Comprehensive Question Preview

Questions	Choices
The sum of all the minterms of a Boolean function of 5 variables is:	1 (A+B+C+D+E) 2 1 3 0 4 ABCDE **Key :1** Edit Delete
A positive logic NOR gate is equal to negative logic _____ gate.	1 NAND 2 OR 3 NOR 4 AND **Key :2** Edit Delete
The Fourier transform of a voltage signal x(t) is X(f). The unit of |X(f)| is	1 Volt 2 Volt-sec 3 Volt/sec 4 Square of Voltage **Key :1** Edit Delete
How many OR gates are there in 1KB ROM?	1 14 2 12 3 10 4 8 **Key :4** Edit Delete
A three phase, three stack, variable reluctance step per motor has 20 poles on each rotor and stator stack. The step angle of this step per motor is	1 6° 2 18° 3 3° 4 9° **Key :1** Edit Delete
The efficiency of a dc motor when developing maximum power will be about:	1 100% 2 50% 3 Less than 50% 4 More than 50% **Key :3** Edit Delete
The slip for induction motor is calculated by	1 S = fr/fs 2 S = fr*fs 3 S = fs/fr 4 None of these **Key :1** Edit Delete

Questions	Choices
Spacing of stirrups in a rectangular beam, is	1 kept constant throughout the length 2 decreased towards the centre of the beam 3 increased at the ends 4 increased at the centre of the beam. **Key :4** Edit Delete
By over-reinforcing a beam, the moment of resistance can be increased not more than	1 25% 2 20% 3 15% 4 10% **Key :1** Edit Delete
The direction of rotation of a dc compound motor can be reversed by interchanging __ connections:	1 Armature 2 Series field 3 Shunt field 4 Armature and series field **Key :1** Edit Delete

Questions	Choices
The steady state error of a stable 'type 0' unity feedback system for a unit step function is	1 $1/(1+K_p)$ 2 $1/K_p$ 3 0 4 1 **Key :1** Edit Delete
A SCR is a _____ switch.	1 four-directional 2 two directional 3 unidirectional 4 three-directional **Key :3** Edit Delete
The intrinsic impedance of copper at high frequency is	1 Purely inductive 2 Complex with a capacitive component 3 Complex with a inductive component 4 Purely resistive **Key :3** Edit Delete
For a system with the transfer function $H(s) = \frac{3(s-2)}{4s^2-2s+1}$ the matrix A in the state space form $\dot{\boldsymbol{X}} = A\boldsymbol{X} + B\boldsymbol{u}$ is equal to	1 $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ -1 & 2 & -4 \end{bmatrix}$ 2 $\begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ -1 & 2 & -4 \end{bmatrix}$ 3 $\begin{bmatrix} 0 & 1 & 0 \\ 3 & -2 & 1 \\ 1 & -2 & 4 \end{bmatrix}$ 4 $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 0 & 1 \\ -1 & 2 & -4 \end{bmatrix}$ **Key :2** Edit Delete

Questions	Choices
With gate open, a SCR can be turned-on by making supply voltage	1 equal to break-over voltage 2 equal to cathode voltage 3 reverse 4 minimum **Key :1** Edit Delete
A Schmitt trigger uses	1 Positive feedback 2 Negative feedback 3 Compensating capacitors 4 Pullup resistors **Key :1** Edit Delete
If f (t) = 10 + 8 cos t + 4 cos 3t + 2 cos 5t +…, the magnitude of the dc component is:	1 4 2 8 3 29 4 10 **Key :4** Edit Delete
A two port network is symmetrical if	1 AD – BC = 1 2 Z11 Z22 – Z12 Z21 = 1 3 Z12Z21 = 1 4 h11 h22 – h12 h21 = 1 **Key :4** Edit Delete
A plane electromagnetic wave traveling along the + z direction, has its electric field given by E_x= 2 cos(ωt) and E_y= 2 cos(ω + 90°)the wave is	1 left circularly polarized 2 right circularly polarized 3 elliptically polarized 4 linearly polarized **Key :1** Edit Delete
If the potential V across a capacitor (Capacitance C and Charge Q) is quadrupled, the value of new capacitance	1 Remains same 2 Increases four fold 3 Is zero 4 Decreases four fold **Key :1** Edit Delete
A dielectric medium is said to be linear if	1 The permittivity is a linear function of electric force 2 The permittivity is not a function of the electric force 3 The permittivity is same everywhere 4 The relative permittivity is same in all the directions **Key :2** Edit Delete

Questions	Choices
The potential of an electric dipole at a large but finite distance r from the mid-point of a dipole	1 Is inversely proportional to r^2 2 Is inversely proportional to r^3 3 Is independent of r 4 Is inversely proportional to r **Key :1** Edit Delete
If current density in a conductor is J and its conductivity is σ, then power dissipated per unit volume of the conductor is	1 σ J 2 σ J^2 3 σ^2 J 4 J^2/σ **Key :4** Edit Delete
Vector potential is a vector	1 whose curl is equal to the magnetic flux density 2 whose divergence is equal to the electric potential 3 whose curl is equal to the electric field intensity 4 which is equal to the vector product E x H **Key :1** Edit Delete
When the total charge in a capacitor is doubled, the energy stored:	1 Remains the same 2 is halved 3 is doubled 4 is quadrupled **Key :4** Edit Delete
The wavelength of wave with propagation constant $(0.1\ \pi+j\ 0.2\pi)^{-1}$is	1 10 m 2 $2/\sqrt{0.05}m$ 3 20 m 4 30 m **Key :1** Edit Delete
The depth of penetration of a wave in a lossy dielectric increases with increasing	1 Permittivity 2 Conductivity 3 Wavelength 4 Permeability **Key :3** Edit Delete

Questions	Choices
A length of wire carries a steady current. It is bent to form a circular plane coil of one turn. The same length is now bent more sharply to give a double loop of smaller radius. The magnetic field at the centre caused by the same current is	1 half of first value 2 one-fourth of first value 3 unaltered 4 four times as before **Key :4** Edit Delete
A parallel plate capacitor with plate separation‘d’ is connected to a battery. Without breaking any of the connections, insulating handles are used to increase the plate separation to 2d. The capacitor charge ‘Q’	1 Has no relation with plate separation 2 Decreases by a factor of 2 3 Remains same 4 Increases by a factor of 2 **Key :2** Edit Delete
Two thin spherical shells, one with radius R and the other with radius 2R, surround an isolated charged point particle. The ratio of the number of field lines through the larger sphere to the number through the smaller is:	1 1 2 1/2 3 2 4 4 **Key :1** Edit Delete
Which of the following is not the same as watt?	1 joule/sec 2 amperes/volt 3 (amperes)2 x ohm 4 amperes x volts **Key :2** Edit Delete
$\nabla\times\nabla\times P$, where P is a vector, is equal to	1 $\nabla(\nabla\cdot P)-\nabla^2 P$ 2 $\nabla^2 P+\nabla\times P$ 3 $\nabla^2 P+\nabla(\nabla\cdot P)$ 4 $P\times\nabla\times P-\nabla^2 P$ **Key :1** Edit Delete
If the potential V across a capacitor is quadrupled, the value of new capacitance is	1 constant 2 one-fourth 3 Quadrupled 4 zero **Key :1** Edit Delete

Questions	Choices
At the boundary surface between a good conductor and a perfect insulator	1 The normal component of electric field intensity in the insulation is zero 2 The normal component of electric flux density in the insulator is zero 3 The tangential component of electric field intensity in the insulation has a finite value 4 The normal component of current density in the conductor has a finite value **Key :3** Edit Delete
A line current of finite length is along z direction of cylindrical coordinates. The direction of magnetic field intensity	1 Depends on length of the line 2 Is in φ direction 3 Is in z direction 4 Is in r direction **Key :2** Edit Delete
A planar coil rotates at a constant angular velocity in a uniform magnetic field. The maximum voltage induced in the coil is 12 V. What is the angle between the direction of flux density and normal to the plane of the coil when the induced voltage is 6 V?	1 45^0 2 60^0 3 30^0 4 75^0 **Key :3** Edit Delete
The impulse response of a system is $h(t) = tu(t)$. For an input $u(t-1)$, the output is	1 $\frac{t^2}{2}u(t)$ 2 $\frac{t(t-1)}{2}u(t-1)$ 3 $\frac{(t-1)^2}{2}u(t-1)$ 4 $\frac{t^2-1}{2}u(t-1)$ **Key :3** Edit Delete
The capacitance per unit length of a transmission line with two parallel cylindrical conductors each of radius 'a' and conductor spacing 2h is C. Then, the capacitance of a cylindrical conductor of radius a and located at a height h above the ground plane is	1 2C 2 C/2 3 C 4 C/4 **Key :1** Edit Delete

Questions	Choices
The conductivity of a metal is equal to the product of	1 Volume charge density of free electrons and drift velocity' 2 Volume charge density of free electrons and mobility 3 Drift velocity, charge concentration and mobility 4 Drift velocity and mobility **Key :2** Edit Delete
The electric field on the surface of a perfect conductor is 2 V/m. The conductor is immersed in water ε=80 ε_0. The surface charge density on the conductor is	1 0 $C/\ m^2$ 2 $1.41\times10^{-9}C/\ m^2$ 3 $1.8\times10^{-11}C/\ m^2$ 4 2 $C/\ m^2$ **Key :2** Edit Delete
The depth of penetration of electromagnetic wave in a medium having conductivity σ at a frequency 1 KHz is 25 cm. The depth of penetration at a frequency of 4 KHz will be	1 12.50 cm 2 100. 00 cm 3 50.00 cm 4 6.25 cm **Key :1** Edit Delete
Poynting vector gives	1 intensity of magnetic field 2 direction of polarization 3 rate of energy flow 4 intensity of electric field **Key :3** Edit Delete
Divergence theorem is applicable for	1 time varying fields only 2 both static and time varying fields 3 static field only 4 electric fields only **Key :2** Edit Delete
Consider a long, two-wire line composed of solid round conductors. The radius of both conductors is 0.25 cm and the distance between their centres is 1 m. If this distance is doubled, then the inductance per unit length	1 doubles 2 halves 3 decreases but not halve 4 increases but not doubles **Key :4** Edit Delete

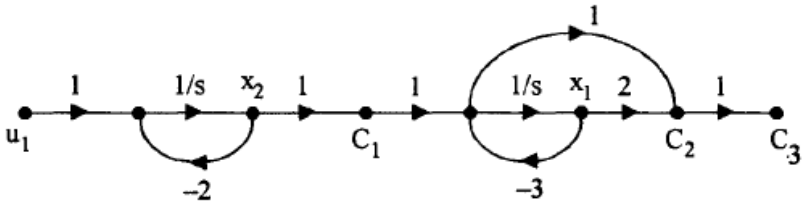
Questions	Choices
What is the exact representation of electric field strength of a point charge?	1 E = kQ/d 2 E = kQ/d^2 3 E = Q/d^2 4 E = 2k Q/d^2 **Key :2** Edit Delete
The unit of Poynting vector is	1 Watt per metre square 2 watt per metre cube 3 joule per metre cube 4 joule per metre square **Key :1** Edit Delete
A long coaxial transmission line has two dielectric layers of different permittivities between the conductors. To solve the one-dimensional Laplace's equations for the scalar potential in the dielectric regions, the number of boundary conditions needed is	1 2 2 4 3 3 4 5 **Key :2** Edit Delete
Breaking capacity of the circuit breaker is usually expressed in:	1 MVA 2 Kilo-amperes 3 kV 4 MW **Key :1** Edit Delete
The unit of $\nabla \times H$ is	1 Ampere/meter 2 Ampere 3 Ampere-meter 4 Ampere/ sq.meter **Key :4** Edit Delete
The Nodal method of circuit analysis is based on,	1 KVL, KCL and Ohms law 2 KVL and Ohms law 3 KCL and Ohms law 4 KVL and KCL **Key :3** Edit Delete
A conducting bar moves in a uniform magnetic field at a constant velocity between two conducting rails of negligible resistance. The flux density, velocity and distance between the rails are 0.25 T, 12 m/s and 40 cm respectively. The flux density is at an angle of 60^0 with normal to the plane containing the rails. A high resistance voltmeter is connected between the ends of the rails. The reading of the voltmeter is	1 1.9V 2 0.6V 3 1.04V 4 1.2V **Key :2** Edit Delete

Questions	Choices
A stationary single-turn circular conducting loop is located in a uniform magnetic field with its axis along the direction of flux density. The radius of the loop is 'a' and the flux density is B_0 sin ωt. The electric field intensity along the loop is	1 aω B_0 sin ωt 2 0.5 aω B_0sinωt 3 -0.5 aω B_0 cos ωt 4 0.5 aω B_0 cos ωt **Key :3** Edit Delete
When the separation between two charges increases, the electric potential energy of charges	1 remains the same 2 increases 3 decreases 4 may increase or decreases **Key :3** Edit Delete
The snubber circuit basic design expression is given by	1 = 0.632Vs / τ 2 = 0.632Vs / fτ 3 = 0.632Vs / f 4 All answers are wrong **Key :1** Edit Delete
If a long hollow pipe carries a direct current, the magnetic field due to current will be	1 Only inside the pipe 2 Only outside the pipe 3 Both inside and outside the pipe 4 Neither inside nor outside the pipe **Key :2** Edit Delete
In a d.c. generator, the generated e.m.f is directly proportional to the	1 number of armature parallel paths 2 number of armature parallel paths & Pole flux 3 no of slots 4 Speed **Key :4** Edit Delete
Consider the following statements. Which of the following statement is correct ?	1 There are sinks and source for magnetic fields 2 Electric and magnetic fields are in time quadrature 3 In lossless dielectric, relaxation time is finite 4 In conducting medium, the field attenuates exponentially with increasing depth **Key :4** Edit Delete

Questions	Choices
When a magnetic flux cuts across 200 turns at the rate of 2 Wb/s , the induced voltage is	1 400 V 2 100 V 3 0 V 4 600 V **Key :1** Edit Delete
The magnetic field intensity (in m A) at the centre of a circular coil of diameter 1 meter and carrying current of 2 A is	1 3 2 4 3 8 4 2 **Key :3** Edit Delete
The relative permittivity of free space is given by	1 1 2 10 3 100 4 1000 **Key :1** Edit Delete
A wave is incident normally on a good conductor. If the frequency of a plane electromagnetic wave increases four times, the skin depth, will	1 decrease by a factor of 2. 2 increase by a factor of 2. 3 decrease by a factor of 4. 4 remain the same. **Key :1** Edit Delete
Poynting vector signifies	1 current density vector 2 power density vector producing electrostatic field 3 Power density vector producing electromagnetic field 4 current density vector producing electromagnetic field **Key :3** Edit Delete
For finite difference analysis, a rectangular plate measuring 10 by 20 cm is divided into eight subregions by lines 5 cm apart parallel to the edges of the plates. How many free nodes are there if the edges are connected to some source?	1 15 2 12 3 9 4 3 **Key :4** Edit Delete
When an EM wave is incident on a dielectric, it is	1 Partially transmitted and partially reflected 2 fully reflected 3 Fully transmitted 4 none of these. **Key :1** Edit Delete
With respect to equipotential surface pick the odd one out.	1 Potential is different every where 2 Work done in moving charge from one point to another is zero 3 Potential is same every where 4 No current flows on this surface **Key :1** Edit Delete

Questions	Choices
The transient stability of the power system can be effectively improved by	1 Excitation control 2 Single pole switching of circuit breakers 3 Phase shifting transformer 4 Increasing the turbine valve opening **Key :2** Edit Delete
The force between two charges is 120 N. If the distance between the charges is doubled, the force will be	1 40 N 2 30 N 3 60 N 4 15 N **Key :2** Edit Delete
Which type of ADC quantizes the analog signal into a stream of bits whose amount corresponds to the signal level?	1 Flash ADC 2 Dual-slope 3 Successive approximation 4 Sigma-delta **Key :4** Edit Delete
In opamp the ratio of the voltage, that is feedback, to the input is known as	1 gain 2 loop gain 3 feedback factor 4 transfer function **Key :3** Edit Delete
A comparator with a trip point of zero is sometimes called a	1 Positive limit detector 2 Zero-crossing detector 3 Threshold detector 4 Half-wave detector **Key :2** Edit Delete
If the current through a 10 mH inductor increases from zero to 2 A, how much energy is stored in the inductor?	1 20mJ 2 5mJ 3 10mJ 4 40mJ **Key :1** Edit Delete
Turn-on time of an SCR can be reduced by using a	1 triangular pulse 2 trapezoidal pulse 3 rectangular pulse of low amplitude and wide width 4 rectangular pulse of high amplitude and narrow width **Key :4** Edit Delete

Questions	Choices
The 741 has become the most widely used opamp because	1 it has large voltage gain 2 it has lower output impedance 3 it is inexpensive and easy to use 4 all the characteristics specified in the options **Key :4** Edit Delete
Differentiation of the step function is ---------- function	1 Step 2 Delta 3 Parabola 4 Ramp **Key :2** Edit Delete
Logic system in which the higher of the two levels is represented by 1 and lower is represented by 0.	1 Indeterminate state 2 Both positive and negative logic system 3 Positive logic system 4 Negative logic system **Key :3** Edit Delete
A dielectric material must be	1 Resistor 2 good conductor 3 semi conductor 4 insulator **Key :4** Edit Delete
1 Tesla =	1 1 Weber/m 2 1 Weber/mm^2 3 1 Weber/m^2 4 1 Weber/cm^2 **Key :3** Edit Delete
A true differential amplifier	1 amplifies the input voltage applied at the positive input terminal 2 amplifies the input voltage applied at the negative input terminal 3 amplifies the difference between the input voltages 4 none of the options specified **Key :3** Edit Delete
Identify which of the following quantities is not a vector:	1 electric flux density 2 force 3 work 4 electric field **Key :3** Edit Delete

Questions	Choices
A material has conductivity of 10^{-2} mho/m and a relative permittivity of 4. The frequency at which the conduction current in the medium is equal to the displacement current is	1 45 MHz 2 90 MHz 3 450 MHz 4 900 MHz **Key :1** Edit Delete
What controls the output pulse width of a one shot multivibrator?	1 Clock frequency 2 the width of the clock pulse 3 an RL time constant 4 an RC time constant **Key :4** Edit Delete
A long line charge is parallel to the axis of a long cylindrical conductor and it is located outside the conductor. The radius of the cylinder is 'a' and its axis is at a distance 'd' from the line charge. An image charge located on the line that is perpendicular to the line charge and the conductor axis satisfies the necessary boundary conditions. The distance of the image line charge from the real line charge is	1 1- [a / (d* d)] 2 d - [(a * a) / d] 3 d * d - (a/d) 4 (a *a)/ d **Key :2** Edit Delete
A capacitor consists of two metal plates each 500 X 500 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	1 1476 pF 2 983.3 pF 3 637.7 pF 4 9956.25 pF **Key :2** Edit Delete
The state diagram of a system is shown in following figure.  The system is	1 Controllable and observable 2 Controllable but not observable 3 Observable but not controllable 4 Neither controllable nor observable **Key :1** Edit Delete
A piece of semiconductor carrying direct current is located in a steady magnetic field so that the magnetic flux density is perpendicular to the direction of flow of current. The direction of Hall voltage is	1 Along the current density vector 2 Along the flux density vector 3 Perpendicular to both current density and flux density vectors 4 Depends on the relative values of current density and flux density **Key :3** Edit Delete

