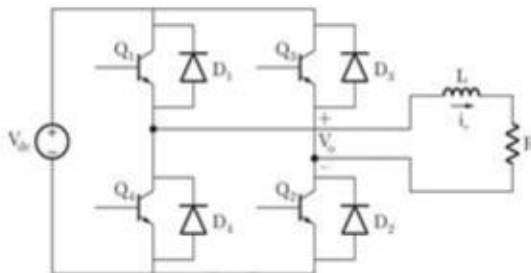
Marks 1

Question ID:  
1114

No	Options Details	Correct Option
1	A	
2	B	
3	C	✓
4	D	

Q.10

The Voltage Source Inverter (VSI) shown in the figure below is switched to provide a 50 Hz, square wave ac output voltage  $V_o$  across an RL load. Reference polarity of  $V_o$  and reference direction of the output current  $i$ , are indicated in the figure. It is given that  $R = 3$  ohms,  $L = 9.55$  mH. Appropriate transition i.e., Zero Voltage Switching (ZVS) / Zero Current Switching (ZCS) of the IGBTs during turn-on / turn-off is



(A) ZVS during turn off

(B) ZVS during turn-on

(C) ZCS during turn off

(D) ZCS during turn-on

Marks 1

Question ID:  
1115

No	Options Details	Correct Option
1	A	
2	B	✓
3	C	
4	D	

Q.11

A half-controlled single-phase bridge rectifier is supplying an R-L load. It is operated at a firing angle  $\alpha$  and the load current is continuous. The fraction of cycle that the freewheeling diode conducts is

- (A)  $\frac{1}{2}$  (B)  $1 - \frac{\alpha}{\pi}$   
 (C)  $\frac{\alpha}{2\pi}$  (D)  $\frac{\alpha}{\pi}$

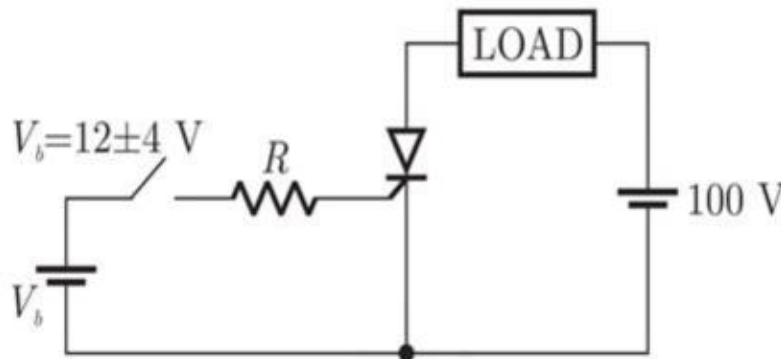
Marks 1

Question ID:  
1116

No	Options Details	Correct Option
1	A	
2	B	
3	C	
4	D	✓

Q.12

The triggering circuit of a thyristor is shown in figure. The thyristor requires a gate current of 10 mA, for guaranteed turn-on. The value of R required for the thyristor to turn on reliably under all conditions of  $V_b$  variation is



- (A) 10000  $\Omega$  (B) 1600  $\Omega$   
 (C) 1200  $\Omega$  (D) 800  $\Omega$

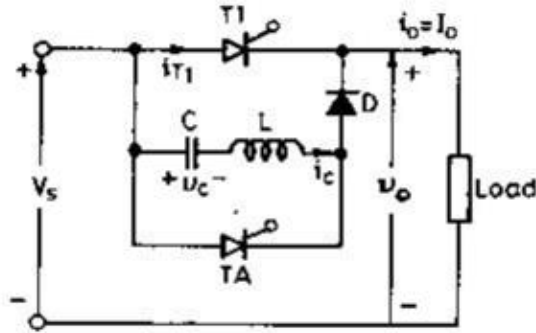
Marks 1

Question ID:  
1117

No	Options Details	Correct Option
1	A	
2	B	
3	C	
4	D	✓

Q.13

For the circuit shown in figure below, with  $V_s = 230\text{ V}$ ,  $C = 20\ \mu\text{F}$  and  $L = 5\ \mu\text{H}$ , for a constant load current of  $300\text{ A}$ , the circuit turn-off time for thyristor  $T_1$  is



- (A)  $41.416\ \mu\text{s}$
- (B)  $11.624\ \mu\text{s}$
- (C)  $4.52\ \mu\text{s}$
- (D)  $20.25\ \mu\text{s}$

Marks 1

Question ID:  
1118

No	Options Details	Correct Option
1	A	
2	B	✓
3	C	
4	D	

Q.14 Effect of feedback on overall gain is

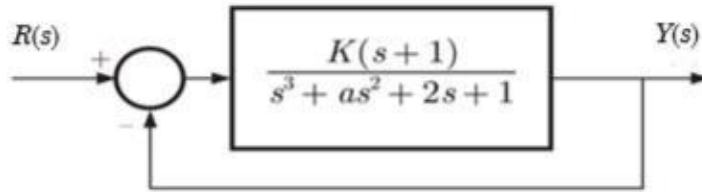
Marks 1

Question ID:  
1119

No	Options Details	Correct Option
1	Increases gain	
2	Decrease gain	
3	Increases or decreases gain	✓
4	No effect on gain	

Q.15

The feedback system shown below oscillates at 2 rad / s when



- (A)  $K=2$  and  $a=0.75$                       (B)  $K=3$  and  $a=0.75$   
 (C)  $K=4$  and  $a=0.5$                       (D)  $K=2$  and  $a=0.5$