Questions	Choices
The internal inductance of a round conductor carrying steady current is	1 Independent of conductor radius 2 Proportional to square of conductor radius 3 Inversely proportional to conductor radius 4 Directly proportional to conductor radius **Key :1** Edit Delete
The time averaged Poynting vector, in W/m^2, for a wave with $\vec{E}=24e^{j(\omega t+\beta z)}\vec{a}_y \text{V/m}$ in free space is	1 $-2.4\pi\vec{a}_z$ 2 $2.4\pi\vec{a}_z$ 3 $4.8\pi\vec{a}_z$ 4 $-4.8\pi\vec{a}_z$ **Key :1** Edit Delete
The electric field component of a time harmonic plane EM wave traveling in a non-magnetic lossless dielectric medium has amplitude of 1 V/m. If the relative permittivity of the medium is 4, the magnitude of the time-average power density vector (in W/m^2)	1 $\frac{1}{30\pi}$ 2 $\frac{1}{60\pi}$ 3 $\frac{1}{120\pi}$ 4 $\frac{1}{240\pi}$ **Key :3** Edit Delete
Most widely used RTD element is	1 Copper 2 Nickel 3 Platinum 4 Iron **Key :3** Edit Delete
An electrostatic field is said to be conservative when	1 The divergence of the field is equal to zero 2 The curl of the field is equal to zero 3 The curl of the field is equal to $-\frac{\partial B}{\partial t}$ 4 The Laplacian of the field is equal to $\mu\varepsilon\frac{\partial^2 E}{\partial t^2}$ **Key :2** Edit Delete

Questions	Choices
A four quadrant operation require:	1 Two full converters in series 2 Two full converters connected back to back 3 Two semi conductors connected back to back 4 Two full converters connected in parallel **Key :2** Edit Delete
In a circulating-current type of dual converter, the nature of the voltage across the reactor is:	1 Alternating 2 Pulsating 3 Direct 4 Triangular **Key :1** Edit Delete
Copper behaves as a	1 Conductor or dielectric depending on the frequency 2 Conductor always. 3 Conductor or dielectric depending on the applied electric field strength 4 Conductor or dielectric depending on the electric current density **Key :2** Edit Delete
For dynamic equalizing circuit used for series connected SCRs, the choice of C is based on:	1 Reverse recovery characteristics 2 Rise time characteristics 3 Turn-off characteristics 4 Turn-on characteristics **Key :1** Edit Delete
It is recommended to use UJT oscillator for gate-triggering of the thyristors mainly because	1 it is less expensive 2 it provides sharp firing pulses 3 it is fairly simple 4 none of these **Key :2** Edit Delete
The function of snubber circuit connected across the SCR is to:	1 Suppress dv/dt 2 Increase dv/dt 3 Decrease dv/dt 4 Decrease di/dt **Key :1** Edit Delete
An SCR does not conduct for a certain value of load resistance. In order to make it ON, it is necessary to	1 decrease the load resistance 2 increase the resistance 3 increase the gate-pulse 4 none of these **Key :1** Edit Delete

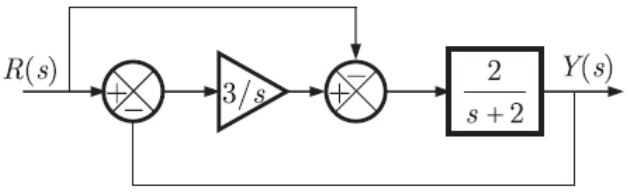
Questions	Choices
For thyristors, pulse triggering is preferred to dc triggering because	1 triggering system is required for a very short duration 2 pulse system is simpler 3 gate dissipation is low 4 all of these **Key :4** Edit Delete
If a medium has a greater number of free charges, the medium	1 Behaves like a perfect dielectric 2 Has no polarization 3 behaves like an insulator 4 Has larger polarization **Key :2** Edit Delete
When an alternating current passes through an ohmic resistance the electrical power converted in to heat is	1 Reactive power 2 Apparent power 3 Active and reactive power 4 True power **Key :4** Edit Delete
An opamp is	1 a high gain push pull amplifier 2 a low impedance amplifier. 3 a differential amplifier 4 a direct coupled amplifier **Key :4** Edit Delete
Stringing chart is used in TLs for	1 for designing the tower 2 for calculating the sag in the conductor 3 determining the distance between the conductor 4 in the design of insulator string **Key :2** Edit Delete
Mesh analysis employs	1 KVL 2 lence law 3 KCL 4 both KVL and KCL **Key :1** Edit Delete

Questions	Choices
When high permeability core is used for a transformer in order, that	1 The magnetizing current has a low core loss 2 The voltage ratio remains constant 3 The magnetizing current has a low value 4 The magnetizing current has a low leakage reactance **Key :3** Edit Delete
Which of following is not a part of DC machine?	1 Armature. 2 Commutator. 3 Damping winding. 4 Field winding. **Key :3** Edit Delete
The no-load current in a transformer with respect to primary voltage	1 Lags by 90° 2 Leads by slightly less than 90° 3 Leads by 90° 4 Lags by slightly less than 90° **Key :4** Edit Delete
The core of a transformer is laminated, which is lightly insulated by varnish in order to reduce	1 Core reluctance 2 Eddy current loss 3 Hysteresis loss 4 Both hysteresis and eddy current loss **Key :2** Edit Delete
The machine used in windmills is_____	1 all 2 Alternator 3 synchronous generator 4 Induction generator **Key :4** Edit Delete
The tests needed to be performed to determine the leakage reactance of a transformer are	1 Test by an impedance bridge 2 OC Test 3 SC Test 4 Both OC and SC tests **Key :4** Edit Delete

Questions	Choices
The SCR is turned-off when the anode current falls below	1 latching current 2 breakover voltage 3 holding current 4 forward current rating **Key :3** Edit Delete
Gate characteristics of a thyristor	1 is a straight line passing through the origin 2 is of the type, V V = a + b. IV 3 is a curve between V g and Ig 4 has a spread between two curves of V g = Ig. **Key :4** Edit Delete
The advantages of Hay's bridge over maxwell's inductance –capacitance bridge is because	1 It can be used for measurement of inductance of low Q coils 2 It can be used for measurement of inductance of high Q coils 3 Its equation for balance do not contain any frequency term 4 All answers are wrong **Key :2** Edit Delete
Inductance is measured by which one of the following ?	1 Wien bridge 2 Schering bridge 3 Maxwell bridge 4 Owen bridge **Key :3** Edit Delete
In a dc motor, the shaft torque is less than armature torque . This is due to:	1 Eddy current loss 2 Hysteresis loss 3 Stray loss 4 All the losses **Key :3** Edit Delete
An average-reading digital multimeter reads 10V when fed with a triangular wave, symmetric about the time-axis.For the same input an rms-reading meter will read	1 $20\sqrt{3}$ 2 $10/\sqrt{3}$ 3 $20/\sqrt{3}$ 4 $10\sqrt{3}$ **Key :1** Edit Delete
An analog voltmeter uses external multiplier settings. With a multiplier setting of 20kΩ, it reads 440V and-with a multiplier setting of 80kΩ it reads 352V. For a multiplier setting of 40kΩ,voltmeter reads	1 371V 2 383V 3 394V 4 406 V **Key :4** Edit Delete

Questions	Choices
The discrete-time transfer function $\frac{1-2z^{-1}}{1-0.5z^{-1}}$ is	1 Non-minimum phase and unstable 2 Minimum phase and unstable 3 Minimum phase and stable 4 Non-minimum phase and stable **Key :4** Edit Delete
In a multimeter, internal battery is required to measure	1 Voltage 2 Resistance 3 frequency 4 current **Key :2** Edit Delete
Systematic error of an instrument for measurement can be minimized by	1 selecting a proper measuring device for the particular application 2 calibrating the measuring device against a standard device 3 applying correction factors for change of ambient conditions 4 carrying out all of the above **Key :4** Edit Delete
Modern electronic multimeters measure resistance by	1 applying a constant voltage across the unknown resistance and measuring the current 2 using a bridge circuit 3 forcing a constant current and measuring the voltage across unknown resistance 4 taking advantage of an electronic bridge compensator for nulling **Key :4** Edit Delete
A circuit was tuned for resonance by 8 students and the values of resonant frequency in kHz were recorded as 532,548,543,535,546,531,543 and 536. The average deviation of the readings is…….	1 5.5 kHz 2 5.75 kHz 3 5.25 kHz 4 5.15 kHz **Key :2** Edit Delete

Questions	Choices
A PMMC type ammeter has full scale current of 100μA and a coil resistance of 100Ω. The resistance required to convert the 100μA ammeter into 1A full scale dc ammeter is	1 10mΩ in series with the meter 2 10mΩ in parallel with the meter 3 1mΩ in series with the meter 4 1mΩ in parallel with the meter **Key :2** Edit Delete
In majority of instruments damping is provided by	1 Spring 2 Fluid friction 3 eddy currents 4 all the above **Key :3** Edit Delete
The order in which the temperature transducers exhibit non-linearity (decreasing manner) is ……..	1 Thermistor, RTD, Thermocouple 2 Thermistor, Thermocouple, RTD 3 Thermocouple, RTD, Thermistor 4 RTD, Thermocouple, Thermistor **Key :4** Edit Delete
A strain gauge has a gauge factor of 4. It is attached to a metal bar that stretches from 0.25m to 0.255m when strained. What is percentage change in resistance?	1 2% 2 8% 3 0.8% 4 8.8% **Key :1** Edit Delete
Which of the following statements is true?	1 The LED works when it is forward biased and the photodiode works when it is reverse biased. 2 The LED works when it is reverse biased and the photodiode works when it is reverse biased. 3 The LED works when it is forward biased and the photodiode works when it is forward biased. 4 The LED works when it is reverse biased and the photodiode works when it is forward biased. **Key :3** Edit Delete

Questions	Choices
In a nonlinear op-amp circuit, the	1 Op amp never saturates 2 Output shape is the same as the input shape 3 Feedback loop is never opened 4 Op amp may saturate **Key :1** Edit Delete
An ideal operational amplifier has	1 infinite bandwidth 2 All the characteristics specified in the options 3 infinite output impedance 4 zero input impedance **Key :1** Edit Delete
Turn-on time for an SCR is 10 msec. If an inductance is inserted in the anode circuit, then the turn-on time will be	1 about 10 msec 2 less than 10 msec 3 more than 10 msec 4 10 msec **Key :3** Edit Delete
The forward voltage drop during SCR-on state is 1.5 V. This voltage drop	1 varies linearly with load current 2 decreases slightly with load current 3 remains constant and its independent of load current 4 increases lightly with load current **Key :2** Edit Delete
A thyristor can be termed as	1 dc switch 2 AC switch 3 square-wave switch 4 both DC switch and AC switch **Key :1** Edit Delete
On-state voltage drop across a thyristor used in a 250 V supply system is of the order of	1 None of these 2 240-250 V 3 1-1.5 V 4 100-110 V **Key :3** Edit Delete
When subject to a unit step input, the closed loop control system shown in the figure will have a steady state error of 	1 -1 2 -0.5 3 0 4 0.5 **Key :3** Edit Delete

Questions	Choices
The state variable description of a linear autonomous system is, $\dot{X} = AX$ where X is the two dimensional state vector and A is the system matrix given by $A = \begin{bmatrix} 0 & 2 \\ 2 & 0 \end{bmatrix}$. The roots of the characteristic equation are	1 -2 and $+2$ 2 $-j2$ and $+j2$ 3 -2 and -2 4 $+2$ and $+2$ **Key :1** Edit Delete
100 W, 250 V lamp is connected in series with a 100 W, 200 V lamp across 250 V supply. Assume lamp resistance to remain unaltered. The circuit current is	1 0.144 A 2 0.244 A 3 0.344 A 4 0.444 A **Key :2** Edit Delete
In a thyristor, anode current is made up of	1 electrons only 2 electrons or holes 3 electron and holes 4 none of these **Key :3** Edit Delete
For a tachometer, if $\theta(t)$ is the rotor displacement in radians, $e(t)$ is the output voltage and K_t is the tachometer constant in V/rad/sec, then the transfer function, $\frac{E(s)}{Q(s)}$ will be	1 $K_t s^2$ 2 K_t/s 3 $K_t s$ 4 K_t **Key :3** Edit Delete
If the system matrix of a linear time invariant continuous system is given by $A = \begin{bmatrix} 0 & 1 \\ -3 & -5 \end{bmatrix}$, its characteristic equation is given by	1 $s^2 + 5s + 3 = 0$ 2 $s^2 - 3s - 5 = 0$ 3 $s^2 + 3s + 5 = 0$ 4 $s^2 + s + 2 = 0$ **Key :1** Edit Delete
The negative number equivalent of -(A) of radix 16 is	1 10 2 6 3 16 4 5 **Key :2** Edit Delete
Assertion (A): A fully controlled bridge converter can operate in first and fourth quadrant. Reason (R): A semi converter is cheaper than a full converter.	1 Both A and R are correct and R is correct explanation of A 2 A is wrong but R is correct 3 A is correct but R is wrong 4 Both A and R correct but R is not correct explanation of A **Key :2** Edit Delete

Questions	Choices
In a SCR	1 forward-breakover voltage is low in the forward blocking state. 2 gate-current has to be kept ON continuously for conduction. 3 gate current is directly proportional to forward breakover voltage. 4 as gate-current is raised, forward breakover voltage reduces. **Key :2** Edit Delete
The average on-state current for an SCR is 20 A for conduction angle of 120°. The average on-state current for 60° conduction angle will be	1 less than 20 A 2 10 A 3 20 A 4 40 A **Key :1** Edit Delete
In an induction motor, the frequency of rotor currents at standstill is equal to_____ for a supply frequency f.	1 2f 2 sf 3 zero 4 f **Key :4** Edit Delete
A 200/100 V transformer has a pu impedance of 0.05. The voltage needed to be applied on the HV side to circulate full-load current during short-circuit test is	1 5 V 2 200 V 3 10 V 4 100 V **Key :3** Edit Delete
Which of the following is not a basic element of a transformer ?	1 core 2 primary winding 3 secondary winding 4 mutual flux **Key :4** Edit Delete
When the SCR conducts, the forward voltage drop	1 remains constant with load current 2 increases slightly with load current 3 is 1 to 1.5 V 4 is 0.7 V **Key :2** Edit Delete

Questions	Choices
A class E chopper	1 can operate in second quadrant only 2 can operate in first or third quadrant 3 can operate in all the four quadrants 4 can operate in either second or third quadrant **Key :3** Edit Delete
The turn-on time of a SCR with inductive load is 20 ms. The pulse train frequency is 2.5 kHz with a mark/space ratio of 1/10, then	1 the SCR will not turn-on 2 the SCR will turn-on if inductance is removed 3 the SCR will turn-on if pulse frequency is increased to two times. 4 the SCR will turn-on **Key :1** Edit Delete
In an ideal transformer,	1 windings have no resistance 2 primary winding 3 secondary winding 4 mutual flux **Key :4** Edit Delete
The main purpose of using core in a transformer is to	1 decrease iron losses 2 prevent eddy current loss 3 eliminate magnetic hysteresis 4 decrease reluctance of the common magneticcircuit. **Key :4** Edit Delete
A cycloconverter uses	1 natural commutation 2 forced commutation 3 both natural and forced commutation together 4 either natural or forced commutation **Key :3** Edit Delete
Pulsation loss in rotating machines occurs in the	1 Armature teeth and pole shoes 2 Pole body 3 Armature teeth and pole body 4 Stator and rotor cores **Key :1** Edit Delete
For a L- L fault which of the following sequence network will not be involved for calculating the fault current.	1 Zero 2 Negative 3 Positive 4 all the three **Key :1** Edit Delete

Questions	Choices
Transformer cores are laminated in order to	1 simplify its construction 2 minimise eddy current loss 3 reduce cost 4 reduce hysteresis loss. **Key :2** Edit Delete
A transformer having 1000 primary turns is connected to a 250-V a.c. supply. For a secondary voltage of 400 V, the number of secondary turns should be	1 1600 2 250 3 400 4 1250 **Key :1** Edit Delete
The essential requirement(s) for power plants to be operated as as base load is/are	1 All of the requirements specified in the options 2 Capacibility of operating continuously for long period. 3 Requirement of few operating personal and economical repair. 4 Low operating cost. **Key :2** Edit Delete
Hysteresis prevents false triggering associated with	1 sinusoidal input 2 Stray capacitances 3 Noise voltages 4 Trip points **Key :2** Edit Delete
The closed loop transfer function of a control system is given by G(s) = 2(s-1)/[(s+1)(s+2)] For a unit step input the output is	1 -3e^-2 t + 4e^– t -1 2 -3e^-2 t - 4e^– t +1 3 Zero 4 Infinity **Key :1** Edit Delete
The motor equation is given by	1 V=IaRa-V 2 V=Eb-IaRa 3 V=Eb x IaRa 4 V=Eb+IaRa **Key :4** Edit Delete
In a synchro error detector, the output voltage is proportional to [¿(t)]n, where ¿(t) is the rotor velocity and n equals	1 -2 2 -1 3 1 4 2 **Key :3** Edit Delete
The capacitance of a capacitor is not affected by	1 Distance between plates 2 area of plates 3 all of the options specified 4 Thickness of plates **Key :3** Edit Delete

Questions	Choices
In a capacitor the electric charge is stored in	1 Metal plates 2 Both metal plates and dielectric 3 dielectric 4 none of these **Key :2** Edit Delete
A capacitor consists of	1 Two insulators separated by a conductor 2 two conductors separated by an insulator 3 two conductors only 4 Two insulators only **Key :2** Edit Delete
The relative permittivity of free space is given by	1 1 2 10 3 100 4 1000 **Key :1** Edit Delete
What capacitance must be placed in series with a 15μF capacitor to give a total capacitance of 5μF	1 20μF 2 10 μF 3 5 μF 4 7.5 μF **Key :2** Edit Delete
LVDT is used to measure	1 Displacement 2 Temperature 3 Humidity 4 Force **Key :1** Edit Delete
The inertia constant H of a machine of 200 MVA is 2. p.u. Its value corresponding to 400 MVA will be	1 4.0 2 2.0 3 1.0 4 0.5 **Key :3** Edit Delete
High Voltage DC (HVDC) transmission is mainly used for	1 bulk power transmission over very long distances 2 inter-connecting two systems with same nominal frequency 3 minimizing harmonics at the converter stations 4 eliminating reactive power requirement in the operation **Key :1** Edit Delete
Series capacitive compensation in EHV transmission lines is used to	1 Improve the protection of the line 2 Reduce the voltage profile 3 Improve the stability of the system 4 Reduce line loading **Key :3** Edit Delete

Questions	Choices
The incremental fuel cost for two generating units are given by C1= 25+0.2PG1;C2= 32+0.2PG2 where PG1 and PG2 are real power generated by the units. The economic allocation of the total load of 250MW, neglecting transmission loss is given by:	1 PG1=100MW,PG2=150MW 2 PG1=125MW=PG2 3 PG1=109.75MW,PG2=140.25MW 4 PG1=140.25MW,PG2=109.75MW **Key :4** Edit Delete
The cause of power system instability is	1 alternator loosing its excitation 2 switching ON and OFF in the line 3 short circuit fault in the lines 4 all **Key :4** Edit Delete
The transformer will work on ……	1 a.c. only 2 d.c. only 3 All the answers are wrong 4 a.c. as well as d.c **Key :1** Edit Delete
When bundle conductors are used in place of single conductors, the effective inductance and capacitance will respectively	1 increase and decrease 2 remain unaffected and increase 3 decrease and remain unaffected 4 decrease and increase **Key :3** Edit Delete
Real power flow in the transmission lines is largely effected by	1 Line Resistance 2 System Voltage 3 Load angle 4 Conductor spacing **Key :3** Edit Delete
A consumer consume. 600 kWh per day at a load factor of 0.40. If the coneumer increases the load factor of 0.70 without increasing the maximum demand, what is the consumption of energy in kWh	1 1100 kWh 2 1000 kWh 3 950 kWh 4 1050 kWh **Key :4** Edit Delete

Questions	Choices
In relation to the synchronous machines, which on of the following statements is false?	1 Short circuit ratio is the ratio of the field current required to produces the rated voltage on open circuit to the rated armature current 2 The damper bars help the synchronous motor self-start 3 The V-cure of a synchronous motor represents the variation in the armature current with field excitation, at a given output power 4 In salient pole machines, the direct-axis synchronous reactance is greater than the quadrature-axis synchronous reactance. **Key :1** Edit Delete
The conductor of a 10 km long, single phase, two wire line are separated by a distance of 1.5 m. The diameter of each conductor is 1 cm, If the conductors are of copper, the inductance of the circuit is	1 19.6 mH 2 23.8 mH 3 50.0 mH 4 45.3 mH **Key :2** Edit Delete
In a string of suspension insulators, the voltage distribution across the different units of a string could be made uniform by the use of a grading ring, because it	1 decreases the capacitances of upper insulators units to cause equal voltage drop 2 increases the capacitances of lower insulator units of cause equal voltage drop 3 forms capacitances with link-pins to carry the charging current from link pins 4 forms capacitances which help to cancel the charging current from link pins **Key :4** Edit Delete
Generation, in India is mostly at …….kV	1 12 2 11.5 3 11 4 6.6 **Key :3** Edit Delete

Questions	Choices
A loss less line terminated with its surge impedance has	1 flat voltage profile 2 transmission line angle is greater than actual length of line 3 transmission line agnle is less than the actual length 4 both flat voltage profile and transmission line angle is greater than actual length of line **Key :1** Edit Delete
_____ relay is a gas actuated relay used to sense the incipient fault in a transformer.	1 Differential 2 Directional over current 3 Voltz/herz 4 Buchholz relay **Key :4** Edit Delete
A single-phase induction motor with only the main winding excited would exhibit the following response at synchronous speed	1 Forward and backward rotating fields are equal 2 Rotor current is zero 3 Rotor current is non-zero and is at slip frequency 4 Forward rotating field is more than the backward rotating field **Key :4** Edit Delete
Which of the following rotor requires damper winding?	1 salient pole rotor 2 all the answers are wrong 3 cylindrical rotor 4 both type rotor **Key :1** Edit Delete
An electric motor with “constant output power” will have a torque-speed characteristics in the form of a	1 straight line through the origin 2 circle about the origin 3 rectangular hyperbola 4 straight line parallel to the speed axis **Key :3** Edit Delete
Increasing the air-gap of a squirrel-cage induction motor would result in	1 Increase in magnetizing current 2 Increase in no-load speed 3 Increase in full-load power-factor 4 Maximum available torque **Key :1** Edit Delete

Questions	Choices
According to application, instruments are classified as	1 moving coil 2 both switch board and portable 3 portable 4 switch board **Key :3** Edit Delete
Which of the following essential features is possessed by an indicating instrument ?	1 Damping device 2 All of the options specified 3 Controlling device 4 Deflecting device **Key :4** Edit Delete
A _____ device prevents the oscillation of the moving system and enables the latter to reach its final position quickly	1 any of the options specified 2 damping 3 controlling 4 deflecting **Key :3** Edit Delete
The spring material used in a spring control device should have the following property.	1 Most be of low temperature co-efficient 2 All of the options specified 3 Should have low specific resistance 4 Should be non-magnetic **Key :4** Edit Delete
A wattmeter has a current coil of 0.1 ¿ resistance and pressure coil of 6.5 k¿ resistance. When the input to the meter is 12 A at 250 V with unity power factor and the current coil is connected on load side calculate the percentage error due to the resistance only.	1 0.32 2 0.48 3 0.23 4 0.84 **Key :3** Edit Delete
A CRT has an anode voltage of 2 kV and parallel deflecting plates 2 cm loang and 5mm apart. The screen is at a distance of 30 cm from the centre of deflecting plates. Find the input voltage required to deflect the beam though 3 cm. The input voltage is applied to the deflecting plates through amplifiers having an overall gain of 100.	1 0.1 V 2 1 V 3 10 V 4 0.01 V **Key :4** Edit Delete
Most widely used RTD is ..	1 Tungsten 2 Platinum 3 Gold 4 Copper **Key :3** Edit Delete
A piezo electric crystal having dimensions of 5 mm x 5 mm x 1.5 mm and a voltage sensitivity of 0.055 V-m/N is used for force measurement . Calculate the force if the voltage developed is 100 V.	1 50 N 2 40 N 3 39 N 4 30 N **Key :4** Edit Delete

Questions	Choices
Precision is a measure of …….the measuring instrument .	1 Repeatablity 2 Range 3 Correctness 4 Linearity **Key :4** Edit Delete
In dynamo meter type wattmeter a high resistance is connected in series with……..	1 Both Pressure Coil and Current coil 2 Current coil 3 Load 4 Pressure Coil **Key :2** Edit Delete
LVDT is widely used for	1 Measureing low voltage 2 Measuring high Volatge 3 Measuring small displacements 4 Measuring large Displacements **Key :3** Edit Delete
RTD is made up of	1 Metals 2 Metal oxides 3 Semi conductor materials 4 Ceramic materials **Key :4** Edit Delete
In thermometer, mercury is…	1 Auxiliary element 2 Data presentation element 3 Signal conditioner 4 Transducer **Key :2** Edit Delete
An induction wattmeter can be used for	1 any of the options specified 2 A.C. only 3 both D.C. and A.C. 4 D.C. only **Key :2** Edit Delete
The pressure coil of a wattmeter should be connected on the supply side of the current coil when	1 supply voltage is low 2 load impedance is low 3 load impedance is high 4 none of these **Key :1** Edit Delete
Which of the following are integrating instruments ?	1 Ammeters 2 Voltmeters 3 Wattmeters 4 Ampere-hour and watt-hour meters **Key :4** Edit Delete

Questions	Choices
In a low power factor wattmeter the compensating coil is connected	1 in parallel with pressure coil 2 in series with current coil 3 in parallel with current coil 4 in series with pressure coil **Key :3** Edit Delete
The main criterion for selection of the size of a distribution for a radial distribution system is	1 temperature rise 2 corona loss 3 voltage drop 4 capital cost **Key :3** Edit Delete
Which of the following is not part of phototube?	1 Battery 2 Dynode 3 Anode 4 Cathode **Key :4** Edit Delete
An ammeter is a	1 recording instrument 2 integrating instrument 3 secondary instrument 4 absolute instrument **Key :1** Edit Delete
A potentiometer may be used for	1 all of the options specified 2 calibration of ammeter 3 measurement of current 4 measurement of resistance **Key :4** Edit Delete
Most common form of A.C. meters met with in every day domestic and industrial installations are	1 commutator motor meters 2 mercury motor meters 3 induction type single phase energy meters 4 all of the options specified **Key :3** Edit Delete
The pointer of an indicating instrument should be	1 very heavy 2 very light 3 either (very light) or (very heavy) 4 neither (very light) nor (very heavy) **Key :1** Edit Delete
In majority of instruments damping is provided by	1 fluid friction 2 all of the options specified 3 eddy currents 4 spring **Key :3** Edit Delete

Questions	Choices
Hysteresis in an instrument means	1 change in same reading when input is first increased and then decreased 2 repeatability of the instrument. 3 the inaccuracy due to change in temperature. 4 reliability of the instrument. **Key :4** Edit Delete
A moving-coil permanent magnet instrument can be used as ____ by using a low resistance shunt.	1 Flux-meter 2 Ballistic galvanometer 3 Voltmeter 4 Ammeter **Key :1** Edit Delete
If the displacement is measured with strain gauge then the number of strain gauge normally required are	1 1 2 2 3 3 4 4 **Key :4** Edit Delete
In a digital storage oscilloscope, the input signals are	1 Applied to amplifier, stored as analog signals, multiplexed, converted to digital form, stored in digital form, converted to analog form, and applied to CRO through an amplifier 2 Multiplexed, converted to digital form and stored and applied to oscilloscope 3 Multiplexed, converted to digital form, stored, converted to analog for and applied to oscilloscope 4 Directly applied to the oscilloscope **Key :4** Edit Delete
In moving coil meters, damping is provided by	1 The coil spring attached to the moving mechanism 2 damping vane in the air tight chamber 3 eddy current disk 4 the aluminium frame of the coil **Key :3** Edit Delete

Questions	Choices
Sparking between the contacts can be reduced by inserting:	1 A capacitor in series with the contacts 2 A reactor in the line 3 A resistor in the line 4 A capacitor in parallel with the contacts **Key :4** Edit Delete
A vertical amplifier for a CRO can be designed for:	1 Only a high gain 2 All the answers are correct 3 A constant gain times bandwidth product 4 Only a broad bandwidth **Key :3** Edit Delete
In a strain measuring device using a strain gauge, the output quantity is	1 voltage 2 either voltage or resistance 3 resistance 4 impedance **Key :1** Edit Delete
Area under the daily load curve gives	1 Average load on that day 2 Connected load 3 Total power generated on that day 4 Total units generated on that day **Key :1** Edit Delete
The bridge method commonly used for finding mutual inductance is	1 Wien bridge 2 De Sauty bridge 3 Heaviside Campbell bridge 4 Schering bridge **Key :1** Edit Delete
Neon gas in sodium vapor lamp_____	1 changes the color of light 2 acts as a shield around the filament 3 assists in developing enough heat to vaporize the sodium 4 prevents vaporization of filament **Key :3** Edit Delete

Questions	Choices
To reduce the generation cost,	1 Both load factor and diversity factor should be high 2 Both load factor and demand factor should be low 3 Both load factor and diversity factor should be around unity 4 Both load factor and demand factor should be high **Key :1** Edit Delete
Diversity factor is always	1 1 2 greater than 1 3 Less than 1 4 0 **Key :2** Edit Delete
If the open loop transfer function is a ratio of a numerator polynomial of degree “m” and a denominator polynomial of degree “n”, then the integer (n-m) represents the number of	1 break way points 2 unstable poles 3 separate root loci 4 asymtotes **Key :4** Edit Delete
An ammeter has a current range of 0-5 A, and its internal resistance is 0.2 Ω. In order to change the range to 0-25 A, we need to add a resistance of	1 0.8 Ω in series with the meter 2 1.0 Ω in series with the meter 3 0.04 Ω in parallel with the meter 4 0.05 Ω in parallel with the meter **Key :4** Edit Delete
The use of _____ instruments is merely confined within laboratories as standardizing instruments	1 Absolute 2 Indicating 3 Recording 4 Integrating **Key :1** Edit Delete
The presence of earth in case of overhead lines	1 increases the inductance 2 increases the capacitance 3 decreases the capacitance 4 decreases the inductance **Key :2** Edit Delete

Questions	Choices
A single phase line has two parallel conductors 2m apart. Find the suitable diameter of the conductor if the loop inductance is 2.423mH.	1 1 cm 2 1.6 cm 3 1.4 cm 4 1.2 cm **Key :4** Edit Delete
For the measurement of low resistances, Kelvin's double bridge has high accuracy because	1 It has two set of ratio arms which eliminates effect of resistance of connecting lead 2 It has two null indicator 3 It has a null indicating galvanometer 4 It has four sets of ratio arms which eliminates the effect of resistance of connecting lead **Key :1** Edit Delete
If the line is loaded with the surge impedance; the receiving end voltage is	1 less than the sending end voltage 2 equal to the sending end voltage 3 greater than the sending end voltage 4 none of these **Key :2** Edit Delete
Which of the following is not a method of voltage equalization in a string insulator	1 increasing the length of cross arm 2 Grading of the units 3 Static shielding 4 Connecting two discs in parallel **Key :4** Edit Delete
The equivalent resistance of the primary of a transformer having k=5 and R1= 0.1 ohm when referred to secondary becomes _____ ohm	1 0.5 2 0.004 3 2.5 4 0.02 **Key :3** Edit Delete
A moving iron instrument can be used for current and voltage measurements:	1 in dc circuits only 2 in magnetic circuits 3 in both ac and dc circuits 4 in ac circuits only **Key :3** Edit Delete

Questions	Choices
Torque in the induction type energymeter due to current coil is produced by	1 interaction of eddycurrent due to current coil and flux due to pressure coil 2 interaction of eddycurrent due to pressure coil and flux due to pressure coil 3 interaction of eddycurrent due to current coil and flux due to current coil 4 interaction of eddycurrent due to pressure coil and flux due to current coil **Key :1** Edit Delete
In an electrodynamometer type of wattmeter	1 the current coil is made fixed 2 the pressure coil is made fixed 3 any of the two coils can be made fixed 4 both the coils should be movable **Key :1** Edit Delete
A 1mA d'Arsonval movement has a resistance of 100Ω. It is to be converted to a 10V voltmeter. The value of multiplier resistance is	1 990Ω 2 9999Ω 3 999Ω 4 9900Ω **Key :4** Edit Delete
In a two wattmeter method, the wattmeters are connected in the line 1 and 2. The laod is star connected load. What is the angle between the line voltage V_1 and line current I_2?	1 120º 2 90º 3 120+Φ 4 90+Φ **Key :3** Edit Delete
If the supply voltage to a dc shunt motor is increased by 15%, which of the following will reduce?	1 Full load current 2 Full load speed 3 Starting torque 4 None of the options specified **Key :1** Edit Delete
Current – versus time graph for an ideal commutation is a	1 Straight line 2 Decreasing the field current 3 Decreasing the terminal voltage 4 Increasing the armature resistance **Key :2** Edit Delete

Questions	Choices
The Wien's bridges is suitable for the measurement of frequency of the range of	1 100 Hz to 100 kHz 2 More than 100 MHz 3 1 kHz to 100 MHz 4 Less than 100 Hz **Key :1** Edit Delete
An AC bridge with Z_1 =200 30° , Z_2 =150 0° , Z_3 =250 -40° , in order to balance the bridge the Z_4 should be	1 187.5 -70 2 187.5 70 3 187.5 -10 4 187.5 10 **Key :1** Edit Delete
Schering bridge can be used to measure which one of the following ?	1 Q of a coil 2 Inductance and its Q-value 3 Very small resistance 4 Capacitance and its power factor **Key :4** Edit Delete
Which of the following conditions is necessary for triggering system for thyristors?	1 It should be synchronised with the main supply 2 None of these 3 It should provide a train of pulses 4 It must use separate power supply **Key :1** Edit Delete
A 220 V d.c shunt motor takes a total current of 80 A and runs at 800 rpm. Resistance of shunt field is 50 ohm and that of armature is 0.1ohm. The iron and friction losses amount to 1600 W. What is the driving power & B.H.P of the motor?	1 18500W & 11.7 2 16050W & 19.37 3 12600W & 15.75 4 14500W & 14.28 **Key :2** Edit Delete
The frequency of the ripple in the output voltage of 3-phase semiconductor depends on:	1 The load circuit parameters 2 Firing angle and load inductance 3 Firing angle and load resistance 4 Firing angle and the supply frequency **Key :4** Edit Delete

Questions	Choices
The turn-off time of thyristor is 30 m sec at 50°C. It's turn-off time at 100° is	1 100 m sec 2 60 m sec 3 same 4 15 m sec **Key :3** Edit Delete
Turn-off time of a thyristor effects its	1 thermal behaviour 2 overload capacity 3 operating voltage 4 operating frequency **Key :2** Edit Delete
Which statement is correct?	1 BJT and MOSFET are voltage controlled devices 2 BJT is voltage controlled and MOSFET is current controlled device 3 BJT and MOSFET are current controlled devices 4 BJT is current controlled and MOSFET is voltage controlled device **Key :4** Edit Delete
The di/dt capability of a thyristor increases	1 when the anode to cathode voltage rating increases. 2 when the gate current decreases 3 when the gate current is zero 4 when the gate current increases **Key :2** Edit Delete
A 3 phase fully controlled converter is a	1 12 pulse converter 2 2 pulse converter 3 3 pulse converter 4 6 pulse converter **Key :2** Edit Delete
A positive voltage is applied to the gate of a reverse biased SCR	1 This increases reverse leakage current into anode 2 Heating of junction is unaffected 3 Failure of junction occurs due to thermal runaway. 4 This inject more electrons into junction J1 **Key :2** Edit Delete
In a half bridge inverter the gate pulses of the two thyristors have a phase displacement of	1 90° 2 120° 3 180° 4 60° **Key :4** Edit Delete

Questions	Choices
At a room temperature of 30°C, minimum voltage and current required to fire a SCR is	1 0.6 V, 40 mA 2 no limit 3 3 V, 100 mA 4 3 V, 40 mA **Key :1** Edit Delete
A transformer is working at its full load and its efficiency is also maximum. Its iron loss is 1000W. Then, its copper loss at half of full load will be	1 250W 2 400W 3 400W 4 300W **Key :1** Edit Delete
The output of y = |x if x = 9'b101010101 is	1 1 2 0 3 2'b10 4 2'b 01 **Key :1** Edit Delete
_____ motor should not be started on no-load condition.	1 Differential compound 2 Series 3 Shunt 4 Cumulative compound **Key :2** Edit Delete
The impact of negative feedback on which of the following are disadvantageous? i) Gain ii) Stability iii) Bandwidth iv) Noise	1 i and iii 2 iii and iv 3 ii and iv 4 i and ii **Key :2** Edit Delete
A transformer transforms	1 frequency 2 voltage 3 current 4 voltage and current **Key :4** Edit Delete
Which of the following is not a basic element of a transformer ?	1 core 2 primary winding 3 secondary winding 4 mutual flux **Key :4** Edit Delete
A step-up transformer increases	1 voltage 2 current 3 power 4 frequency **Key :1** Edit Delete

Questions	Choices
The maximum flux produced in the core of a transformer is	1 Directly proportional to supply frequency 2 Inversely proportional to supply frequency 3 Inversely proportional to primary voltage 4 Inversely proportional to area of core. **Key :2** Edit Delete
Armature reaction in dc motor results	1 decrease in speed 2 increase in speed. 3 short circuit. 4 open circuit. **Key :2** Edit Delete
A lap wound 4 pole dc motor has 460 conductors. Find the number of parallel paths between the conductors?	1 2 2 4 3 6 4 data provided is insufficient **Key :2** Edit Delete
The armature resistance of the dc motor is generally of the range	1 0.1 ohm. 2 0.5 ohm. 3 50 ohm. 4 100 ohm. **Key :2** Edit Delete
The power flow of a dc motor, with respect to a DC generator is	1 modified. 2 reversed. 3 increased. 4 none of these. **Key :2** Edit Delete
The shaft torque of a dc motor is less than the electromagnetic torque because of	1 mechanical losses 2 hysteresis losses. 3 ohmic losses. 4 eddy current losses. **Key :1** Edit Delete
A dc motor having full load speed of 75 rpm and speed regulation of 10% will have no load speed of:	1 825 rpm 2 675 rpm 3 800 rom 4 700 rpm **Key :1** Edit Delete
A 230 volt dc motor has an armature winding resistance of 0.5 ohm. Calculate the emf induced by the motor if the full load armature current is 23 ampere.	1 120 volt. 2 218.5 volt. 3 220.4 volt. 4 None of these. **Key :2** Edit Delete

Questions	Choices
A 4 pole wave wound dc motor having flux per pole of 9.56 × 10-3 Wb contains 460 armature conductors. Calculate the back emf produced when it is running at a speed of 1500 rpm.	1 220 volt. 2 230 volt. 3 240 volt. 4 440 volt. **Key :1** Edit Delete
In case of a 3-phase induction motor having Ns=1500 rpm and running with s=0.04. Then the rotor speed	1 1440 2 1500 3 1460 4 0 **Key :1** Edit Delete
State the conditions, under which no load and block rotor test is performed?	1 Rated voltage & rated current 2 Rated power and rated voltage 3 Rated power and rated current 4 All of these **Key :1** Edit Delete
A 12–pole alternator will pass through how many electrical degree in one complete revolution	1 60° 2 1080° 3 360° 4 2160° **Key :4** Edit Delete
If the slip of an Induction machine is negative mode, the machine will act like	1 Induction motor 2 D.C. motor 3 Synchronous motor 4 Induction generator **Key :4** Edit Delete
The starting winding of a single-phase motor is placed in the	1 rotor 2 armature 3 Stator 4 field **Key :3** Edit Delete
A centrifugal switch is used to disconnect starting winding when motor has	1 Run for about 1 minuted 2 Picked up about 50 to 70% of rated speed 3 Run for about 5 minutes 4 Picked up about 10 to 25% of rated speed **Key :2** Edit Delete