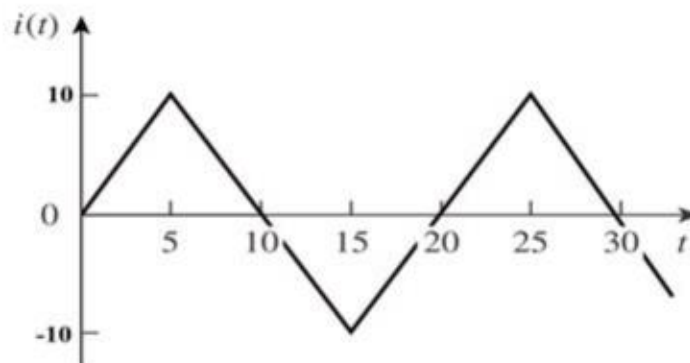
Marks 1

Question ID:  
1120

No	Options Details	Correct Option
1	A	✓
2	B	
3	C	
4	D	

Q.16

The rms value of the current waveform shown in figure below is



- (A) 6 A    (B) 5.773 A  
 (C) 6.528 A                                      (D) 7.5 A

Marks 1

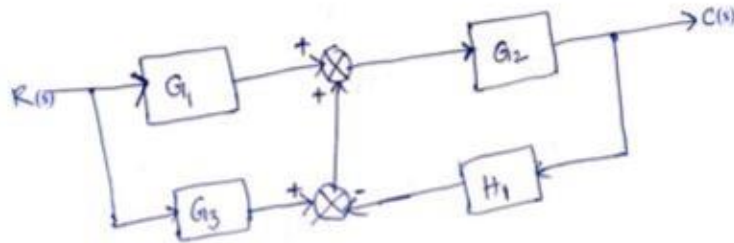
Question ID:  
1121

No	Options Details	Correct Option
1	A	
2	B	✓
3	C	
4	D	



Q.17

The transfer function of the block diagram is



- (A)  $\frac{1}{(1 + G_1)(1 + GH_2)}$                       (B)  $\frac{G_2(G_1 + G_2)}{(1 + G_2H_1)}$   
 (C)  $\frac{(G_2 + H_1)}{(1 + G_1G_2)}$                       (D)  $\frac{(G_1G_2G_2)}{(1 + G_1H)}$

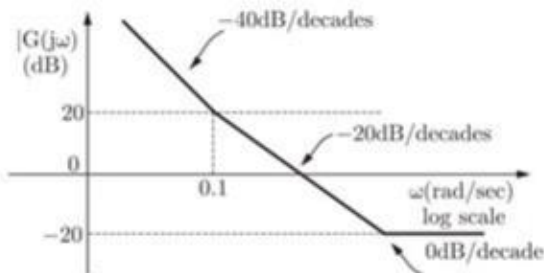
Marks 1

Question ID:  
1122

No	Options Details	Correct Option
1	A	
2	B	✓
3	C	
4	D	

Q.18

The asymptotic Bode magnitude plot of a minimum phase transfer function is shown in the figure:



This transfer function has

- (A) Three poles and one zero                      (B) Two poles and one zero  
 (C) Two poles and two zeros                      (D) One pole and two zeros

Marks 1

Question ID:  
1123

No	Options Details	Correct Option
1	A	
2	B	
3	C	✓
4	D	

Q.19

A unity feedback system has open loop transfer function  $G(S) = \frac{K}{s(s^2 + 6s + 25)}$

In the root locus plot for this system, the centroid on the real axis is at

- (A) -1 (B) -1.5  
(C) -2 (D) -3

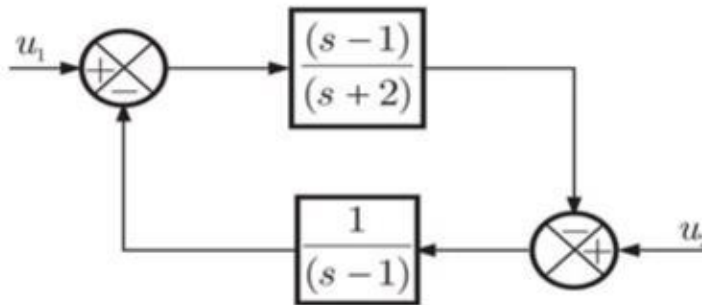
Marks 1

Question ID:  
1124

No	Options Details	Correct Option
1	A	
2	B	✓
3	C	
4	D	

Q.20

The system shown in the figure is



- (A) Stable  
(B) Unstable  
(C) Conditionally stable  
(D) Stable for input  $u_1$  but unstable for input  $u_2$

Marks 1

Question ID:  
1125

No	Options Details	Correct Option
1	A	
2	B	
3	C	
4	D	✓

Q.21

The state space equation of a system is described by  $\dot{X} = AX + Bu$ ,  $Y = CX$ , where  $X$  is state vector,  $u$  is input,  $Y$  is output. The transfer function of a system is  $G(s) = \frac{(s+2)}{(s+3)(s+1)^2}$ . The matrix  $B$  is given by

- (A)  $\begin{bmatrix} 0 \\ 1 \\ 1 \end{bmatrix}$  (B)  $\begin{bmatrix} 1 \\ 0 \\ 1 \end{bmatrix}$   
 (C)  $\begin{bmatrix} 0 \\ -1 \\ -1 \end{bmatrix}$  (D)  $\begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix}$