Questions	Choices
Zero Power Factor Characteristics of synchronous generator is obtained by performing	1 generator is loaded to give varying zero pf lagging current while its excitation is adjusted to give rated V 2 generator is loaded to give rated zero pf lagging current while its excitation is adjusted to vary terminal V 3 generator is loaded to give varying zero pf leading current while its excitation is adjusted to give rated V 4 generator is loaded to give rated zero pf leading current while its excitation is adjusted to vary terminal V **Key :2** Edit Delete
A 4-pole three-phase induction motor has a synchronous speed of 25 rev/s. The frequency of the supply to the stator is:	1 50 Hz 2 25 Hz 3 2.5 Hz 4 100 Hz **Key :1** Edit Delete
The starting torque of a simple squirrel-cage motor is:	1 Low 2 Decreases as rotor current rises 3 Increases as rotor current rises 4 High **Key :1** Edit Delete
The function of damper winding in synchronous machine is	1 Providing starting torque 2 Increase the efficiency 3 Improve voltage regulation 4 None of these **Key :1** Edit Delete
Which of the following motors is used in mixies ?	1 Repulsion motor 2 Hysteresis motor 3 Reluctance motor 4 Universal motor **Key :4** Edit Delete
If a particular application needs high speed and high starting torque, then which of the following motor will be preferred ?	1 Universal motor 2 Capacitor start motor 3 Shaded pole type motor 4 Capacitor start and run motor **Key :1** Edit Delete
Which one is not the application of synchronous motor	1 Constant speed 2 Power factor correction 3 Voltage regulation 4 Charging the battery in automobiles **Key :4** Edit Delete

Questions	Choices
What type of rotor construction is adopted for high speed alternators?	1 Salient pole type 2 Both Salient pole and Non-salient pole type 3 Non-salient pole 4 None of these **Key :3** Edit Delete
Zero power factor method of an alternator is used to find its	1 Efficiency 2 Armature resistance 3 Voltage regulation 4 Synchronous impedance **Key :3** Edit Delete
The terminal voltage of an alternator can be changed under running condition by	1 varying the number of poles 2 All the options given are correct 3 varying the number of turns/ phase of the armature winding 4 varying the excitation of alternator **Key :4** Edit Delete
3rd harmonics are eliminated in induction motor by using	1 delta connection. 2 zig - zag connection 3 V connection. 4 star connection. **Key :4** Edit Delete
Which of following is not integral part of synchronous generator system?	1 Prime mover 2 Excitation system. 3 Distribution system. 4 Protection system. **Key :1** Edit Delete
An Induction motor cannot run at synchronous speed because	1 air friction will prevent it. 2 none of the options given are correct 3 rotor torque will not be produced 4 induction motor will become synchronous motor. **Key :3** Edit Delete
Harmonics in the emf generated in an alternator can be reduced by	1 Chamfering the salient pole tips. 2 by all the methods specified in the options 3 skewing the slots 4 using damper winding. **Key :2** Edit Delete
A synchronous generator is feeding a zero power factor (lagging) load at rated current, the armature reaction is	1 cross-magnetizing 2 demagnetizing. 3 magnetizing 4 ineffective. **Key :2** Edit Delete

Questions	Choices
With the increase in the excitation current of synchronous motor the power factor of the motor will	1 decrease 2 depend on other factors. 3 improve 4 remain constant **Key :3** Edit Delete
The frequency of voltage generated by an alternator having 4 poles and rotating at 1800 rpm is	1 7200 Hz 2 450 Hz 3 60 Hz 4 120 Hz **Key :3** Edit Delete
In modern alternators, the rotating part is	1 Armature as well as field system 2 Field system 3 None of these 4 Armature **Key :2** Edit Delete
The slip speed of an induction motor:	1 is zero until the rotor moves and then rises slightly 2 is zero until the rotor moves and then rises to 100 per cent 3 is 100 per cent until the rotor moves and then decreases slightly 4 is 100 per cent until the rotor moves and then falls to a low value **Key :4** Edit Delete
If the capacitor of a single-phase motor is short-circuited	1 the motor will not start 2 the motor will run in the same direction at reduced r.p.m. 3 the motor will run 4 the motor will run in reverse direction **Key :1** Edit Delete
If the field of a synchronous motor is under excited, the power factor will be	1 Unity 2 Lagging 3 More than unity 4 Leading **Key :2** Edit Delete
The open loop transfer function of a unity negative feedback control system is given by $G(s)=\frac{150}{s(s+9)(s+25)}$. The gain margin of the system is:	1 10.8dB 2 22.3dB 3 34.1dB 4 45.6dB **Key :3** Edit Delete

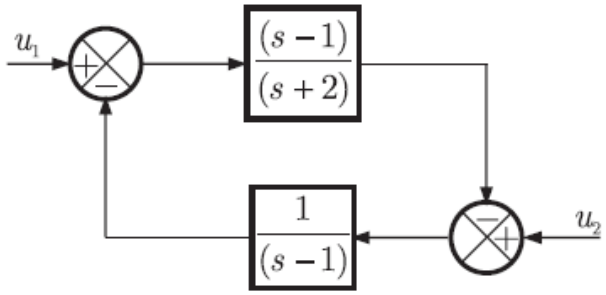
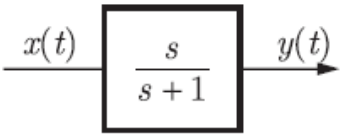
Questions	Choices
The open loop transfer function of a unity feedback control system is $10/ (s+5)^3$. The gain margin of the system will be	1 20 dB 2 40 dB 3 80 dB 4 60 dB **Key :3** Edit Delete
Peak overshoot of step-input response of an underdamped second-order system is explicitly indicative of	1 settling time. 2 rise time. 3 natural frequency. 4 damping ratio. **Key :4** Edit Delete
For a type one system, the steady – state error due to step input is equal to	1 infinite. 2 zero. 3 0.25. 4 0.5. **Key :2** Edit Delete
The starting torque of dc shunt motor is:	1 Zero 2 Low 3 High 4 Very high **Key :2** Edit Delete
Distributed winding and short chording employed in AC machines will result in	1 reduction in emf and increase in harmonics 2 reduction in both emf and harmonics 3 increase in emf and reduction in harmonics 4 increase in both emf and harmonics **Key :2** Edit Delete
A system is said to be …….. if its input-output characteristics do not change with time.	1 time variant 2 time invariant 3 linear time variant 4 linear time invariant **Key :2** Edit Delete
The impulse response h(n) of a linear time invariant system is given by h(n)=u(n+3)+u(n-2)-2u(n-7), where u(n) is the unit step sequence. The above system is	1 causal but unstable 2 stable and causal 3 stable but not causal 4 unstable and not causal **Key :1** Edit Delete
The direction of rotation of a D.C. series motor can be changed by	1 interchanging supply terminals. 2 none of the options. 3 interchanging supply and field terminals 4 interchanging field terminals. **Key :4** Edit Delete

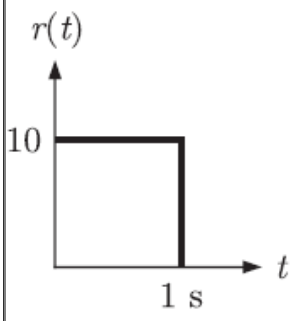
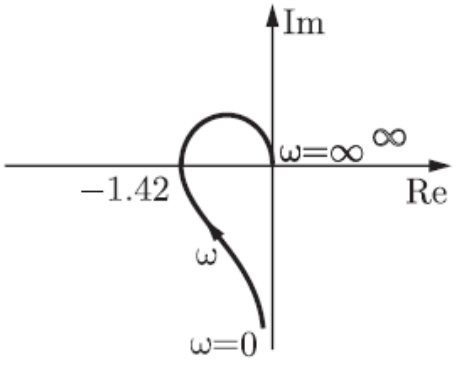
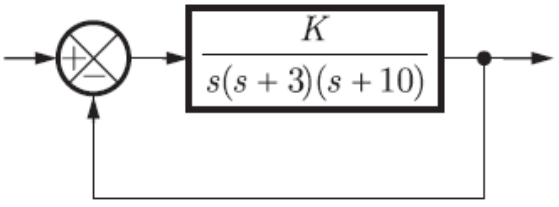
Questions	Choices
If two systems with h1(t) and h2(t) are connected in series, then overall impulse response is	1 h(t)=h1(t)h2(t) 2 h1(t)+h2(t) 3 d/dt[h1(t)h2(t)] 4 h1(t)*h2(t) **Key :3** Edit Delete
The back emf produced in a dc motor depends on	1 P. 2 Z. 3 P and Z. 4 none of these. **Key :3** Edit Delete
When the armature current of 5 Amp is flowing through the dc motor the torque produced is 47 Nm. Keeping the speed constant if the armature current is increased to 7 amp, calculate the new torque. Assume losses to be constant.	1 27.73 Nm . 2 38.5 Nm. 3 65.8 Nm. 4 74 Nm. **Key :3** Edit Delete
Which motor used in Lathe machine?	1 D.C . series motor. 2 D.C. shunt motor. 3 D.C. cumulative compound motor. 4 None of these. **Key :2** Edit Delete
The condition for maximum efficiency for a D.C. generator is	1 variable losses = constant losses 2 hysteresis losses = eddy current losses 3 copper losses = 0 4 eddy current losses = stray losses **Key :1** Edit Delete
With a unity load p.f, the effect of armature reaction on the main field flux of an alternator is	1 Magnetising 2 Nominal 3 Distortional 4 Demagnetising **Key :3** Edit Delete
A unity feedback system with open-loop transfer function G(s) = 4/ [s(s + p)] is critically damped. The value of the parameter p is	1 4 2 3 3 2 4 1 **Key :1** Edit Delete
The value of flux involved m the e.m.f. equation of a transformer is	1 average value 2 r.m.s. value 3 instantaneous value 4 maximum value **Key :4** Edit Delete

Questions	Choices
For a feedback control system of type 2, the steady state error for ramp input is,	1 Infinite 2 Constant 3 Zero 4 Indeterminate **Key :3** Edit Delete
The leakage flux in a transformer depends upon	1 load current, voltage, frequency and power factor 2 load current, voltage and frequency 3 load current and voltage 4 load current **Key :4** Edit Delete
The closed loop transfer function of a control system is given by G(s) = 2(s-1)/[(s+1)(s+2)] For a unit step input the output is	1 -3e^-2 t + 4e^– t -1 2 -3e^-2 t - 4e^– t +1 3 Zero 4 Infinity **Key :1** Edit Delete
For a D.C. generator when the number of poles and the number of armature conductors is fixed, then which winding will give the higher e.m.f. ?	1 Lap winding 2 Wave winding 3 Either Lap winding or Wave winding 4 Depends on other features of design **Key :2** Edit Delete
The value of damping ratio where root locus intersects imaginary axis is	1 0 2 0.707 3 0.5 4 1 **Key :1** Edit Delete
The performance specification for a unity feedback control system having an open loop transfer function G(s) = K/[s(s+1)(s+2) are, (i) velocity error coefficient Kv > 10 sec^-1 (ii) Stable closed loop operation. The value of K, satisfying the above specifications is	1 K>6 sec^-1 2 6 3 K>10 sec^-1 4 K > 20 sec^-1 **Key :4** Edit Delete
The speed of a D.C. motor can be varied by varying	1 any of the options specified 2 resistance in series with armature 3 applied voltage 4 field current **Key :1** Edit Delete
Consider a feedback control system with loop transfer function G(s)$H(s)$ = K(1 + 0.5s) /s(1 + s)(1 + 2s) The type no of the closed loop system is	1 zero 2 one 3 two 4 three **Key :2** Edit Delete

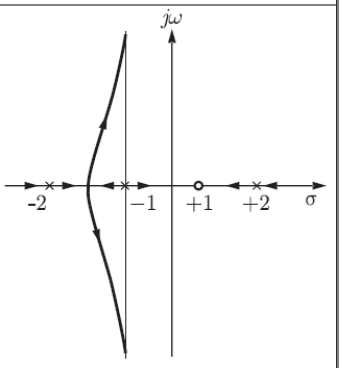
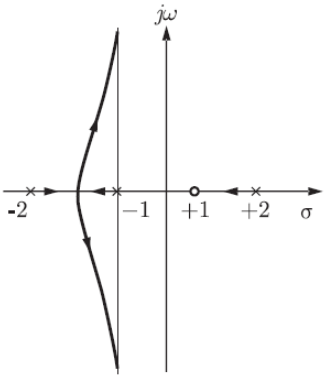
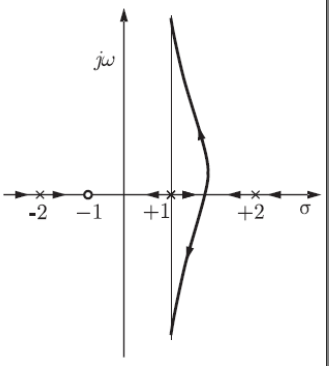
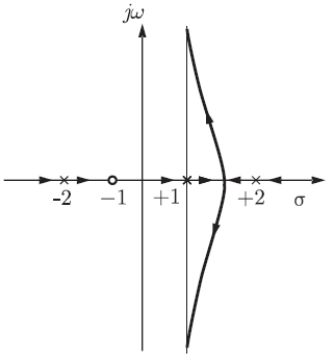
Questions	Choices
The slip speed of an induction motor may be defined as the:	1 Rotor speed - synchronous speed 2 Synchronous speed - rotor speed 3 Number of pairs of poles ÷ frequency 4 Rotor speed + synchronous speed **Key :2** Edit Delete
In a D.C. generator in case the resistance of the field winding is increased, then output voltage will	1 increase 2 remain unaffected 3 decrease 4 fluctuate heavily **Key :3** Edit Delete
The phase margin (in degrees) of a system whose loop transfer function G(s) $H(s)$ = 2√3/ $s(s$ + 1) is	1 60^0 2 30^0 3 -30^0 4 45^0 **Key :2** Edit Delete
A winding having 24 slots, 4 poles with coil span of 1 to 6, will have pitch factor as,	1 0.9659 2 0.7355 3 0.6678 4 0.8655 **Key :1** Edit Delete
The speed of a D.C. series motor is	1 proportional to the square of the armature current 2 proportional to field current 3 inversely proportional to the armature current 4 proportional to the armature current **Key :1** Edit Delete
If the field of a D.C. shunt motor gets opened while motor is running	1 the motor will attain dangerously high speed 2 the motor will continue to run at constant speed 3 the speed of motor will be reduced % 4 the armature current will reduce **Key :1** Edit Delete

Questions	Choices
The impulse response of a LTI system is a unit step function, then the corresponding transfer function is	1 1/s 2 1/s^2 3 1 4 s **Key :1** Edit Delete
A differentiator is usually not a part of a control system because it	1 reduces damping 2 reduces the gain margin 3 increases input noise 4 increases error **Key :3** Edit Delete
The value of starting capacitor of a fractional horse power motor will be	1 100 uF 2 400 uF 3 00 uF 4 300 uF **Key :4** Edit Delete
Electrical time-constant of an armature-controlled dc servomotor is	1 equal to mechanical time-constant 2 smaller than mechanical time-constant 3 larger than mechanical time-constant 4 not related to mechanical time-constant **Key :2** Edit Delete
Given a unity feedback control system with $G(s)=\frac{K}{s(s+4)}$ the value of K for a damping ratio of 0.5 is	1 1 2 16 3 32 4 64 **Key :2** Edit Delete
A capacitor-start single phase induction motor is switched on to supply with its capacitor replaced by an inductor of equivalent reactance value. It will	1 start and run slowly 2 not start at all 3 start and then stop 4 start and run at rated speed **Key :2** Edit Delete

Questions	Choices
A system is described by the following state and output equations $\frac{dx_1(t)}{dt} = -3x_1(t) + x_2(t) + 2u(t)$ $\frac{dx_2(t)}{dt} = -2x_2(t) + u(t)$ $y(t) = x_1(t)$ where u(t) is the input and y(t) is the output. The system transfer function is	1 $\frac{s+2}{s^2+5s-6}$ 2 $\frac{s+3}{s^2+5s+6}$ 3 $\frac{2s+5}{s^2+5s+6}$ 4 $\frac{2s-5}{s^2+5s-6}$ **Key :3** Edit Delete
The transfer functions of two compensators are given below : $C_1 = \frac{10(s+1)}{(s+10)}, \quad C_2 = \frac{s+10}{10(s+1)}$ Which one of the following statements is correct ?	1 C1 is lead compensator and C2 is a lag compensator 2 C1 is a lag compensator and C2 is a lead compensator 3 Both C1 and C2 are lead compensator 4 Both C1 and C2 are lag compensator **Key :1** Edit Delete
The system shown in the figure is 	1 Stable 2 Unstable 3 Conditionally stable 4 Stable for input u1, but unstable for input u2 **Key :4** Edit Delete
In the system shown in figure, the input x(t) = sin t . In the steady-state, the response y(t) will be 	1 $\frac{1}{\sqrt{2}}\sin(t-45^\circ)$ 2 $\frac{1}{\sqrt{2}}\sin(t+45^\circ)$ 3 $\sin(t-45^\circ)$ 4 $\sin(t+45^\circ)$ **Key :1** Edit Delete

Questions	Choices
The open loop transfer function of a unity feedback control system is given as $G(s) = \frac{as+1}{s^2}$. The value of 'a' to give a phase margin of 45 deg is equal to	1 0.141 2 0.441 3 0.841 4 1.141 **Key :3** Edit Delete
The steady state error of a unity feedback linear system for a unit step input is 0.1. The steady state error of the same system, for a pulse input r(t) having a magnitude of 10 and a duration of one second, as shown in the figure is 	1 0 2 0.1 3 1 4 10 **Key :1** Edit Delete
The polar plot of an open loop stable system is shown below. The closed loop system is 	1 always stable 2 marginally stable 3 unstable with one pole on the RH s -plane 4 unstable with two pole on the RH s -plane **Key :4** Edit Delete
Figure shows a feedback system where K > 0  The range of K for which the system is stable will be given by	1 0 < K < 30 2 0 < K < 39 3 0 < K < 390 4 K > 390 **Key :3** Edit Delete
The voltage regulation of an alternator having 0.75 leading p.f load, no-load induced emf of 2400V and rated terminal voltage of 3000V is …… percent.	1 a. 150 2 20 3 -20 4 a. -26.7 **Key :3** Edit Delete

Questions	Choices
A system with zero initial conditions has the closed loop transfer function. $T(s) = \frac{s^2+4}{(s+1)(s+4)}$. The system output is zero at the frequency	1 0.5 rad/sec 2 1 rad/sec 3 2 rad/sec 4 4 rad/sec **Key :3** Edit Delete
_____ losses are determined by conducting Swinburnes test conducted on DC machines.	1 Stray loss 2 Constant losses 3 core losses 4 Field copper loss **Key :2** Edit Delete
In a single phase induction motor driving a fan load, the reason for having a high resistance rotor is to achieve	1 quick acceleration 2 reduced size 3 high efficiency 4 low starting torque **Key :2** Edit Delete

Questions	Choices
A closed-loop system has the characteristic function $(s^2-4)(s+1)+K(s-1)=0$. Its root locus plot against K is	1  2  3  4  **Key :2** Edit Delete
A unity feedback system, having an open loop gain $G(s)H(s)=\frac{K(1-s)}{(1+s)}$ becomes stable when	1 |K| > 1 2 K > 1 3 |K| < 1 4 K < − 1 **Key :3** Edit Delete

Questions	Choices
A ramp input applied to an unity feedback system results in 5% steady state error. The type number and zero frequency gain of the system are respectively	1 1 and 20 2 0 and 20 3 0 and 1/20 4 1 and 1/20 **Key :1** Edit Delete
A good control system should be sensitive to _____	1 Internal disturbances 2 Environmental parameters 3 Parametric variations 4 Input signals (except noise) **Key :4** Edit Delete
The intrinsic impedance of a lossy dielectric medium is given by	1 $j\omega\mu/\sigma$ 2 $j\omega\in/\mu$ 3 $\sqrt{j\omega\mu/(\sigma+j\omega\epsilon)}$ 4 $\sqrt{\mu/\in}$ **Key :3** Edit Delete
The inductance of a long solenoid of length 1000 mm wound uniformly with 3000 turns on a cylindrical paper tube of 60 mm diameter is	1 3.2 μH 2 32 mH 3 3.2 mH 4 3.2 H **Key :2** Edit Delete
A field excitation of 20A in a certain alternator results in an armature current of 400A in short circuit and a terminal voltage of 2000V on open circuit. The magnitude of the internal voltage drop within the machine at a load current of 200A is	1 1V 2 1000V 3 10V 4 100V **Key :2** Edit Delete
If the applied voltage of a transformer is increaded by 50% while it frequency is reduced to 50%, the core flux density will	1 Remain the same 2 Become 3/4 3 Becomes three times 4 Become 1/3 **Key :3** Edit Delete
A four pole, 50 Hz induction motor runs at a speed of 1440 rpm. The frequency of rotor current is	1 2.5 Hz 2 2 Hz 3 1 Hz 4 3 Hz **Key :2** Edit Delete

Questions	Choices
The ratio of magnetic field inside a solenoid at an axial point well inside and at an axial end point is	1 3/2 2 1/2 3 2 4 1 **Key :3** Edit Delete
The rotor developed by a single-phase motor at starting is	1 less than the rated torque 2 more than then rated torque 3 zero 4 rated torque **Key :3** Edit Delete
A DSB-SC signal is generated using the carrier $\cos(\omega_c t+\Theta)$ and modulating signal x(t). The envelope of the DSB-SC signal is	1 x(t) 2 | x(t) | 3 only positive portion of x(t) 4 x(t) cos Θ **Key :2** Edit Delete
Fourier series is used in continuous _____signal.	1 both periodic & aperiodic 2 aperiodic 3 periodic 4 none of these answer is correct **Key :3** Edit Delete
The open loop transfer function of a unity feedback system is given by $G(s)=\frac{2(s+\alpha)}{s(s+2)(s+10)}$ Angles of asymptotes are	1 $60^\circ,120^\circ,300^\circ$ 2 $60^\circ,180^\circ,300^\circ$ 3 $90^\circ,270^\circ,360^\circ$ 4 $90^\circ,180^\circ,270^\circ$ **Key :3** Edit Delete
The divergence of $\vec{F}=xy(\overrightarrow{u_x}+\overrightarrow{u_y})$ at (1,3) is equal to	1 1 2 4 3 3 4 2 **Key :2** Edit Delete
The conductors of a 10 km long, single phase, two wire line are separated by a distance of 1.5 m. The diameter of each conductor is 1 cm. If the conductors are of copper, the inductance of the circuit is	1 50.0 mH 2 22.8 mH 3 45.3 mH 4 19.6 mH **Key :2** Edit Delete

Questions	Choices
A capacitor is made with a polymeric dielectric having an εr of 2.26 and a dielectric breakdown strength of 50 kV/cm. The permittivity of free space is 8.85 pF/m. If the rectangular plates of the capacitor have a width of 20 cm and a length of 40 cm, then the maximum electric charge in the capacitor is	1 2 μC 2 4 μC 3 8 μC 4 10 μC **Key :1** Edit Delete
A coil of 300 turns is wound on a non-magnetic core having a mean circumference of 300 mm and a cross-sectional area of 300 mm^2. The inductance of the coil corresponding to a magnetizing current of 3 A will be	1 37.68 μH 2 1.1304 μH 3 3.768 μH 4 113.04 μH **Key :2** Edit Delete
In a circular loop of wire of radius R with current I, what will be the magnetic induction B on the axis of the loop at a distance z from the center of the loop?	1 $B_z = \mu_0 R^2/(2z^3)$ 2 $B_z = \mu_0 IR/(2z^3)$ 3 $B_z = \mu_0 IR^2/(2z)$ 4 $B_z = \mu_0 IR^2/(2z^3)$ **Key :4** Edit Delete
Which of the following statements holds for the divergence of electric and magnetic flux densities?	1 Both are zero 2 They are zeros for static densities but non zero for time varying densities 3 Zero for magnetic flux density 4 Zero for electric flux density **Key :3** Edit Delete
A dc separately excited motor has constant field current. The armature is fed from a single phase supply through a semi- converter. When α = 0, speed is 650 rpm. If α= 90°, the speed is likely to be?	1 1200 rpm 2 650 rpm 3 325 rpm 4 175 rpm **Key :3** Edit Delete
A single-phase full-bridge voltage-source inverter feeds a purely inductive load. The inverter is operated in square-wave mode with a frequency of 50 Hz. If the average load current is zero, what is the time duration of conduction of each feedback diode in a cycle?	1 5 msec 2 10 msec 3 20 msec 4 2.5 msec **Key :1** Edit Delete

Questions	Choices
A single phase voltage source inverter has pure L as the load. For a constant source voltage,the current through an inductor is	1 Square 2 Sine 3 Triangular 4 Pulsed **Key :3** Edit Delete
A single phase half wave controlled rectifier has 400 sin 314t volts as input voltage and supplies a resistive load. For the firing angle of 60° for the SCR, the average output voltage is	1 400/π 2 300/π 3 240/π 4 360/π **Key :2** Edit Delete
Calculate the number of SCRs required in a series string of voltage rating 7.5kV. The individual rating of the SCR is 500V, 75A and the voltage derating factor is 14%.	1 26 2 10 3 18 4 6 **Key :3** Edit Delete
In 3 phase half converter the output voltage pulsates at a frequency equal to	1 f 2 2f 3 3f 4 6f **Key :3** Edit Delete
A chopper circuit is operating TRC principle at a frequency of 2 kHz on a 220 V dc supply. If the load voltage is 170 V, then the conduction period of thyristor in each cycle is	1 3.86 ms 2 7.72ms 3 0.772ms 4 0.386ms **Key :4** Edit Delete
An inverter converts	1 dc voltage to variable dc voltage 2 ac voltage to dc voltage 3 dc voltage to ac voltage of constant frequency 4 dc voltage to ac voltage of variable frequency **Key :4** Edit Delete

Questions	Choices
A three phase full bridge VSI delivers power to a resistive load from a 450 V dc source. For a star connected resistive load of 10 Ω/ph. Find the rms value of the load current under 180° conduction mode	1 18.708 A 2 13.23 A 3 18.371 A 4 21.213 A **Key :4** Edit Delete
A dc separately excited motor has constant field current. The armature is fed from a single phase supply through a full converter. When α = 0, speed is 500 rpm. If α= 45°, the speed is likely to be	1 354 rpm 2 250 rpm 3 175 rpm 4 125 rpm **Key :1** Edit Delete
Speed of induction motor is controlled by its stator voltage, which power converter is used for varying the stator voltage	1 Stator voltage control 2 Inverter 3 Chopper 4 Rectifier **Key :1** Edit Delete
A pure inductor is connected to 1–ϕ sinusoidal source through a diode. Conduction angle for diode is	1 90° 2 180° 3 270° 4 360° **Key :4** Edit Delete
The average on state current for an SCR is 20 A for a resistive load. If an inductance of 5mH is included in the load, then average on state current would be	1 more than 20 A 2 less than 20 A 3 15 A 4 20 A **Key :1** Edit Delete
What is the average on state current for 60° conduction angle where in the average on state current for an SCR is 20 A for conduction angle of 120°	1 20 A 2 25 A 3 40 A 4 < 20 A **Key :4** Edit Delete

Questions	Choices
A 3 – ϕ half wave diode rectifier feeds a load of R = 100 Ω. For an input of 400 V, 50 Hz, the power delivered to the load is	1 753.73 W 2 974.23 W 3 376.98 W 4 487.26 W **Key :1** Edit Delete
What is the maximum output voltage of three phase full bridge rectifier supplied with a line voltage of 420 V?	1 401.1 V 2 567.2 V 3 498 V 4 532 V **Key :2** Edit Delete
The thyristor has holding current of 150mA.when it was turned ON, the load resistance was at low value. Now if R is progressively increased, at what value of R (in Ω) will the thyristor turn OFF? The applied voltage is 300V.	1 2001 2 2005 3 2000 4 1200 **Key :3** Edit Delete
A SCR is rated at 75A peak, 20A average. The greatest possible delay in the trigger angle if the dc is at rated value is	1 1 47.5° 2 30° to 45° 3 74.5° 4 137° **Key :2** Edit Delete
Effect of source inductance is	1 Less harmonics 2 increase in output voltage 3 good p.f 4 reduction in average output voltage **Key :4** Edit Delete
The reverse recovery time of the diode is defined as the time between the instant diode current becomes zero and the instant reverse recovery current decays to	1 Zero 2 10% of the reverse peak current (I_{RM}) 3 25% of (I_{RM}) 4 15% of (I_{RM}) **Key :3** Edit Delete

	Questions	Choices
	An SCR is triggered at 40° in the positive half cycle only. The average anode current is 50 A. If the firing angle is changed to 80°, the average anode current is likely to be	1 50 A 2 25 A 3 less than 50 A but more than 25 A 4 less than 25 A **Key :3** Edit Delete
1.	A single phase fully controlled thyristor bridge ac-dc converter is operating at a firing angle of 25 degree, and an overlap angle 10 degree with constant dc output current of 20A. The fundamental power factor (displacement factor) at input ac mains is	1 0.78 2 0.827 3 0.866 4 0.9 **Key :1** Edit Delete
	A half-controlled single-phase bridge rectifier is supplying an R-L load. It is operated at a firing angle a and the load current is continuous. The fraction of cycle that the freewheeling diode conducts is	1 1/2 2 $(1-\alpha)/\pi$ 3 $(\alpha)/2\pi$ 4 $(\alpha)/\pi$ **Key :4** Edit Delete
1.	A 3-phase voltage source inverter is operated in 180 degree conduction mode. Which one of the following statements is true ?	1 Both pole-voltage and line-voltage will have 3rd harmonic components 2 Pole-voltage will have 3rd harmonic component but line-voltage will be free from 3rd harmonic 3 Line-voltage will have 3rd harmonic component but pole-voltage will be free from 3rd harmonic 4 Both pole-voltage and line-voltage will be free from 3rd harmonic components **Key :4** Edit Delete
1.	An SCR is considered to be a semi-controlled device because	1 It can be turned OFF but not ON with a gate pulse 2 It conducts only during one half-cycle of an alternating current wave 3 It can be turned ON but not OFF with a gate pulse 4 It can be turned ON only during one half-cycle of an alternating voltage wave **Key :3** Edit Delete

	Questions	Choices
1.	The controlling parameter in MOSFET is	1 Vds 2 Ig 3 Vgs 4 Is **Key :3** Edit Delete
1.	Circuit turn-off time of an SCR is defined as the time	1 Taken by the SCR to turn off 2 Required for SCR current to become zero 3 For which the SCR is reverse biased by the commutation circuit 4 For which the SCR is reverse biased to reduce its current below the holding current **Key :3** Edit Delete
1.	A single phase fully controlled bridge converter supplies a load drawing constant and ripple free load current, if the triggering angle is 30 degree , the input power factor will be	1 0.65 2 0.78 3 0.85 4 0.866 **Key :2** Edit Delete
1.	A three-phase, fully controlled thyristor bridge converter is used as line commutated inverter to feed 50 kW power 420 V dc to a three-phase, 415 V(line), 50 Hz ac mains. Consider dc link current to be constant. The rms current of the thyristor is	1 119.05 A 2 79.37 A 3 68.73 A 4 39.68 A **Key :3** Edit Delete
1.	A three-phase diode bridge rectifier is fed from a 400 V RMS, 50 Hz, three-phase AC source. If the load is purely resistive, then peak instantaneous output voltage is equal to	1 400 V 2 400 √2 V 3 400 √2/3 V 4 400/(√3) V **Key :2** Edit Delete
1.	AC power in a load can be controlled by using	1 two SCR's in parallel opposition 2 two SCR's in series 3 three SCR's in series 4 four SCR's in series **Key :1** Edit Delete

Questions	Choices
To turn off a SCR, the reverse bias should be applied for a period ..... the turn-off time	1 equal to 2 longer than 3 less than 4 irrespective of **Key :2** Edit Delete
Compared to Power MOSFET, the Power BJT has	1 Lower switching losses but higher conduction loss 2 Higher switching losses and higher conduction loss 3 Higher switching losses but lower conduction loss 4 Lower switching losses and lower conduction loss **Key :3** Edit Delete
Current chopping mainly occurs in	1 air blast circuit breaker 2 vacuum circuit breaker 3 SF_6 circuit breaker 4 oil circuit breaker **Key :1** Edit Delete
In relay coil which is used	1 Current transformer 2 Potential transformer. 3 Power transformer 4 Instrument transformer **Key :1** Edit Delete
Mho relay is used for the protection of	1 long transmission lines 2 short length lines 3 medium length lines 4 no length criterion **Key :1** Edit Delete
A 3-phase, 33 kV oil circuit breaker is rated 1200 A, 2000 MVA, 3s. The symmetrical breaking current is	1 75 kA 2 35 kA 3 63.75 kA 4 45.32 kA **Key :2** Edit Delete

Questions	Choices
In an opamp inverting amplifier, the input and feedback resis¬tances are 2k¿ and 100k¿ respectively. Assuming an open loop gain of 10,000, the gain will be	1 10,000 2 500 3 100 4 50. **Key :4** Edit Delete
When two conductors each of radius r are at a distance D, the capacitance between the two is proportional to	1 $\log_e$ (D/r) 2 $\log_e$ (r/D) 3 1/$\log_e$ (D/r) 4 1/$\log_e$ (r/D). **Key :3** Edit Delete
A circuit breaker is	1 power factor correcting device 2 a device to neutralize the effect of transients 3 a waveform correcting device 4 a current interrupting device. **Key :4** Edit Delete
The pressure of SF_6 gas in circuit breakers is of the order of	1 100 mm Hg 2 1 kg/cm^2 3 3 to 5 kg/cm^2 4 30 to 50 kg/cm^2 **Key :3** Edit Delete
The main criterion for selection of the size of a distribution for a radial distribution system is	1 Temperature rise 2 Corona loss 3 Voltage drop 4 Capital cost **Key :3** Edit Delete
The resistance and inductance found to be equal in a short transmission line. What will be the power factor of the load to obtain zero regulation?	1 Zero power factor 2 Unity power factor 3 0.7 lagging power factor 4 0.7 leading power factor **Key :4** Edit Delete
The ratio of capacitance from line to line capacitance from line to neutral is nearly	1 1/4 2 1/2 3 1 4 2 **Key :1** Edit Delete

Questions	Choices
If the height of transmission towers is increased, which of the following parameters is likely to change ?	1 Resistance 2 Inductance 3 Capacitance 4 All answers are correct. **Key :3** Edit Delete
Voltages under Extra High Voltage are	1 1 kV and above 2 11 kV and above 3 132 kV and above 4 330 kV and above. **Key :4** Edit Delete
In a balance 3 φ , 4 wire AC system, the phase sequence is RYB. If the voltage of R phase is. 230 < 0° V, then for Y phase	1 230 < 0 V 2 230 < 120° V 3 230 < 90°V 4 230 < 60° V **Key :2** Edit Delete
Which device automatically interrupts the supply in the event of surges	1 Earthing switch 2 Series reactor 3 Circuit breaker. 4 Isolator **Key :3** Edit Delete
A negative sequence relay is commonly used to protect	1 an alternator 2 a transformer 3 a transmission line 4 a bus bar **Key :1** Edit Delete
A 500kVA, 400V, three phase, 60Hz transformer is replaced by similar transformer of frequency 50Hz. Its rating will be	1 500 kVA 2 None of the mentioned answers are correct 3 680 kVA 4 416 kVA **Key :4** Edit Delete

Questions	Choices
A three-phase, 33 kV oil circuit breaker is rated 1200 A, 2000 MVA, 3 s. The Symmetrical breaking current is	1 1200 A 2 3600 A 3 35 kA 4 104.8 kA **Key :3** Edit Delete
The level of compounding in a cumulatively compounded d.c. generator is adjusted by	1 Connecting it as short shunt 2 Changing series field current 3 Connecting it as long shunt 4 Changing shunt field current **Key :2** Edit Delete
The p.u. parameter for a 500 MVA machine on its own base are: inertia, $M = 20$ p.u. ; reactance, $X = 2$ p.u. The p.u. values of inertia and reactance on 100 MVA common base, respectively, are	1 4, 0.4 2 100, 10 3 4, 10 4 100, 0.4 **Key :4** Edit Delete
At a 220 kV substation of a power system, it is given that the three-phase fault level is 4000 MVA and single-line to ground fault level is 5000 MVA Neglecting the resistance and the shunt suspectances of the system. The positive sequence driving point reactance at the bus is	1 2.5 Ω 2 4.033 Ω 3 5.5 Ω 4 12.1 Ω **Key :4** Edit Delete
A turbo alternators uses	1 salient pole field structure 2 rotating a.c. armature winding 3 non-salient pole field structure 4 None of the mentioned answers are correct **Key :3** Edit Delete
A loss less transmission line having Surge Impedance Loading (SIL) of 2280 MW is provided with a uniformly distributed series capacitive compensation of 30%. Then, SIL of the compensated transmission line will be	1 1835 MW 2 2280 MW 3 2725 MW 4 3257 MW **Key :2** Edit Delete

Questions	Choices
In a biased differential relay the bias is defined as a ratio of	1 number of turns of restraining and operating coil 2 operating coil current and restraining coil current 3 fault current and operating coil current 4 fault current and restraining coil current **Key :2** Edit Delete
A balanced delta connected load of $(8 + j6)\Omega$ per phase is connected to a 400 V, 50 Hz, 3-phase supply lines. If the input power factor is to be improved to 0.9 by connecting a bank of star connected capacitor the required kVAR of the of the bank is	1 42.7 2 10.2 3 28.8 4 38.4 **Key :2** Edit Delete
Choose two appropriate auxiliary components of a HVDC transmission system from the following P. D.C line inductor Q. A.C line inductor R. Reactive power sources S. Distance relays on D.C line T. Series capacitance on A.C. line	1 P and Q 2 P and R 3 Q and S 4 S and T **Key :2** Edit Delete
If T=1 at the positive clock edge and the active low reset is 0, the output Q of the T flip-flop is	1 NO CHANGE 2 TOGGLE 3 1 4 0 **Key :4** Edit Delete
In the thermal power plants, the pressure in the working fluid cycle is developed by	1 condenser 2 super heater 3 feed water pump 4 turbine **Key :3** Edit Delete
If a=1 and b=0, the expression ~(((~a)|b) ^ (a&(~b))) equals	1 (~a) ^ (~b) 2 1 3 a^b 4 0 **Key :4** Edit Delete
A capacitor in an RC circuit with R =2 ohm and C = 4 F is being charged. The time required for the capacitor voltage to reach 63.2 percent of its steadystate value is:	1 16s 2 2 s 3 4 s 4 8 s **Key :4** Edit Delete

Questions	Choices
During measurements, the currents flowing towards the — ve and +ve input terminals of an opamp were found to be 3μA and 6μA respectively. The input offset current is	1 9μA 2 6μA 3 3μA 4 zero. **Key :3** Edit Delete
If the current through a 10-mH inductor increases from zero to 2 A, how much energy is stored in the inductor?	1 40 mJ 2 20 mJ 3 10 mJ 4 5mJ **Key :2** Edit Delete
Which of these transformers can be used as an isolation device?	1 Linear transformer 2 Ideal transformer 3 Autotransformer 4 All the transformers specified in the options **Key :2** Edit Delete
A quantity that contains all the power information in a given load is the	1 power factor 2 complex power 3 apparent power 4 reactive power **Key :2** Edit Delete
The coefficient of coupling for two coils having L1 = 2 H, L2 = 8 H and M = 3H is:	1 0.1875 2 0.75 3 1.333 4 5.333 **Key :2** Edit Delete
If one of the resistors in a parallel circuit is removed, what happens to the total resistance?	1 Decreases 2 Increases 3 Remains constant 4 Exactly doubles **Key :2** Edit Delete
The following voltage drops are measured across each of the three resistors in series: 5.2 V, 8.5 V, 12.3 V. What is the value of source voltage to which these resistors are connected?	1 8.2 V 2 12.3 3 5.2 4 26 **Key :4** Edit Delete
In a series RC circuit, 12 V(rms) is measured across the resistor and 15 V(rms) is measured across the capacitor. The rms source voltage is	1 1.9V 2 27V 3 19.2V 4 3V **Key :3** Edit Delete