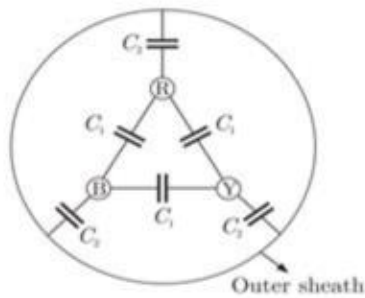
Marks 1

Question ID:  
1126

No	Options Details	Correct Option
1	A	✓
2	B	
3	C	
4	D	

Q.22

Consider a three-core, three-phase, 50 Hz, 11 kV cable whose conductors are denoted as R, Y and B in the figure. The core to core capacitance ( $C_1$ ) is  $0.2 \mu\text{F}$  and the core to earth capacitance ( $C_2$ ) is  $0.4 \mu\text{F}$ . The per-phase charging current is



- (A) 2 A (B) 2.4 A  
 (C) 2.7 A (D) 3.5 A

Marks 1

Question ID:  
1127

No	Options Details	Correct Option
1	A	✓
2	B	
3	C	
4	D	

**Q.23** The safety factor of insulators is defined as ratio of

**Marks** 1

**Question ID:**  
1128

No	Options Details	Correct Option
1	Flash over voltage to puncture voltage	
2	Puncture voltage to flash over voltage	✓
3	Current to voltage	
4	Current to power	

**Q.24** Arcing horns are used for

**Marks** 1

**Question ID:**  
1129

No	Options Details	Correct Option
1	protecting insulators from birds	
2	protecting insulators from cracking or breaking due to flash over	✓
3	improving string efficiency	
4	protecting insulator from deposition of dirt	

**Q.25** For a linear electromagnetic circuit, which of the following statement is true?

**Marks** 1

**Question ID:**  
1130

No	Options Details	Correct Option
1	Field energy is equal to the co-energy	✓
2	Field energy is greater than the co-energy	
3	Field energy is lesser than the co-energy	
4	Co-energy is zero	

**Q.26** In a DC generator in case the brushes are moved so as to bring them in magnetic neutral axis then, there will be

**Marks** 1

**Question ID:**  
1131

No	Options Details	Correct Option
1	cross-magnetization	
2	demagnetization	
3	cross-magnetization as well as demagnetization	✓
4	works normally	

**Q.27** The brush-axis of a bipolar dc motor is rotated by  $90^\circ$ . The effect of this rotation on the back emf  $E_b$  and the torque developed  $T_d$  would be such that

**Marks** 1

**Question ID:**  
1132

No	Options Details	Correct Option
1	both $E_b$ and $T_d$ are unchanged	
2	$E_b$ is zero, but $T_d$ is unchanged	
3	$E_b$ is unchanged, but $T_d$ is zero	
4	both $E_b$ and $T_d$ are zero	✓

**Q.28** If the applied voltage to a dc machine is 230 V, then the back emf, for maximum power developed is

**Marks** 1

**Question ID:**  
1133

No	Options Details	Correct Option
1	115 V	✓
2	200 V	
3	230 V	
4	460 V	

**Q.29** A 100 VA, 120/12 V transformer is to be connected so as to form a step-up transformer. A Primary voltage of 120 V is applied to the transformer. What is the secondary voltage of the transformer?

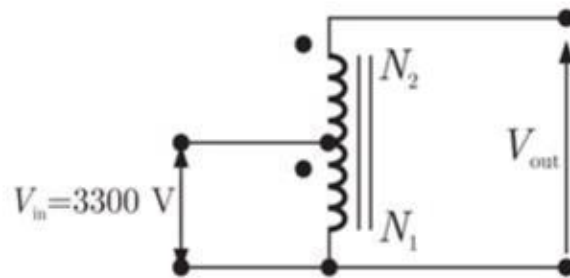
Marks 1

Question ID:  
1134

No	Options Details	Correct Option
1	1.2 V	
2	12 V	
3	120 V	
4	132V	✓

**Q.30**

A 50 kVA, 3300/230 V single-phase transformer is connected as an auto-transformer shown in figure below. The nominal rating of the auto-transformer will be



- (A) 50.0 kVA                      (B) 53.5 kVA  
(C) 717.4 kVA                    (D) 767.4 kVA

Marks 1

Question ID:  
1135

No	Options Details	Correct Option
1	A	
2	B	
3	C	
4	D	✓

**Q.31**

A 10 KVA, 2500 / 250 V, single phase transformer gave the following results

OC test: 250 V, 0.8 A, 50 W

SC Test: 60 V, 3 A, 45 W

The maximum % efficiency of the transformer at 0.8 power factor lag is

(A) 97.2

(B) 96.2

(C) 98.44

(D) 95.44

Marks 1

Question ID:  
1136

No	Options Details	Correct Option
1	A	
2	B	
3	C	✓
4	D	

**Q.32**

The locked rotor current in a 3-phase, star connected 15 kW, 4 pole, 230 V 50 Hz induction motor at rated conditions is 50 A. Neglecting losses and magnetizing current, the approximate locked rotor line current drawn when the motor is connected to a 236 V

Marks 1

Question ID:  
1137

No	Options Details	Correct Option
1	58.5 A	
2	45.0 A	
3	42.7 A	
4	55.6 A	
5	Error in question / Answer options. Grace marks will be awarded.	✓

**Q.33**

A 3 phase squirrel cage induction motor has maximum torque equal to twice the full load torque. The per phase rotor resistance and per phase stand still reactance referred to stator are 0.2 ohm and 2 ohm respectively. Neglect stator impedance. The ratio of starting torque to full load torque with direct online starter is

Marks 1

Question ID:  
1138

No	Options Details	Correct Option
1	0.33	
2	0.45	
3	0.396	✓
4	0.845	

**Q.34** Distributed winding and short chording employed in AC machines will result in

**Marks** 1

**Question ID:**  
1139

No	Options Details	Correct Option
1	increase in emf and reduction in harmonics	
2	reduction in emf and increase in harmonics	
3	increase in both emf and harmonics	
4	reduction in both emf and harmonics	✓

**Q.35** A 440-V shunt motor has armature resistance of  $0.8 \Omega$  and field resistance of  $200 \Omega$ . What will be the back e.m.f when giving an output of 7.46 kW at 85 percent efficiency?