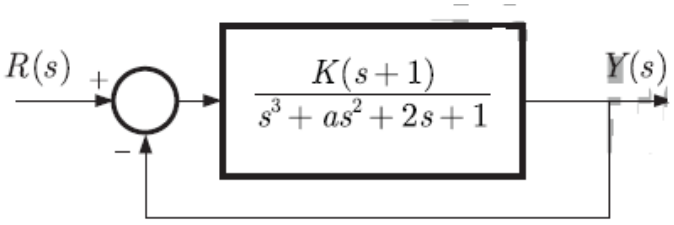
Questions	Choices
Norton’s equivalent circuit consists of	1 Voltage source in parallel with resistance 2 Voltage source in series with resistance 3 Current source in series with resistance 4 Current source in parallel **Key :4** Edit Delete
A current of 6 A is same as	1 6 Joule / second. 2 6 Coulomb / second. 3 6 Watt / second. 4 none of the options specified **Key :2** Edit Delete
Ampere - second is the unit of	1 conductance. 2 power. 3 energy 4 charge. **Key :4** Edit Delete
The equation of alternating current is i = 42.4sin628t. Then the average value of current is	1 42.42 A. 2 27 A. 3 38 A. 4 22 A. **Key :2** Edit Delete
If 1 A current is flowing through a series circuit having 100 resistors of each having resistance of 1 O. What will be the current in the circuit where, these 100 resistors are connected in parallel?	1 10 A. 2 100 A. 3 1000 A. 4 10000 A. **Key :4** Edit Delete
A 10 ohm resistor, a 1 H inductor and 1 μF capacitor are connected in parallel. The combination is driven by a unit step current. Under the steady state condition, the source current flows through	1 Capacitor only 2 Inductor 3 Resistor 4 All the three elements **Key :2** Edit Delete
When a magnetic flux cuts across 200 turns at the rate of 2 Wb/s , the induced voltage is	1 400 V 2 100 V 3 0 V 4 600 V **Key :1** Edit Delete
What capacitance must be placed in series with a 15μF capacitor to give a total capacitance of 5μF	1 20μF 2 10 μF 3 5 μF 4 7.5 μF **Key :4** Edit Delete

Questions	Choices
The slip of an induction motor normally does not depend on	1 synchronous speed 2 core-loss component 3 shaft torque 4 rotor speed **Key :2** Edit Delete
A voltage source of internal impedance Zs is used to feed signal ZR. The maximum power that can be delivered to the load is	1 50% 2 80% 3 75% 4 100% **Key :1** Edit Delete
Which of the following circuit elements will oppose the change in the circuit current?	1 All of them 2 Inductance 3 Resistance 4 Capacitance **Key :2** Edit Delete
Resistances can be measured with the help of	1 ohmmeters and resistance bridges 2 ammeters 3 voltmeters 4 wattmeters **Key :1** Edit Delete
In a series resonant band-pass filter, a lower value of Q results in_____	1 A higher impedance 2 A smaller bandwidth 3 A larger band-width 4 A higher resonant frequency **Key :3** Edit Delete
The contents of the accumulator after this operation MOV A,#2BH ORL A,00H will be:	1 1B H 2 3B H 3 2B H 4 4B H **Key :3** Edit Delete
The first stage of an opamp is always	1 a class B amplifier 2 a class B push-pull amplifier 3 a differential amplifier 4 a Darlington amplifier. **Key :3** Edit Delete
The gain of ideal open loop operational amplifier _____.	1 0 2 1 3 infinte 4 finite **Key :3** Edit Delete

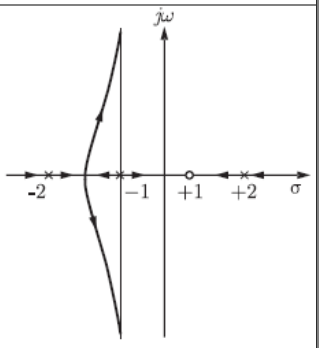
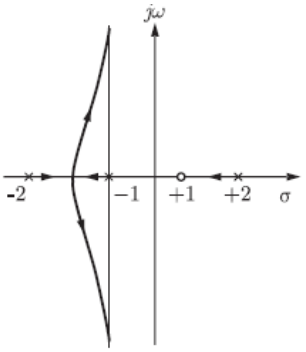
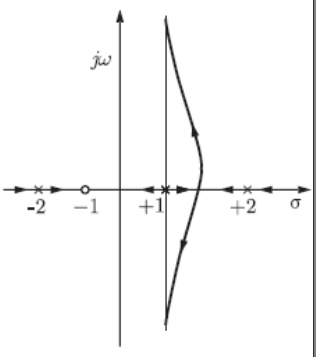
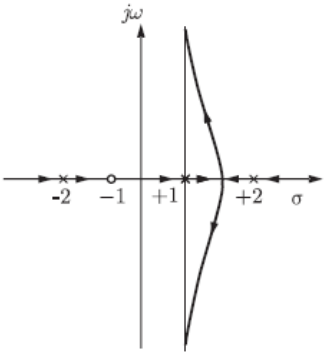
Questions	Choices
CMMR of an ideal Op-amp is_____	1 1 2 finite 3 infinite 4 Zero **Key :3** Edit Delete
The differential gain of the opamp is 20,000. This opamp is used in a differential mode with power supply voltages of +10 V and— 15V. An input of 1 mV at the non-inverting input with inverting input grounded shall yield	1 20 V at the output 2 zero at the output. 3 —20 V at the output 4 +10 V at the output **Key :4** Edit Delete
One way to measure the quality of a D/A converter is its	1 power consumption 2 repeatability 3 resolution 4 settling time. **Key :3** Edit Delete
An opamp has an open loop gain of 100 dB. Its gain starts falling at a frequency of 900 kHz with a rate of 6 dB per octave. The gain at a frequency of 3.6 MHz will be	1 128 dB 2 88 dB 3 28 dB 4 8 dB. **Key :2** Edit Delete
When an Op-Amp is used as a non-inverting amplifier, the input signal is fed into the _____ input and the _____ input is grounded through a resistor.	1 Inverting, non-inverting 2 All of the given options are correct 3 Non-inverting, inverting 4 Feedback, slewrate **Key :3** Edit Delete
The maximum rate of change of output voltage for the step input is called_____	1 Slew Rate 2 Set-up time 3 Offset current 4 Offset voltage **Key :1** Edit Delete
The common mode input voltage of a differential amplifier is _____.	1 Difference of 2-inputs 2 Summation of 2-inputs 3 Zero 4 Average of 2-inputs **Key :4** Edit Delete
The ability of an amplifier to provide gain for the differential signal but reject the common mode signal is indicated by	1 closed loop gain 2 open loop gain 3 CMRR 4 PSRR. **Key :3** Edit Delete

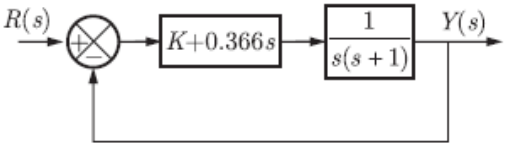
Questions	Choices
The upper input of opamp marked is	1 inverting input 2 non-inverting input 3 phase input 4 out-of-phase input. **Key :2** Edit Delete
Another name for a unity gain amplifier is	1 difference amplifier 2 comparator 3 single ended 4 voltage follower **Key :4** Edit Delete
A opamp can be used with	1 ac signals only 2 neither ac nor dc signals. 3 dc signals only 4 both ac and dc signals **Key :4** Edit Delete
An ideal opamp is characterized by.....gain,.....input imped¬ance and..... output	1 infinite, infinite, zero. 2 zero, zero, infinite 3 infinite, zero, zero 4 zero, infinite, zero **Key :1** Edit Delete
The practical integrator performs like a_____ at very low frequencies.	1 Voltage Follower 2 both as voltage follower and high - pass filter 3 Inverting Amplifier 4 high – pass filter **Key :3** Edit Delete
The number of output steps in a D/A converter is.....where n is the number of bits.	1 2^(n+2) 2 2^n 3 2^(2n) 4 2^n-1 **Key :4** Edit Delete
An opamp is used as a differential amplifier. Its positive and negative inputs are at potentials of 2.1 and 1.9 mV respectively. If the gain is 100,000, the output will be.....	1 0.2 V 2 2 V 3 20 V 4 200 V. **Key :3** Edit Delete
If the present state and next state of a D flip-flop is 1 and 0 respectively, what will be the input of the flip-flop?	1 It is not possible 2 X 3 0 4 1 **Key :3** Edit Delete

Questions	Choices
741 is the	1 first generation 1C 2 second generation 1C 3 third generation 1C 4 fourth generation 1C. **Key :2** Edit Delete
Which of the following statement about opamp is not necessarily true?	1 An opamp uses direct coupling 2 An op amp has high input impedance 3 On amps are always used closed loop 4 Op amps have high voltage gain. **Key :3** Edit Delete
The opamp has a non-inverting input and an inverting input. The……..voltage appears between the two inputs.	1 cumulative 2 negative 3 pulsating 4 error. **Key :4** Edit Delete
With a non-inverting amplifier, negative feedback.....the gain, ...the input impedance, and.....the output impedance	1 increases, decreases, decreases 2 decreases, decreases, increases 3 increases, decreases, increases 4 decreases, increases, decreases **Key :4** Edit Delete
Figure of merit for opamp is	1 gain 2 bandwidth 3 (gain x bandwidth) 4 (gain x bandwidth x slew rate). **Key :3** Edit Delete
Log amplifiers generally find application in	1 dividers 2 dividers and multipliers 3 dividers, multipliers and differentiators 4 dividers, multipliers, differentiators and integrators **Key :4** Edit Delete
Which of the following system is non-linear ?	1 logarithmic amplifiers 2 none of the options specified 3 voltage to current converter 4 current to voltage converter **Key :1** Edit Delete

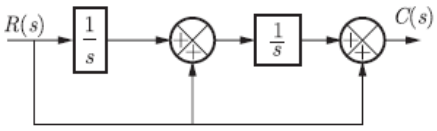
Questions	Choices
The ideal closed loop transfer function/gain of an amplifier is ___	1 (1+ßA) 2 Aß(1+ßA) 3 1/(1+ßA) 4 A/(1+ßA) **Key :4** Edit Delete
In opamp for minimum percentage error	1 open loop gain should be high but feedback factor should be low 2 open loop gain should be low but feedback factor should be high 3 open loop gain as well as feedback factor should be high 4 open loop gain as well as feedback factor should be low. **Key :3** Edit Delete
If the open loop transfer function is a ratio of a numerator polynomial of degree “m” and a denominator polynomial of degree “n”, then the integer (n-m) represents the number of	1 break way points 2 unstable poles 3 separate root loci 4 asymtotes **Key :4** Edit Delete
The feedback system shown below oscillates at 2 rad/s when  	1 K = 2 and a = 0.75 2 K = 3 and a = 0.75 3 K = 4 and a = 0.5 4 K = 2 and a = 0.5 **Key :1** Edit Delete
The transfer function of a linear time invariant system is given as $G(s) = \frac{1}{s^2 + 3s + 2}$ The steady state value of the output for a unit impulse input applied at time instant t = 1 will be	1 0 2 0.5 3 1 4 2 **Key :1** Edit Delete
The transfer function of a system is given as $\frac{100}{s^2 + 20s + 100}$ The system is	1 An over damped system 2 An under damped system 3 A critically damped system 4 An unstable system **Key :3** Edit Delete

Questions	Choices
If all the maxterms in a N-bit POS K-map is 0, the output expression is:	1 1 2 0000…..N times 3 1111….N times 4 0 **Key :1** Edit Delete
A 16-bit shift register is fed a value of 16{1'b1}. The number of clock cycles needed to reach 1111111111 is	1 8 2 9 3 10 4 16 **Key :3** Edit Delete
The output of y = |x if x = 9'b101010101 is	1 0 2 2'b10 3 2'b01 4 1 **Key :4** Edit Delete
If a=1 and b=0, the expression ~(((~a)|b) ^ (a&(~b))) equals	1 (~a) ^ (~b) 2 0 3 a^b 4 1 **Key :2** Edit Delete
If a 2x4 decoder is connected with a 4x1 MUX and the input to the select lines, then the output of the MUX for all inputs of the decoder is	1 1,1,1,1 2 0,0,0,0 3 0,1,0,1 4 1,0,1,0 **Key :1** Edit Delete
If all the maxterms in a 4-bit POS K-map is 0, the output expression is:	1 1 2 0 3 1111 4 0000 **Key :1** Edit Delete
The simplification of the F(A,B) = (0) + (2) is	1 B 2 A' 3 A 4 B' **Key :1** Edit Delete
If an active low XOR gate is fed with inputs A and B, the output is	1 same as OR 2 same as XNOR 3 same as NAND 4 same as XOR **Key :4** Edit Delete
What is the characteristic equation of the complemented output (Q') of JK flip-flop?	1 J'Q' + KQ 2 JQ' + K'Q 3 JQ' + KQ' 4 JQ + K'Q' **Key :1** Edit Delete

Questions	Choices
What is the race condition in the JK Flip-flop?	1 when CLK = 1 and J = K = 1 2 when CLK = 0 and J = K = 1 3 when CLK = 0 and J = K = 0 4 when CLK = 1 and J = K = 0 **Key :1** Edit Delete
If present state and next state of a JK Flip-flop is 0 and 1 respectively, what will be the input of the flip-flop?	1 0X 2 X1 3 X0 4 1X **Key :4** Edit Delete
A closed-loop system has the characteristic function $(s^2-4)(s+1)+K(s-1)=0$. Its root locus plot against K is	1  2  3  4  **Key :2** Edit Delete

Questions	Choices
How many AND gates are there in 16 X 4 ROM?	1 8 2 64 3 16 4 4 **Key :3** Edit Delete
How many variable function we can implement by using a ROM of the size 64 X 5?	1 5 2 6 3 7 4 8 **Key :2** Edit Delete
The transfer function of the system described by $\frac{d^2y}{dt^2}+\frac{dy}{dt}=\frac{du}{dt}+2u$ with u as input and y as output is	1 $\frac{(s+2)}{(s^2+s)}$ 2 $\frac{(s+1)}{(s^2+s)}$ 3 $\frac{2}{(s^2+s)}$ 4 $\frac{2s}{(s^2+s)}$ **Key :1** Edit Delete
For high measurement capacitance measurement ----------bridge is used	1 Schering bridge 2 Weins bridge 3 Se santy bridge 4 None of the mentioned answers are correct **Key :1** Edit Delete
Which of following is recursive system?	1 y(n - 1) 2 y(n + 1) 3 y(n) 4 y(n) + y(n + 1) **Key :1** Edit Delete
What is the reset condition to the flip-flop if it has active high preset and active high clear signal?	1 0 and 0 2 0 and 1 3 1 and 0 4 1 and 1 **Key :2** Edit Delete
If the compensated system shown in the figure has a phase margin of 60 deg at the crossover frequency of 1 rad/sec, then value of the gain K is 	1 0.366 2 0.732 3 1.366 4 2.738 **Key :3** Edit Delete

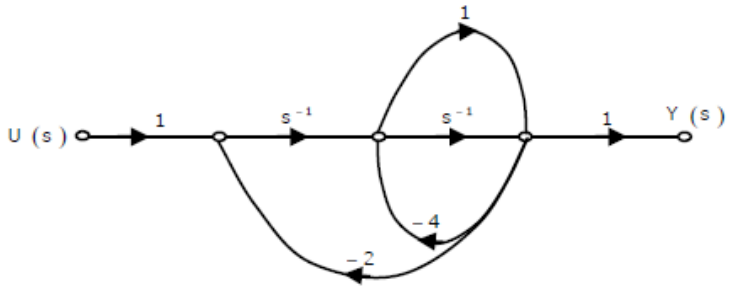
Questions	Choices
A state variable system $\dot{\boldsymbol{X}}(t)=\begin{bmatrix}0 & 1\\ 0 & -3\end{bmatrix}\boldsymbol{X}(t)+\begin{bmatrix}1\\ 0\end{bmatrix}\boldsymbol{u}(t)$ with the initial condition $\boldsymbol{X}(0)=[-1,\ 3]^T$ and the unit step input $u(t)$ has The state transition matrix	1 $\begin{bmatrix}1 & \frac{1}{3}(1-e^{-3t})\\ 0 & e^{-3t}\end{bmatrix}$ 2 $\begin{bmatrix}1 & \frac{1}{3}(e^{-t}-e^{-3t})\\ 0 & e^{-t}\end{bmatrix}$ 3 $\begin{bmatrix}1 & \frac{1}{3}(e^{3-t}-e^{-3t})\\ 0 & e^{-3t}\end{bmatrix}$ 4 $\begin{bmatrix}1 & (1-e^{-t})\\ 0 & e^{-t}\end{bmatrix}$ **Key :1** Edit Delete
For each of the following statements indicate the logic gate AND for which it is true	1 All LOW inputs produce a HIGH output. 2 Output is HIGH if and only if all inputs are HIGH. 3 Output is LOW if and only if all inputs are HIGH. 4 Output is LOW if and only if all inputs are LOW . **Key :2** Edit Delete
The 2's complement of 01001110 is	1 10100010 2 11000010 3 10110110 4 10110010 **Key :4** Edit Delete
The number of bits required to represent the decimal number 25 in natural BCD code is	1 3 2 5 3 8 4 4 **Key :3** Edit Delete
The binary code for the given Gray code 10101100111 is	1 11001100101 2 10001100101 3 11001000101 4 11001001101 **Key :3** Edit Delete
The number of rows in the truth table of 4 variables are	1 Either 4 or 16 2 8 3 4 4 16 **Key :4** Edit Delete

Questions	Choices
For the block diagram shown, the transfer function $\frac{C(s)}{R(s)}$ is equal to 	1 $\frac{s^2+1}{s^2}$ 2 $\frac{s^2+s+1}{s^2}$ 3 $\frac{s^2+s+1}{s}$ 4 $\frac{1}{s^2+s+1}$ **Key :2** Edit Delete
An 8-bit shift register is fed a value of 11011001. The number of clock cycles needed to reach 00011001 is	1 5 2 6 3 8 4 3 **Key :1** Edit Delete
The unit impulse response of a second order under-damped system starting from rest is given by $c(t) = 12.5e^{-6t}\sin 8t, \quad t \geq 0$. The steady-state value of the unit step response of the system is equal to	1 0 2 0.25 3 0.5 4 1 **Key :4** Edit Delete
In a flash analog-to-digital converter, the output of each comparator is connected to an input of a _____.	1 decoder 2 priority encoder 3 multiplexer 4 demultiplexer **Key :2** Edit Delete
A control system is defined by the following mathematical relationship $\frac{d^2x}{dt^2} + 6\frac{dx}{dt} + 5x = 12(1 - e^{-2t})$ The response of the system as $t \to \infty$ is	1 $x = 6$ 2 $x = 2$ 3 $x = 2.4$ 4 $x = -2$ **Key :3** Edit Delete
For a 4-bit DAC, the least significant bit (LSB) is _____.	1 0.625% of full scale 2 12% of full scale 3 1.2% of full scale 4 6.25% of full scale **Key :4** Edit Delete
..... Filter is used to avoid aliasing	1 BRF 2 HPF 3 BPF 4 LPF **Key :4** Edit Delete