**Marks** 1

**Question ID:**  
1140

No	Options Details	Correct Option
1	567.2 V	
2	345.4 V	
3	425.8 V	✓
4	645.34 V	

**Q.36**

A 220 V dc series motor has armature and field resistances of  $0.15 \Omega$  and  $0.10 \Omega$  respectively. It takes a current of 30 A from the supply while running at 1000 rpm. If an external resistance of  $1 \Omega$  is inserted in series with the motor, calculate the new steady state speed. Assume the load torque is proportional to the square of the speed i.e.,  $T_L \propto \omega^2$ .

- (A) 800 rpm                      (B) 112.75 rpm  
(C) 572.85 rpm                (D) 383.55 rpm

**Marks** 1

**Question ID:**  
1141

No	Options Details	Correct Option
1	A	
2	B	✓
3	C	
4	D	



Q.37

If potential  $V = 2x^2y + 20z - \frac{4}{x^2 + y^2} V$ , then Electric field intensity  $\vec{E}$  at

$P(6, -2.5, 3)$  is

- (A)  $+59.9732 \vec{a}_x - 71.9888 \vec{a}_y - 20\vec{a}_z$  (B)  $+59.9732 \vec{a}_x + 71.9888 \vec{a}_y - 20\vec{a}_z$   
(C)  $-59.9732 \vec{a}_x - 71.9888 \vec{a}_y - 20\vec{a}_z$  (D)  $+59.9732 \vec{a}_x - 71.9888 \vec{a}_y + 20\vec{a}_z$

Marks 1

Question ID:  
1142

No	Options Details	Correct Option
1	A	✓
2	B	
3	C	
4	D	

Q.38

A capacitor consists of two metal plates each  $500 \times 500 \text{ mm}^2$  and spaced 6 mm apart. The space between the metal plates is filled with a glass plate of 4 mm thickness and a layer of paper of 2 mm thickness. The relative permittivities of the glass and paper are 8 and 2 respectively. Neglecting the fringing effect, the capacitance will be (Given that  $\epsilon_0 = 8.85 \times 10^{-12} \text{ F/m}$ )

- (A) 983.3pF (B) 1475pF  
(C) 637.7pF (D) 9956.25pF

Marks 1

Question ID:  
1143

No	Options Details	Correct Option
1	A	
2	B	✓
3	C	
4	D	

Q.39 According to Lenz's law, the direction of induced emf and hence current

Marks 1

Question ID:  
1144

No	Options Details	Correct Option
1	may be found by the right-hand rule	
2	is always determined by the rate of cutting flux	
3	always opposes the cause producing it	✓
4	depends on whether the coil is wound with a right or left hand spiral	

**Q.40**

An infinite line charge with density  $\rho_L$  C/m, along z-axis. The work done if a point charge  $Q$  is moved from  $r = a$  to  $r = b$  along a radial path is given by

(A)  $\frac{-Q\rho_L}{2\pi\epsilon_0} \ln \frac{b}{a}$

(B)  $\frac{-Q\rho_L}{2\pi\epsilon_0} \ln \frac{a}{b}$

(C)  $\frac{-Q\rho_L}{\pi\epsilon_0} \ln \frac{b}{a}$

(D)  $\frac{-Q\rho_L}{4\pi\epsilon_0} \ln \frac{b}{a}$

Marks 1

Question ID:  
1145

No	Options Details	Correct Option
1	A	✓
2	B	
3	C	
4	D	

**Q.41**

Power consumed by a balanced 3-phase, 3-wire load is measured by the two wattmeter method. The first wattmeter reads twice that of the second. Then the load impedance angle in radians is

(A)  $\pi/2$

(B)  $\pi/3$

(C)  $\pi/6$

(D)  $\pi/8$

Marks 1

Question ID:  
1146

No	Options Details	Correct Option
1	A	
2	B	
3	C	✓
4	D	

**Q.42**

A Moving iron ammeter produces a full scale torque of 240  $\mu\text{Nm}$  with a deflection of 1200 at a current of 10 A. The rate of change of self inductance ( $\mu\text{H/radian}$ ) of the instrument at full scale is

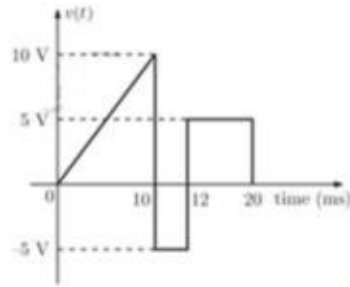
Marks 1

Question ID:  
1147

No	Options Details	Correct Option
1	20 $\mu\text{H/radian}$	
2	4.8 $\mu\text{H/radian}$	
3	12.0 $\mu\text{H/radian}$	
4	114.6 $\mu\text{H/radian}$	
5	Error in question / Answer options. Grace marks will be awarded.	✓

Q.43

A periodic voltage waveform observed on an oscilloscope across a load is shown below. A permanent magnet moving coil (PMMC) meter connected across the same load reads



- (A) 4V  
(C) 8V

- (B) 5V  
(D) 10V

Marks 1

Question ID:  
1148

No	Options Details	Correct Option
1	A	✓
2	B	
3	C	
4	D	

Q.44

The meter constant of a single-phase 240V induction watt-hour meter is 400 revolutions per kWh. The speed of the meter disc for a current of 10 amperes of 0.8 p.f. lagging will be

Marks 1

Question ID:  
1149

No	Options Details	Correct Option
1	12.8 rpm	✓
2	16.02 rpm	
3	18.2 rpm	
4	21.1 rpm	

**Q.45**

A CRO screen has ten divisions on the horizontal scale. If a voltage signal  $5 \sin (314 t + 45^\circ)$  is examined with a line base setting of 5 m sec/div, the number of cycles of signal displayed on the screen will be

- (A) 0.5 cycle (B) 2.5 cycles  
(C) 5 cycles (D) 10 cycles

**Marks** 1

**Question ID:**  
1150

No	Options Details	Correct Option
1	A	
2	B	✓
3	C	
4	D	

**Q.46**

In case of a 3-phase short circuit in a system, the power fed into the system is

**Marks** 1

**Question ID:**  
1151

No	Options Details	Correct Option
1	mostly reactive	✓
2	mostly active	
3	active and reactive both equal	
4	active is double the reactive	

**Q.47**

An 800 kV transmission line has a maximum power transfer capacity of P. If it is operated at 400 kV with the series reactance unchanged, the new maximum power transfer capacity is approximately

**Marks** 1

**Question ID:**  
1152

No	Options Details	Correct Option
1	P	
2	2P	
3	P/2	
4	P/4	✓

**Q.48** The interrupting time of a circuit breaker is the period between the instant of

Marks 1

Question ID:  
1153

No	Options Details	Correct Option
1	initiation of short circuit and the arc extinction on an opening operation	
2	energizing of the trip circuit and the arc extinction on an operating operation	✓
3	initiation of short circuit and the parting of primary arc contacts	
4	energizing of the trip circuit and the parting of primary arc contacts	

**Q.49** If a fault current is 4000 A, the relay setting is 125% and the CT ratio is 400/5, then the plug setting multiplier of an IDMT relay of rating 5 amps will be

Marks 1

Question ID:  
1154

No	Options Details	Correct Option
1	10	
2	12.5	
3	5	
4	8	✓

**Q.50**

Consider the following statements with reference to protective relays:

1. The minimum relay coil current at which the relay operates is called pick-up current.
2. The pick-up value of a relay is 7.5A and the fault current is 30A. Therefore, its plug setting multiplier is 5.
3. An earth fault current is generally lesser than the short-circuit current.
4. Induction relays are used with both a.c. and d.c. quantities.

Which of these statements are correct?

- (A) 1 and 2 (B) 2 and 3  
(C) 1 and 3 (D) 1, 2 and 4

Marks 1

Question ID:  
1155

No	Options Details	Correct Option
1	A	
2	B	
3	C	✓
4	D	

Q.51

A round rotor generator with internal voltage  $E_1 = 2$  pu is connected to a round rotor synchronous motor with internal voltage  $E_2 = 1$  pu and  $X = 1.2$  pu. The reactance of the line connecting the two machines is  $0.5$  pu. When the generator supplies  $0.5$  pu power, the angle between the machines will be

(A)  $57.42^\circ$

(B)  $1^\circ$

(C)  $32.58^\circ$

(D)  $122.58^\circ$

Marks 1

Question ID:  
1156

No	Options Details	Correct Option
1	A	
2	B	
3	C	✓
4	D	

Q.52 Should real time instruments like oscilloscopes be time invariant?

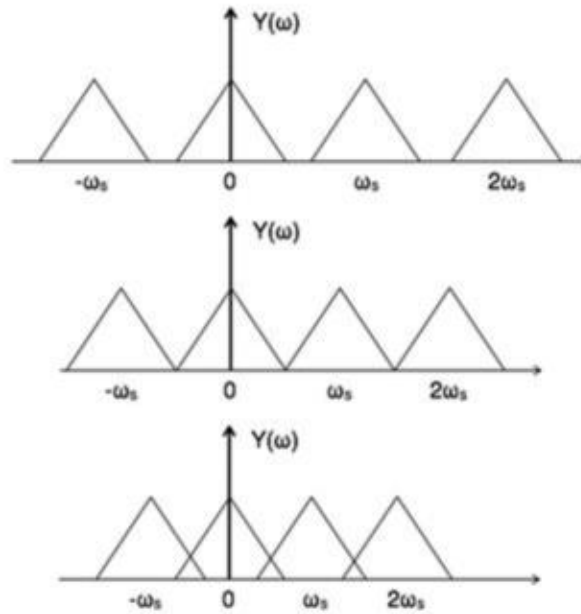
Marks 1

Question ID:  
1157

No	Options Details	Correct Option
1	Yes	✓
2	Sometimes	
3	Never	
4	They have no relation with time variance	

Q.53

Identify the correct order of the sampled frequency spectrum with three different conditions given by the following diagrams.