Questions	Choices
The dual-slope analog-to-digital converter finds extensive use in _____.	1 all the equipment mentioned in the options 2 frequency counters 3 digital voltmeters 4 function generators **Key :1** Edit Delete
The ADC0804 is an example of a _____.	1 dual-slope analog-to-digital converter 2 digital-ramp analog-to-digital converter 3 successive-approximation analog-to-digital converter 4 single-slope analog-to-digital converter **Key :3** Edit Delete
The Laplace transform of $e^{-2t}\sin 2\omega t$ is _____	1 $\frac{2s}{(s+2)^2+2\omega^2}$ 2 $\frac{2\omega}{(s-2)^2+4\omega^2}$ 3 $\frac{2\omega}{(s+2)^2+4\omega^2}$ 4 $\frac{2s}{(s+2)^2+2\omega^2}$ **Key :3** Edit Delete
For a LTI system which of the following statements are true. (i) Transfer function is ratio of L.T. of output & input. (ii) Transfer function is ratio of L.T. of input & output. (iii) Transfer function is L.T. of impulse response	1 i an ii 2 ii and iii 3 iii only 4 i and iii **Key :4** Edit Delete
If two systems with h1(t) and h2(t) are connected in series, then overall impulse response is	1 h(t)=h1(t)h2(t) 2 h1(t)+h2(t) 3 d/dt[h1(t)h2(t)] 4 h1(t)*h2(t) **Key :4** Edit Delete

Questions	Choices
Given $L f(t) = F(s), L[f(t)e^{-at}]$ is equal to	1 $F(s+a)$ 2 $\frac{F(s)}{(s+a)}$ 3 $e^{as}F(s)$ 4 $e^{-as}F(s)$ **Key :1** Edit Delete
the fourier series coefficients of the even part of x(t) are	1 EV(cn) 2 odd(cn) 3 jIm(cn) 4 Re(cn) **Key :4** Edit Delete
The damping ratio of a system having the characteristic equation $s^2 + 2s + 8 = 0$ is	1 0.353 2 0.330 3 0.300 4 0.250 **Key :1** Edit Delete
If x(t) is odd then its fourier series coefficients must be	1 real and even 2 imaginary and even 3 real and odd 4 imaginary and odd **Key :4** Edit Delete
If the transfer function of a first-order system is $G(s) = \frac{10}{1+2s}$, then the time constant of the system is	1 10 seconds 2 $\frac{1}{10}$ second 3 2 seconds 4 $\frac{1}{2}$ second **Key :3** Edit Delete
Closed-loop transfer function of a unity-feedback system is given by $Y(s)/R(s) = 1/(\tau s + 1)$. Steady-state error to unit-ramp input is	1 ∞ 2 τ 3 1 4 $1/\tau$ **Key :2** Edit Delete

Questions	Choices
Distributed winding and short chording employed in AC machines will result in	1 increase in both emf and harmonics 2 reduction in both emf and harmonics 3 increase in emf and reduction in harmonics 4 reduction in emf and increase in harmonics **Key :2** Edit Delete
The ROC of a anti-causal signal x(t) is,	1 left of abscissa of convergence 2 Entire s-plane 3 region between two abscissa of convergence 4 right of abscissa of convergence **Key :1** Edit Delete
An electric motor with “constant output power” will have a torque-speed characteristics in the form of a	1 rectangular hyperbola 2 straight line through the origin 3 straight line parallel to the speed axis 4 circle about the origin **Key :1** Edit Delete
In an alternator, the armature winding is kept stationary while the filed winding is kept rotating for the following reasons: (i). Armature handles very large current and high voltage (ii) Armature fabrication, involving deep slots to accommodate large coils, is easy if armature is kept stationary (iii) It is easier to cool the stator than the rotor Which of the above reasons are correct?	1 (i) and (ii) only 2 All three options are correct 3 (i) and (iii) only 4 (ii) and (iii) only **Key :2** Edit Delete
The impulse response h(n) of a linear time invariant system is given by h(n)=u(n+3)+u(n-2)-2u(n-7), where u(n) is the unit step sequence. The above system is	1 causal but unstable 2 stable and causal 3 stable but not causal 4 unstable and not causal **Key :3** Edit Delete
The relationship among synchronous speed (Ns), rotor speed (N) and slip is _____	1 N=(1+s) Ns 2 N=(1-s) Ns 3 N=(s-1) Ns 4 N=(1+s) Ns **Key :2** Edit Delete

Questions	Choices
A good measure of similarity between two signal x1(t) and x2(t) is	1 convolution 2 correlation 3 power density spectrum 4 fourier transform **Key :2** Edit Delete
The signal flow graph for a system is given below. The transfer function $\frac{Y(s)}{U(s)}$ for this system is given as  	1 $\frac{s+1}{5s^2+6s+2}$ 2 $\frac{s+1}{s^2+6s+2}$ 3 $\frac{s+1}{s^2+4s+2}$ 4 $\frac{1}{5s^2+6s+2}$ **Key :1** Edit Delete
Which one of the following statements is true for all real symmetric matrices?	1 All the eigenvalues are real. 2 All the eigenvalues are positive 3 All the eigenvalues are distinct 4 Sum of all the eigenvalues is zero **Key :1** Edit Delete
Consider an LTI system with impulse response $h(t) = e^{-5t}u(t)$. If the output of the system is $y(t) = e^{-2t}\,u(t) - e^{-5t}u(t)$ then the input, x(t), is given by	1 $e^{-3t}\,u(t)$ 2 $2e^{-3t}\,u(t)$ 3 $e^{-5t}\,u(t)$ 4 $2e^{-5t}\,u(t)$ **Key :2** Edit Delete
The filter whose transfer function is of the form $G(s) = \frac{s^2 - bs + c}{s^2 + bs + c}$ is	1 a high-pass filter 2 a low-pass filter 3 an all-pass filter 4 a band-reject filter **Key :3** Edit Delete
The Fourier transform (FT) of a function x (t) is X (f). The FT of dx(t)/dt will be:	1 jf X(f). 2 j2 pf X(f). 3 dX(f)/ df 4 X(f)/(jf). **Key :2** Edit Delete

Questions	Choices
A system is said to be _____ if the output does not depends on future inputs and outputs.	1 Non-Causal 2 Anti-Causal 3 Causal 4 Static **Key :3** Edit Delete
Which one of the following system is not a discrete time system	1 Population model 2 RL circuit 3 Rain fall of a city for one month 4 savings account **Key :2** Edit Delete
Z transform of x(n-k) is:	1 z^-k X(z) 2 kX(z^-1) 3 n^-1 X(z) 4 X(k^-1 z) **Key :1** Edit Delete
In s->z mapping if the s pole is -s+j¿,will fall in	1 Outside unit circle 2 inside unit circle 3 on unit circle 4 towards to infinity **Key :2** Edit Delete
In s-> z mapping if the s pole is j¿,will fall in	1 Outside unit circle 2 inside unit circle 3 on unit circle 4 towards to infinity **Key :3** Edit Delete
The property of Fourier Transform which states that the compression in time domain is equivalent to expansion in the frequency domain is	1 Scaling. 2 Duality. 3 Time Scaling. 4 Frequency Shifting. **Key :1** Edit Delete
)The Fourier Transform of a Gaussian pulse is _____ function	1 sinc 2 gate 3 Gaussian 4 Impulse **Key :3** Edit Delete
The _____ property of Fourier Transform depicts the energy of the signal	1 Conjugate Symmetry 2 Time Shifting 3 Time Scaling 4 Parseval's Theorem. **Key :4** Edit Delete

Questions	Choices
Convolution is used to find:	1 The impulse response of an LTI System 2 Frequency response of a System 3 The time response of a LTI system 4 The phase response of a LTI system **Key :1** Edit Delete
z-transform helps to convert a) differential equation into algebraic equation b) difference equation into algebraic equation	1 a is false, b is true 2 a is true, b is false 3 a is false, b is false 4 a is true, b is true **Key :1** Edit Delete
Random signal can be modeled by	1 Differential equation 2 Difference equation 3 Statistical parameters 4 Integral **Key :3** Edit Delete
z-transform converts convolution of time-signals to	1 subtraction. 2 multiplication. 3 division. 4 addition. **Key :2** Edit Delete
The function which has its Fourier transform, Laplace transform, and Z transform unity is	1 impulse 2 Sinc 3 pulse 4 Gausian **Key :1** Edit Delete
The Lapalce Transform of t u(t) is given by	1 1 2 $1/s^2$ 3 1/s 4 1/s-3 **Key :2** Edit Delete

Questions	Choices
The time reversal property of Z-Transform for x[-n] is	1 1/X(Z) 2 X(1/Z) 3 X(-Z) 4 -X(Z) **Key :2** Edit Delete
The Fourier Transform of Signum function is	1 jω 2 jπω 3 1/jπω 4 ω **Key :3** Edit Delete
The Z-Transform of u[n] is _____.	1 z/(z-1) 2 1/z 3 1/(z-a) 4 1 **Key :1** Edit Delete
An RLC series. circuit remains predominantly inductive	1 at the lower half power frequency 2 below resonance frequency 3 above resonance frequency 4 at resonance frequency **Key :3** Edit Delete
The differentiation of a unit step signal is _____ signal.	1 ramp 2 impulse 3 exponential 4 parabolic **Key :2** Edit Delete
In _____ method of speed control the speed above the rated speed can be obtained.	1 Field rheostat 2 None of the mentioned answers are correct 3 Voltage control 4 Armature rheostat **Key :1** Edit Delete

Questions	Choices
An ideal capacitor is charged to a voltage V0 and connected at t = 0 across an ideal inductor L. (The circuit now consists of a capacitor and inductor alone). If we let ω0 = 1/√LC , the voltage across the capacitor at time t > 0 is given by	1 $V_0 \sin(\omega_0 t)$ 2 V_0 3 $V_0 e^{-\omega o t}\cos(\omega_0 t)$ 4 $V_0 \cos(\omega_0 t)$ **Key :4** Edit Delete
The RMS value of the voltage u(t)= 3 + 4 cos (3t) is	1 7 V 2 √17 V 3 5 V 4 3 + 2 √2 V **Key :2** Edit Delete
The rms value of the current in a wire which carries a d.c. current of 10 A and a sinusoidal alternating current of peak value 20 A is	1 15A 2 17.32A 3 10A 4 14.14A **Key :2** Edit Delete
superposition theorem can be applied only to circuits having	1 linear bilateral elements 2 resistive elements 3 passive elements 4 non-linear elements **Key :3** Edit Delete
A 240 V single-phase ac source is connected to a load with an impedance of 10Ð60 °Ω. A capacitor is connected in parallel with the load. If the capacitor supplies 1250 VAR, the real power supplied by the source is	1 240W 2 2880W 3 1200W 4 3600W **Key :2** Edit Delete
In series as well as parallel circuits the equivalent (total) value of certain parameter is given by X = X1 + X2 + X3 + X4 + ... The parameter X could be	1 Resistance 2 Voltage 3 Current 4 power **Key :4** Edit Delete

Questions	Choices
In a circuit low reactive power compared to true power indicates:	1 High power factor 2 Low efficiency 3 Low power factor 4 High efficiency **Key :2** Edit Delete
The reciprocal of resistance is:	1 columbs 2 Conductance 3 Voltage 4 Current **Key :2** Edit Delete
How much current will flow in a 100 Hz series RLC circuit if VS = 20 V, RT = 66 ohms, and XT = 47 ohms?	1 247mA 2 303mA 3 1.05A 4 107mA **Key :1** Edit Delete
An ideal voltage source should have	1 small value of emf 2 zero source resistance 3 large value of emf 4 infinite source resistance **Key :4** Edit Delete
When the resistances are connected in parallel circuit then	1 **Branch voltages are additive** 2 **Branch currents are additive** 3 **Resistance's are additive** 4 **frequencies are additive** **Key :2** Edit Delete
A network contains linear resistors and ideal voltage sources. If values of all the resistors are doubled, then the voltage across each resistor is	1 Halved 2 Doubled 3 Not changed 4 Increased by four times **Key :3** Edit Delete

Questions	Choices
A load that has a resistance of 10Ω is to be connected to a supply that has a constant voltage of 120 volts. If it is desired that the current to the load be varied from 3 to 5 Amperes, what are the resistance and the current rating of the series rheostat that permit this variation?	1 30 Ω, 15A 2 10 Ω, 10A 3 30 Ω, 5A 4 20 Ω, 10A **Key :3** Edit Delete
An RLC resonant circuit has a resonance frequency of 1.5 MHz and a bandwidth of 10 kHz. If C = 150 pF, then the effective resistance of the circuit will be	1 29.5Ω 2 9.5Ω 3 14.75Ω 4 4.7Ω **Key :4** Edit Delete
A network can be completely specified by:	1 Real parts of zeroes 2 Poles and zeroes 3 Real part of poles 4 Poles, zeroes and a scale factor **Key :4** Edit Delete
In a series RLC circuit, which of these quality factors has the steepest magnitude response curve near resonance?	1 8 2 20 3 4 4 12 **Key :2** Edit Delete
Identify the passive element among the following.	1 Voltage source 2 Transistor 3 Current source 4 Inductor **Key :4** Edit Delete
The coefficient of coupling for two coils having L1 = 2 H, L2 = 8 H and M = 3H is:	1 0.75 2 0.1875 3 5.333 4 1.333 **Key :1** Edit Delete

Questions	Choices
A choke coil having resistance R ohms and of L henry is shunted by a capacitor of C farads. The dynamic impedance of the resonant circuit would be	1 L/ RC 2 1 / RLC 3 C/ RL 4 R/LC **Key :1** Edit Delete
Norton's equivalent circuit consists of	1 Current source in series with resistance 2 Voltage source in series with resistance 3 Current source in parallel with resistance 4 Voltage source in parallel with resistance **Key :3** Edit Delete
In series resonant circuit, increasing inductance to its twice value and reducing capacitance to its half value	1 will change the resonance frequency 2 will increase the selectivity of the circuit 3 will change the impedance at resonance frequency 4 will change the maximum value of current at resonance **Key :2** Edit Delete
Two bulbs marked 200 watt-250 volts and 100 watt-250 volts are joined in series to 250 volts supply. Power consumed in circuit is	1 300 watt 2 67 watt 3 100 watt 4 33 watt **Key :2** Edit Delete
In a circuit containing R, L and C, power loss can take place in	1 R only 2 RLC evenly 3 C only 4 L only **Key :1** Edit Delete
Ampere second could be the unit of	1 charge 2 energy 3 conductance 4 power **Key :1** Edit Delete

Questions	Choices
Which of the following bulbs will have the least resistance?	1 220 V, 60 W 2 115 V, 100 W 3 220 V, 100 W 4 115 V, 60 W **Key :2** Edit Delete
The square waveform of current has following relation between R.M.S. value and average value	1 R.M.S. value is equal to average value 2 Only average value 3 R.M.S. value of current is less than average value 4 R.M.S. value of current is greater than average value **Key :1** Edit Delete
Form Factor is the ratio of	1 average value/peak value 2 r.m.s. value/average value 3 r.m.s. value/peak value 4 average value/r.m.s. value **Key :2** Edit Delete
Two resistances R_1 and R_2 give combined resistance of 4.5 ohms when in series and 1 ohm when in parallel. The resistances are	1 1.5 ohms and 3 ohms 2 3 ohms and 9 ohms 3 1.5 ohms and 0.5 ohms 4 3 ohms and 6 ohms **Key :1** Edit Delete
Unipolar modulation is generally used in	1 AC - AC converters 2 AC - DC converters 3 DC - AC converters 4 DC - DC converters **Key :4** Edit Delete
1. Core loss is also called as ----------?	1 Eddy current loss 2 Copper loss 3 Magnetic loss 4 Hysteresis loss **Key :3** Edit Delete

Questions	Choices
During the commutation period in 3 phase converter, overlap time is	1 Dependent on the load current 2 Dependent on the voltage 3 Dependent on both the load current and load voltage behind the short circuit current 4 Independent on both the load current and load voltage **Key :3** Edit Delete
In a three phase full converter, the number of notches per cycle is	1 1 2 3 3 6 4 9 **Key :3** Edit Delete
In any RLC series circuit, the f > f0 then the circuit behaves as_____ nature	1 inductive 2 susceptive 3 capacitive 4 resistive **Key :1** Edit Delete
Under harmonic free load voltages, the 3 phase VSI	1 Does not contains second harmonic 2 Does not contains third harmonic 3 Does not contains fifth harmonic 4 Does not contains seventh harmonic **Key :1** Edit Delete
Two resistors 5 Ω and 3 Ω are connected in series with a voltage source of 20 V. What is the voltage drop across 3 Ω resistor?	1 20V 2 8V 3 7.5V 4 12.5V **Key :3** Edit Delete

Questions	Choices
At unbalanced condition, angle between each phases of 3 phase supply are	1 0^o 2 240^o 3 180^o 4 120^o **Key :4** Edit Delete
Harmonics in 3 phase inverters can be reduced by using	1 Passive filter 2 Active filter 3 Both passive and active filters 4 None of these **Key :3** Edit Delete
The parallel combination of a 470 Ω resistor and a 1.2 kΩ resistor is in series with the parallel combination of three 3 kΩ resistors. A 200 V source is connected across the circuit. The resistor with the most current has a value of	1 3 k Ω 2 a. 1.2 k Ω 3 470 Ω or 1.2 k Ω 4 470 Ω **Key :4** Edit Delete
A 680Ω load resistor, RL, is connected across a constant current source of 1.2 A. The internal source resistance, RS, is 12 kΩ. The load current, RL, is	1 114 mA 2 1.14 A 3 0 A 4 1.2 A **Key :2** Edit Delete
A 12 mA current source has an internal resistance, RS, of 1.2 kΩ. The equivalent voltage source is	1 144 V 2 7.2 V 3 72 mV 4 14.4 V **Key :4** Edit Delete
Which of the following is not the same as watt?	1 joule/sec 2 amperes/volt 3 $(Amperes)^2$ x ohm. 4 amperes x volts **Key :2** Edit Delete

Questions	Choices
A circuit contains two un-equal resistances in parallel	1 large current flows in larger resistor 2 smaller resistance has smaller conductance 3 current is same in both 4 potential difference across each is same **Key :4** Edit Delete
In the SPWM, the modulating signal is	1 Square 2 Sinusoidal 3 Triangular 4 Saw - tooth **Key :2** Edit Delete
The voltage drop across a 1.5-kW toaster that draws 12 A of current is:	1 125 V 2 120 V 3 10.42 V 4 18 kV **Key :1** Edit Delete
A network has 12 branches and 8 independent loops. How many nodes are there in the network?	1 4 2 19 3 5 4 17 **Key :3** Edit Delete
A load is connected to a network. At the terminals to which the load is connected, RTh = 10Ω and VTh = 40V. The maximum possible power supplied to the load is:	1 80W 2 40W 3 1W 4 160W **Key :2** Edit Delete
A series RC circuit has |VR| = 12 V and |VC| = 5 V. The magnitude of the supply voltage is:	1 13 V 2 7 V 3 – 7 V 4 17 V **Key :1** Edit Delete

Questions	Choices
A function that repeats itself after fixed intervals is said to be:	1 reactive 2 periodic 3 a phasor 4 harmonic **Key :2** Edit Delete
A parallel RLC circuit has L = 2 H and C = 0.25 F. The value of R that will produce unity damping factor is:	1 4Ω 2 2Ω 3 1Ω 4 0.5 Ω **Key :2** Edit Delete
What kind of filter can be used to select a signal of one particular radio station?	1 band pass 2 band stop 3 high pass 4 low pass **Key :1** Edit Delete
How much inductance is needed to resonate at 5 kHz with a capacitance of 12 nF?	1 84.43 mH 2 3.333 H 3 11.844 H 4 2,652 H **Key :1** Edit Delete
If a two-port is reciprocal, which of the following is not true?	1 y21 = y12 2 AD = BC + 1 3 Z21 = Z12 4 h21 = h12 **Key :4** Edit Delete
The concept of superposition theorem is based on	1 Reciprocity 2 Duality 3 Non-linearity 4 Linearity **Key :4** Edit Delete