- (A) Over sampling, perfect sampling, under sampling
- (B) Under sampling, over sampling, perfect sampling
- (C) Perfect sampling, over sampling, under sampling
- (D) Over sampling, under sampling, perfect sampling

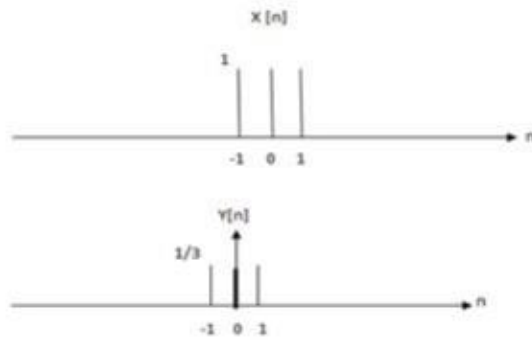
Marks 1

Question ID:  
1158

No	Options Details	Correct Option
1	A	✓
2	B	
3	C	
4	D	

Q.54

$x[n]$  and  $y[n]$  are shown below, the relationship between  $x[n]$  and  $y[n]$  is given by



- (A)  $X[n] = Y[n]/3$                       (B)  $X[n] = Y[n]$   
 (C)  $Y[n] = X[n]/3$                       (D)  $Y[n] = X[n-1]$

Marks 1

Question ID:  
1159

No	Options Details	Correct Option
1	A	
2	B	
3	C	✓
4	D	

Q.55

Given the z-transforms

$$X(z) = \frac{z(8z - 7)}{4z^2 - 7z + 3}$$

The limit of  $x[\infty]$  is

- (A) 1    (B) 2  
 (C)  $\infty$     (D) 0

Marks 1

Question ID:  
1160

No	Options Details	Correct Option
1	A	✓
2	B	
3	C	
4	D	



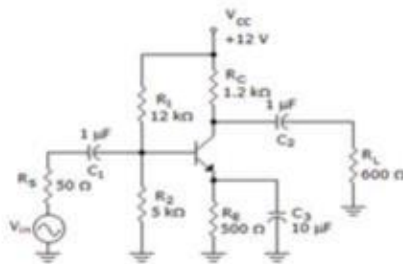
**Q.56** Clamping circuits are employed in

**Marks** 1

**Question ID:**  
1161

No	Options Details	Correct Option
1	Television, Rectifiers	
2	Rectifiers, Amplifiers	
3	Amplifiers	
4	Television	✓

**Q.57** .  
The capacitor  $C_1$  and  $C_2$  affects



- (A) high-frequency response      (B) low-frequency response  
(C) midrange response      (D) low-frequency and high-frequency

**Marks** 1

**Question ID:**  
1162

No	Options Details	Correct Option
1	A	
2	B	
3	C	
4	D	✓

**Q.58** With Sallen-Key high-pass filters, the pole frequency must be

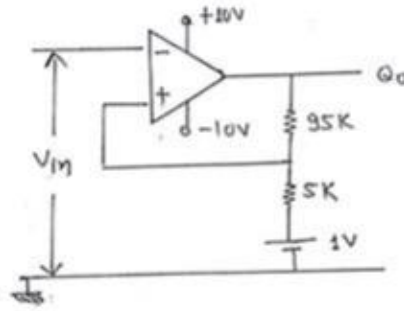
**Marks** 1

**Question ID:**  
1163

No	Options Details	Correct Option
1	Added to the K values	
2	Subtracted from the K values	
3	Multiplied by the K values	
4	Divided by the K values	✓

Q.59

What is the hysteresis voltage for the Schmitt trigger circuit shown in the figure below



- (A) 1.90V
- (B) 1.45V
- (C) 1.00V
- (D) 0.90V

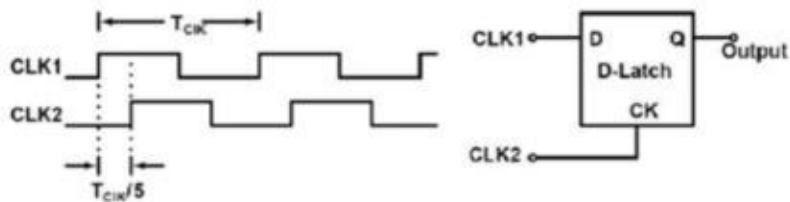
Marks 1

Question ID:  
1164

No	Options Details	Correct Option
1	A	
2	B	
3	C	✓
4	D	

Q.60

Consider the D-Latch shown in the figure, which is transparent when its clock input CK is high and has zero propagation delay. In the figure, the clock signal CLK1 has a 50% duty cycle and CLK2 is a one-fifth period delayed version of CLK1. The duty at the output at the latch in percentage is



- (A) 30
- (B) 15
- (C) 0
- (D) 100

Marks 1

Question ID:  
1165

No	Options Details	Correct Option
1	A	✓
2	B	
3	C	
4	D	

**Q.61**

Choose the correct alternative that will continue the same pattern and fill in the blank space.

34, 18, 10, 6, 4 (\_\_\_\_\_)

(A) 0

(B) 1

(C) 2

(D) 3

**Marks** 1

**Question ID:**  
1166

No	Options Details	Correct Option
1	A	
2	B	
3	C	
4	D	✓

**Q.62**

Choose the correct alternative that will continue the same pattern and fill in the blank space.

1, 2, 5, 12, 27, 58, 121 (\_\_\_\_\_)

(A) 228

(B) 256

(C) 352

(D) 456

**Marks** 1

**Question ID:**  
1167

No	Options Details	Correct Option
1	A	
2	B	
3	C	
4	D	
5	Error in question / Answer options. Grace marks will be awarded.	✓

**Q.63**

Choose the correct alternative that will continue the same pattern and fill in the blank space.

3, 8, 13, 24, 41 (\_\_\_\_\_)

(A) 70

(B) 75

(C) 80

(D) 85

**Marks** 1

**Question ID:**  
1168

No	Options Details	Correct Option
1	A	✓
2	B	
3	C	
4	D	

**Q.64**

Choose the correct alternative that will continue the same pattern and fill in the blank space.

24, 27, 31, 33, 36 (\_\_\_\_\_)

(A) 24

(B) 27

(C) 31

(D) 33

**Marks** 1

**Question ID:**  
1169

No	Options Details	Correct Option
1	A	
2	B	
3	C	✓
4	D	

**Q.65**

Museum is related to curator in the same way as prison is related to———?

**Marks** 1

**Question ID:**  
1170

No	Options Details	Correct Option
1	Manager	
2	Monitor	
3	Jailor	✓
4	Warden	

**Q.66** Soap is related to wash in the same way as Broom is related to ——?

**Marks** 1

**Question ID:**  
1171

No	Options Details	Correct Option
1	Clean	
2	Dust	
3	Sweep	✓
4	Floor	

**Q.67** Dancer is related to stage in the same way as Ministers is related ——?

**Marks** 1

**Question ID:**  
1172

No	Options Details	Correct Option
1	Pulpit	✓
2	Assembly	
3	Parliament	
4	State	

**Q.68** Needle is related to thread in the same way as pen is related to ——?

**Marks** 1

**Question ID:**  
1173

No	Options Details	Correct Option
1	Ink	✓
2	Cap	
3	Paper	
4	Word	

**Q.69** .Choose the word which is least like the other words in the group

**Marks** 1

**Question ID:**  
1174

No	Options Details	Correct Option
1	Arrow	✓
2	Axe	
3	Knife	
4	Dagger	

**Q.70**

.Choose the word which is least like the other words in the group

**Marks** 1**Question ID:**  
1175

No	Options Details	Correct Option
1	Hostel	
2	Hotel	
3	Inn	
4	Club	✓

**Q.71**

Choose the word which is least like the other words in the group

**Marks** 1**Question ID:**  
1176

No	Options Details	Correct Option
1	Fox	
2	Wolf	
3	Jackal	
4	Deer	✓

**Q.72**

Choose the word which is least like the other words in the group

**Marks** 1**Question ID:**  
1177

No	Options Details	Correct Option
1	Wheat	
2	Mustard	
3	Rice	✓
4	Gran	

Q.73

Choose missing letter out of the given letters:

Z, U, Q ? L

(A) I

(B) K

(C) M

(D) N

Marks 1

Question ID:  
1178

No	Options Details	Correct Option
1	A	
2	B	
3	C	
4	D	✓

Q.74

Choose missing letter out of the given letters:

A, CD, GHI ? UVWXY ?

(A) LMNO

(B) MNO

(C) NOPQ

(D) MNOP

Marks 1

Question ID:  
1179

No	Options Details	Correct Option
1	A	
2	B	
3	C	
4	D	✓

Q.75

Choose missing letter out of the given letters:

CAT, FDW, IGZ?

(A) KJA

(B) KTC

(C) LHD

(D) LJC

Marks 1

Question ID:  
1180

No	Options Details	Correct Option
1	A	
2	B	
3	C	
4	D	✓

**Q.76**

If sky is called bright, bright is called rain, rain is called green, green is called air, air is called blue, blue is called water then what does fly?

Marks 1

Question ID:  
1181

No	Options Details	Correct Option
1	Air	
2	Sky	
3	Bright	✓
4	Rain	

**Q.77**

If road is called water, water is called cloud, cloud is called sky, sky is called sea, sea is called road then where does the flight of Aeroplane take place?

Marks 1

Question ID:  
1182

No	Options Details	Correct Option
1	Cloud	
2	Sky	
3	Road	
4	Water	
5	Error in question / Answer options. Grace marks will be awarded.	✓

**Q.78**

A car is running at a speed of 65 Km/h how much time will it take to cover a distance of 260 Km

Marks 1

Question ID:  
1183

No	Options Details	Correct Option
1	4 Hr	✓
2	4 Hr 30 Min	
3	5 Hr	
4	4 Hr 40 Min	



**Q.79** Which of the following not related to causes of stress at work place?

**Marks** 1

**Question ID:**  
1184

No	Options Details	Correct Option
1	Role in the organization	
2	Relationship at work	
3	Carrier development	
4	Bipolar disorder	✓

**Q.80** Hero worshipping is a form of

**Marks** 1

**Question ID:**  
1185

No	Options Details	Correct Option
1	Identification	✓
2	Intellectualization	
3	Sublimation	
4	Compensation	

**Q.81** Special Train Service "Sri Ramayana Express" to visit Holy places of Rama was started on

**Marks** 1

**Question ID:**  
1186

No	Options Details	Correct Option
1	March 28, 2020	✓
2	April 30, 2020	
3	May 15, 2020	
4	June 20, 2020	

**Q.82** The Tallest Railway Bridge constructed in Jammu Kashmir on the river.

**Marks** 1

**Question ID:**  
1187

No	Options Details	Correct Option
1	Narmada	
2	Yamuna	
3	Jarpati	
4	Chenab	✓

**Q.83** Microwave oven was invented by

**Marks** 1

**Question ID:**  
1188

No	Options Details	Correct Option
1	Percy Lebaron Spencer	✓
2	Thomas Alva Edison	
3	Walter Hunt	
4	Theodore Maimen	

**Q.84** Expansion of CAT is

**Marks** 1

**Question ID:**  
1189

No	Options Details	Correct Option
1	Central Administrative Tribunal	✓
2	Central Aided Technology	
3	Combined Annual Training	
4	Comprehensive Administrative Test	

**Q.85** World Tourism Day is celebrated on

**Marks** 1

**Question ID:**  
1190

No	Options Details	Correct Option
1	Aug-20	
2	Sep-27	✓
3	Oct-30	
4	Nov-16	

**Q.86** Miss World (2019) was

**Marks** 1

**Question ID:**  
1191

No	Options Details	Correct Option
1	Zozibim Tunzig	
2	Anitha Kaur	
3	Harris Joe Lina	
4	Toni-Ann Singh	✓

**Q.87** "The Road Ahead" was written by

**Marks** 1

**Question ID:**  
1192

No	Options Details	Correct Option
1	Sundar Pichai	
2	Dr. A P J Abdul Kalam	
3	Bill Gates	✓
4	Sudha Narayana Murthy	

**Q.88** National Sport of USA is

**Marks** 1

**Question ID:**  
1193

No	Options Details	Correct Option
1	Basket Ball	
2	Soccer	
3	Base Ball	✓
4	Cricket	

**Q.89** Who is the Governor of Andhra Pradesh

**Marks** 1

**Question ID:**  
1194

No	Options Details	Correct Option
1	Tamilisai Soundararajan	
2	Biswabhusan Harichandan	✓
3	C. Vidyasagar Rao	
4	Vijubhai vala	

**Q.90** First state in India that came into existence on linguistic basis

**Marks** 1

**Question ID:**  
1195

No	Options Details	Correct Option
1	Andhra Pradesh	✓
2	Karnataka	
3	Gujarat	
4	Goa	

**Q.91**  
Given below a word in capital letters is followed by four words or groups of words.  
Select the word or groups of words that is most similar in meaning to the word in capital letters.

**MOMENTUM**

- (A) Break (B) Gravity  
(C) Reason (D) Impetus

**Marks** 1

**Question ID:**  
1196

No	Options Details	Correct Option
1	A	
2	B	
3	C	
4	D	✓

**Q.92**

Given below a word in capital letters is followed by four words or phrases as [A], [B], [C] and [D]. Select the word or phrase which is nearly opposite to the meaning of the original word and mark the correct response as [A], [B], [C] or [D] as the case may be.

**LETHARGY**

- (A) Heaviness                      (B) Sleepiness  
(C) Dullness                        (D) Enthusiasm

**Marks**        1

**Question ID:**  
1197

No	Options Details	Correct Option
1	A	
2	B	
3	C	
4	D	✓

**Q.93**

In the given below sentence the parts have been jumbled. These parts have been labelled P, Q, R and S. You are required to re-arrange the jumbled parts of the sentence and mark your response accordingly.

take leave tomorrow /finish her report/ Latha hopes to/ tonight and

- P                      Q                      R                      S  
(A) RQSP                      (B) RPQS  
(C) RQPS                      (D) RSQP

**Marks**        1

**Question ID:**  
1198

No	Options Details	Correct Option
1	A	✓
2	B	
3	C	
4	D	

**Q.94**

Complete the given sentence by choosing the most appropriate word/s from the given alternatives.

The school must be designed and built in \_\_\_\_\_ with the construction norms set by the authorities.

- (A) observance                      (B) compliance  
(C) agreement                      (D) obedience

**Marks**        1

**Question ID:**  
1199

No	Options Details	Correct Option
1	A	
2	B	✓
3	C	
4	D	

**Q.95**

Find out the correct meaning of the idiom / phrase underlined from the options given below.

The manager turned down the promotion offered to him

- (A) was happy at                      (B) ignored  
(C) accepted                          (D) rejected

**Marks**        1

**Question ID:**  
1200

No	Options Details	Correct Option
1	A	
2	B	
3	C	
4	D	✓

**Q.96**

Given are parts of the sentence. One of the parts may have a mistake. Spot the error part.

- (A) The roses                          (B) In their garden  
(C) Smell sweetly                      (D) Aren't they

**Marks**        1

**Question ID:**  
1201

No	Options Details	Correct Option
1	A	
2	B	
3	C	✓
4	D	

Q.97

**Sentence Improvement**

Improve the given sentence finding the mistake(s) if any.

His current story is not consistent on his earlier version.

- (A) to (B) about  
(C) of (D) with

Marks 1

Question ID:  
1202

No	Options Details	Correct Option
1	A	
2	B	
3	C	
4	D	✓

Q.98

**Fill in the blank**

Choose appropriate word to fill in the blank in the below given sentence.

The accident occurred while he \_\_\_\_\_ from office.

- (A) returned (B) was returning  
(C) is returning (D) was returned

Marks 1

Question ID:  
1203

No	Options Details	Correct Option
1	A	
2	B	✓
3	C	
4	D	

**Q.99**

Read the following passage and answer the questions that follows it.

It is important that we pay attention to our appearance and bearing. A lot depends on how you are able to impress others on your very first contact. The first impression lasts longer and it is quite tough to correct the initial unfavourable impression. On the other hand a first favourable impression will enable you to win over others easily and quickly.

According to the passage, to impress others one must take care of one's

- (A) language (B) values  
(C) appearance (D) character

**Marks** 1

**Question ID:**  
1204

No	Options Details	Correct Option
1	A	
2	B	
3	C	✓
4	D	

**Q.100**

Read the following passage and answer the questions that follows it.

It is important that we pay attention to our appearance and bearing. A lot depends on how you are able to impress others on your very first contact. The first impression lasts longer and it is quite tough to correct the initial unfavourable impression. On the other hand a first favourable impression will enable you to win over others easily and quickly.

Which statement is not true about the first impression?

- (A) It lasts longer  
(B) It is not influenced by appearances  
(C) It is made quickly and easily  
(D) It is difficult to correct it

**Marks** 1

**Question ID:**  
1205

No	Options Details	Correct Option
1	A	
2	B	✓
3	C	
4	D	