Questions	Choices
The parallel combination of a 6.8 k resistor and a 10 k resistor is in series with the parallel combination of a 2.2 k resistor and a 1 k resistor. A 100 V source is connected across the circuit. The resistor(s) with the greatest voltage drop is (are)	1 2.2 k and 1 k 2 2.2 k 3 6.8 k 4 6.8 k and 10 k **Key :4** Edit Delete
A Circuit of zero lagging power factor behaves as	1 An inductive circuit 2 R-C circuit 3 R-L circuit 4 A capacitive circuit **Key :1** Edit Delete
Which of the following is not a necessary condition to be satisfied for synchronising an incoming alternator to an already operating alternator?	1 same phase sequence 2 same frequency 3 same voltage magnitude 4 same prime mover speed **Key :4** Edit Delete
What are the signs of load angle in an alternator during generator and motor operations, respectively?	1 Negative, negative 2 Negative, positive 3 Positive, positive 4 Positive, negative **Key :4** Edit Delete
If the capacitor of a capacitor-start single phase motor fails to open when the motor picks up speed,	1 The motor will stop 2 The capacitor will be damaged 3 The auxiliary winding will be damaged 4 The winding will be damaged **Key :2** Edit Delete
The transformer will work on ……	1 All the answers are wrong 2 a.c. only 3 d.c. only 4 a.c. as well as d.c. **Key :2** Edit Delete
The concept of an electrically short, medium and long line is primarily based on the	1 nominal voltage of the line 2 physical length of the line 3 wavelength of the line 4 power transmitted over the line **Key :2** Edit Delete

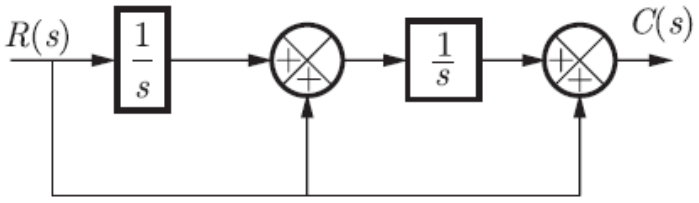
Questions	Choices
Boosters are basically	1 inductors 2 capacitors 3 transformers 4 Synchronous motors. **Key :2** Edit Delete
The fact that a conductor carries more current on the surface as compared to core, is known as	1 skin effect 2 corona 3 permeability 4 unsymmetrical fault. **Key :1** Edit Delete
In a single-phase capacitor-start induction motor, the direction of rotation	1 cannot be changed 2 can be changed only in large capacity motors 3 is dependent on the size of the capacitor 4 can be changed by reversing the main winding terminals **Key :4** Edit Delete
A transformer may have negative voltage regulation if the load power factor(p.f) is	1 Only zero p.f lag 2 Unity p.f 3 Leading for some values of p.f 4 Lagging but not zero p.f **Key :3** Edit Delete
If the current in the armature od dc series motor is reduced to 5%, the torque of the motor will become	1 125% of the previous value 2 25% of the previous value 3 150% of the previous value 4 50% of the previous value **Key :2** Edit Delete
A 4 pole lap wound armature has 480 conductors and the flux per pole is 25mWb. The emf generated, when running at 600 rpm will be	1 30V 2 120V 3 60V 4 240V **Key :2** Edit Delete

Questions	Choices
For harnessing low variable waterheads, the suitable hydraulic turbine with high percentage of reaction and runner adjustable vanes is	1 Kaplan 2 Francis 3 Pelton 4 Impeller **Key :1** Edit Delete
A 200 kVA transformer has an iron loss of 1 kW and full-load Cu loss of 2KW, its load kVA corresponding to maximum efficiency is _____ kVA.	1 100 2 200 3 141.1 4 50 **Key :3** Edit Delete
The final value theorem is used to find the	1 steady state value of the system output 2 initial value of the system output 3 transient behavior of the system output 4 None of the mentioned answers are correct **Key :1** Edit Delete
A cylinder rotor generator delivers 0.5 pu power in the steady-state to an infinite bus through a transmission line of reactance 0.5 pu. The generator no-load voltage is 1.5 pu and the infinite bus voltage is 1 pu. The inertia constant of the generator is 5MW-s/MVA and the generator reactance is 1 pu. The critical clearing angle, in degrees, for a three-phase dead short circuit fault at the generator terminal is	1 53.5 2 60.2 3 70.8 4 79.6 **Key :4** Edit Delete
The motor used for intermittent and high torque loads is	1 differential compound motor 2 cumulative compound motor 3 dc series motor 4 dc shunt motor **Key :2** Edit Delete
A cylinder rotor generator delivers 0.5 pu power in the steady-state to an infinite bus through a transmission line of reactance 0.5 pu. The generator no-load voltage is 1.5 pu and the infinite bus voltage is 1 pu. The inertia constant of the generator is 5MW-s/MVA and the generator reactance is 1 pu. The critical clearing angle, in degrees, for a three-phase dead short circuit fault at the generator terminal is	1 70.8 2 53.5 3 79.6 4 60.2 **Key :3** Edit Delete

Questions	Choices
The starting current of an induction motor is five times the full load current while the full-load slip is 4%. The ratio of starting torque to full load torque is:	1 0.6 2 0.8 3 1.0 4 1.2 **Key :3** Edit Delete
The damper winding in the synchronous motor is often used to	1 Prevent hunting & provide starting torque 2 Provide the starting torque only 3 Maintain synchronism 4 Prevent hunting only **Key :1** Edit Delete
For enhancing the power transmission in along EHV transmission line, the most preferred method is to connect a	1 Series inductive compensator in the line 2 Shunt inductive compensator at the receiving end 3 Series capacitive compensator in the line 4 Shunt capacitive compensator at the sending end **Key :3** Edit Delete
The purpose of starting winding in a single phase induction motor is to _____	1 produce rotating flux in conjunction with main winding 2 limit temperature rise of the machine 3 reduce losses 4 avoid the oscillations **Key :1** Edit Delete
The Buchholz relay is used to protect the	1 alternators against all internal faults 2 oil immersed transformers against all internal faults 3 synchronous motors against all internal faults 4 transmission line against all types of faults. **Key :2** Edit Delete

Questions	Choices
30^0 phase shift between primary and secondary phase voltage will be experienced on _____ connection of three phase transformer.	1 Δ-Y 2 Y-Δ 3 Y-Y 4 both Δ-Y & Y-Δ **Key :4** Edit Delete
A motor which can conveniently be operated at lagging as well as leading power factors is the	1 synchronous motor. 2 wound rotor induction motor. 3 dc shunt motor 4 squirrel cage induction motor **Key :1** Edit Delete
The household energy meter is	1 integrating instrument 2 indicating instrument 3 recording instrument 4 None of the mentioned answers are correct **Key :3** Edit Delete
In overhead transmission lines the effect of capacitance can be neglected when the length of line is less than	1 200 km 2 160 km 3 100 km 4 80 km **Key :4** Edit Delete
The material used for fuse wire must have	1 low melting point with any specific resistance. 2 low melting point and high specific resistance 3 low melting point and low specific resistance 4 high melting point and low specific resistance **Key :2** Edit Delete

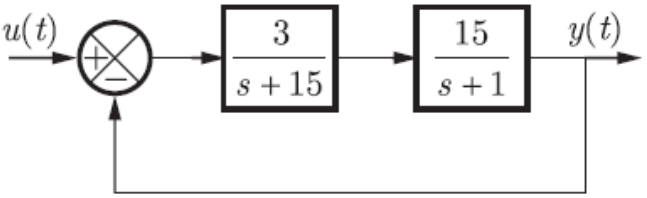
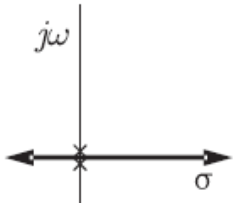
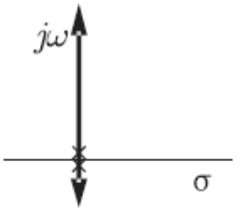
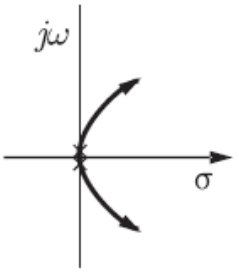
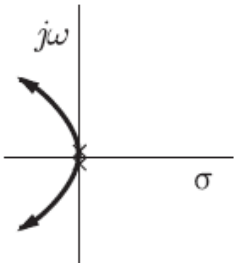
Questions	Choices
The Buchholz relay is used to protect the	1 oil immersed transformers against all internal faults 2 alternators against all internal faults 3 transmission line against all types of faults. 4 synchronous motors against all internal faults **Key :1** Edit Delete
Litz wires are used for intermediate frequencies.to overcome	1 corona effect 2 skin effect 3 radio interference 4 all of the above. **Key :3** Edit Delete
Which of the following distribution systems gives the greater reliability	1 radial system 2 ring system 3 open loop system 4 DC three wire system **Key :2** Edit Delete
If the height of the transmission tower is decreased, the capacitance of the line will	1 increase 2 decreas 3 remain same 4 decrease exponentially **Key :2** Edit Delete
The chances of corona are maximum during	1 summer heat 2 winter 3 dry weather 4 humid weather **Key :4** Edit Delete
A 3 phase 4 wire system is commonly used for	1 Primary distribution 2 Secondary distribution 3 Primary transmission 4 Secondary transmission **Key :2** Edit Delete

Questions	Choices
In a transformer zero voltage regulation is achieved at a load PF which is	1 Zero 2 Leading 3 Unity 4 Lagging **Key :2** Edit Delete
For the block diagram shown, the transfer function $\frac{C(s)}{R(s)}$ is equal to 	1 $\frac{s^2+1}{s^2}$ 2 $\frac{s^2+s+1}{s^2}$ 3 $\frac{s^2+s+1}{s}$ 4 $\frac{1}{s^2+s+1}$ **Key :2** Edit Delete
Which of the following bridge can be used for measuring unknown frequency?	1 Wein 2 Anderson 3 Kelvin 4 Maxwell **Key :1** Edit Delete
After what level of operating voltage, the system is called higher voltage system?	1 11000 volt 2 1000 volt 3 500 volt 4 1500 volt **Key :1** Edit Delete
Wien bridge oscillator is most often used when-ever	1 square output waves are required 2 wide range of high purity sine waves is to be generated 3 high feedback ratio is needed 4 square output waves are required **Key :2** Edit Delete

Questions	Choices
In a moving coil of a meter swamping resistance is added to	1 Reduce the frequency error 2 Reduce the temperature error 3 Reduce the power consumption 4 **.** All of these **Key :2** Edit Delete
Calibration of instrument is an important consideration in measurement system. The errors due to instruments being out of calibration can be rectified by	1 Increasing the frequency of recalibration 2 Decreasing the frequency of recalibration 3 Increasing the temperature coefficient 4 Increasing the susceptibility of measuring instrument **Key :1** Edit Delete
Which of the following is the dynamic characteristic of an instrument?	1 Reproducibility 2 Dead zone 3 Fidelity 4 Sensitivity **Key :4** Edit Delete
Maxwell's induction-capacitance bridge is used for measurement of inductance of:	1 Low Q coils 2 medium Q coils 3 high Q coils 4 low and medium Q coils **Key :2** Edit Delete
The primary and secondary of a transformer are …… coupled	1 electrically and magnetically 2 electrically 3 None of the mentioned answers are correct 4 magnetically **Key :4** Edit Delete
In a three phase series inverter, the firing frequency is	1 three times output frequency 2 six times output frequency 3 twice the output frequency 4 equal to output frequency **Key :2** Edit Delete

Questions	Choices
The impulse response of a system $G(s) = \frac{2}{(s+1)(s+3)}$ is	1 $e^{-t} - e^{-3t}$ 2 $e^{-2t} - e^{-3t}$ 3 $2e^{-2t} - e^{-3t}$ 4 $e^{-t} + e^{-3t}$ **Key :1** Edit Delete
A transformer having 1000 primary turns is connected to a 250-V a.c. supply. For a secondary voltage of 400 V, the number of secondary turns should be	1 1600 2 250 3 400 4 1250 **Key :1** Edit Delete
Armature reaction in an alternator mainly affects	1 Rotor speed 2 Frequency of armature current 3 Terminal voltage per phase 4 Generated voltage per phase **Key :4** Edit Delete
A moving coil permanent magnet instrument can be used as _____ by using a low resistance shunt.	1 flux meter 2 voltmeter 3 ballistic galvanometer 4 ammeter **Key :4** Edit Delete
Which of these transformers can be used as an isolation device?	1 Linear transformer 2 Ideal transformer 3 Autotransformer 4 All the transformers specified in the options **Key :2** Edit Delete
A transformer core is laminated to	1 reduce hysteresis loss 2 reduce eddy current losses 3 reduce all losses specified in the options 4 reduce copper losses **Key :2** Edit Delete
Which of the following motors is used for elevators ?	1 Any of the motors specified in the options 2 Induction motor 3 Synchronous motor 4 Capacitor start single phase motor **Key :2** Edit Delete

Questions	Choices
Which of the following is the best method for determining the stability and transient response ?	1 Root locus 2 Bode plot 3 Nyquist plot 4 Polar plot **Key :1** Edit Delete
The damping ratio of a system having the characteristic equation s^2+2s+8 =0 is	1 0.353 2 0.330 3 0.300 4 0.250 **Key :1** Edit Delete
The system $\dot{\boldsymbol{X}} = A\boldsymbol{X} + B\boldsymbol{u}$ with $A = \begin{bmatrix} -1 & 2 \\ 0 & 2 \end{bmatrix}, B = \begin{bmatrix} 0 \\ 1 \end{bmatrix}$ is	1 Stable and controllable 2 Stable but uncontrollable 3 Unstable but controllable 4 Unstable and uncontrollable **Key :3** Edit Delete
A system is described by the following state and output equations $\frac{dx_1(t)}{dt} = -3x_1(t) + x_2(t) + 2u(t)$ $\frac{dx_2(t)}{dt} = -2x_2(t) + u(t)$ $y(t) = x_1(t)$ The state transition matrix of the system is	1 $\begin{bmatrix} e^{-3t} & 0 \\ e^{-2t} + e^{-3t} & e^{-2t} \end{bmatrix}$ 2 $\begin{bmatrix} e^{-3t} & e^{-2t} - e^{-3t} \\ 0 & e^{-2t} \end{bmatrix}$ 3 $\begin{bmatrix} e^{-3t} & e^{-2t} + e^{-3t} \\ 0 & e^{-2t} \end{bmatrix}$ 4 $\begin{bmatrix} e^{3t} & e^{-2t} - e^{-3t} \\ 0 & e^{-2t} \end{bmatrix}$ **Key :2** Edit Delete
An open loop system represented by the transfer function $G(s) = \frac{(s-1)}{(s+2)(s+3)}$ is	1 Stable and of the minimum phase type 2 Stable and of the non–minimum phase type 3 Unstable and of the minimum phase type 4 Unstable and of non–minimum phase type **Key :2** Edit Delete

Questions	Choices
The transfer function of a compensator is given as $G_c(s) = \frac{s+a}{s+b}$ Gc (s) is a lead compensator if	1 a = 1, b = 2 2 a = 3, b = 2 3 a =- 3, b =- 1 4 a = 3, b = 1 **Key :1** Edit Delete
The block diagram shown in figure gives a unity feedback closed loop control system. The steady state error in the response of the above system to unit step input is  	1 25% 2 0.75% 3 6% 4 33% **Key :1** Edit Delete
A unity feedback system has an open loop transfer function $G(s) = \frac{K}{s^2}$. The root locus plot is	1  2  3  4  **Key :2** Edit Delete

Questions	Choices
Point charges 30 nC, –20 nC and 10 nC are located at (–1, 0, 2), (0, 0,0) and (1, 5, –1) respectively. The total flux leaving a cube of side 6m centered at the origin is	1 -20 nC 2 30 nC 3 10 nC 4 20 nC **Key :3** Edit Delete
A point in cylindrical coordinates is defined by (1.4 m, 25^0, 0.75 m). Location of the point in rectangular coordinates is	1 (1.4 m, 0.592 m, 0.75 m) 2 (1.269 m, 0.592 m, 0.75 m) 3 (1.4 m, 0.92 m, 0.75 m) 4 (1.4 m, 0.592 m, 0.375 m) **Key :2** Edit Delete
In a single pulse modulation of PWM inverters, the pulse width is 120°, for an input voltage of 220 V dc, the RMS value of output voltage is	1 179.63V 2 254.04V 3 127.02V 4 185.04V **Key :1** Edit Delete
SCR will suffer from reverse recovery current when the switching frequency is	1 high 2 low 3 never suffer 4 moderate **Key :1** Edit Delete
A single phase diode rectifier supplies a highly inductive load. The load current can be assumed to be ripple free. The ac supply side current waveform will be	1 Sinusoidal 2 Constant DC 3 Square 4 Triangular **Key :3** Edit Delete
1. Comparing with the full wave rectifier using two diodes, the four diode bridge rectifier has the dominant advantage of	1 Higher current carrying 2 Lower peak inverse voltage requirement 3 Lower ripple factor 4 Higher efficiency **Key :2** Edit Delete
In a SCR circuit, the angle of conduction can be changed by changing	1 anode current 2 forward current rating 3 gate current 4 anode voltage **Key :3** Edit Delete

Questions	Choices
The superposition theorem requires as many circuits to be solved as there are	1 branches 2 sources 3 sources and nodes 4 nodes **Key :2** Edit Delete
The 4's complement of (23) of radix 5 is	1 4 2 3 3 1 4 2 **Key :3** Edit Delete
Slew rate is the	1 maximum rate of output voltage change 2 minimum rate of output voltage change 3 zero rate of output voltage change 4 average rate of output voltage change. **Key :1** Edit Delete
Which of the following type display needs backlight?	1 CRO 2 LCD 3 LED 4 None of the mentioned answers are correct **Key :2** Edit Delete
For a system with the transfer function $H(s) = \frac{3(s-2)}{4s^2-2s+1}$, the matrix A in the state space form $\dot{X} = AX + Bu$ is equal to	1 $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ -1 & 2 & -4 \end{bmatrix}$ 2 $\begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ -1 & 2 & -4 \end{bmatrix}$ 3 $\begin{bmatrix} 0 & 1 & 0 \\ 3 & -2 & 1 \\ 1 & -2 & 4 \end{bmatrix}$ 4 $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 0 & 1 \\ -1 & 2 & -4 \end{bmatrix}$ **Key :2** Edit Delete

Questions	Choices
A 4-bit R/2R ladder digital-to-analog converter uses _____.	1 four resistor values 2 three resistor values 3 one resistor value 4 two resistor values **Key :4** Edit Delete
The resolution of a 6-bit DAC is _____.	1 15.9% 2 64% 3 63% 4 1.59% **Key :4** Edit Delete
The main purpose of performing open-circuit test on a transformer is to measure its _____.	1 Cu loss 2 insulation resistance. 3 total loss 4 core loss **Key :4** Edit Delete
In order to implement a Full Subtractor, _____ ROM will be sufficient.	1 16 X 2 2 2 X 2 3 8 X 2 4 4 X 2 **Key :3** Edit Delete
What will be the set condition of the flip-flop with active low preset and active high clear?	1 0 and 0 2 1 and 0 3 0 and 1 4 1 and 1 **Key :1** Edit Delete
In 9-bit Hamming code for BCD, the parity bits are……..locations	1 1,2,4,8 2 2,3,4 3 1,2,4 4 1,4,8 **Key :1** Edit Delete
How many flip-flops required to design a sequence generator for the sequence “1000”?	1 4 2 3 3 2 4 5 **Key :1** Edit Delete
Logic system in which the lower of the two levels is represented by 1 and higher is represented by 0.	1 None 2 Both positive and negative logic system 3 Positive logic system 4 Negative logic system **Key :4** Edit Delete

Questions	Choices
For the equation, $s^3 - 4s^2 + s + 6 = 0$ the number of roots in the left half of s-plane will be	1 0 2 1 3 2 4 3 **Key :2** Edit Delete
Which of the following represents a stable system? 1. Impulse response of the system decreases exponentially. 2. Area with the impulse response is finite. 3. Eigen values of the system are positive and real. 4. Roots of Characteristic equations of the system are real and negative.	1 1 and 4 2 1 and 3 3 2, 3 and 4 4 1, 2 and 4 **Key :4** Edit Delete
Consider the function $F(s)=\frac{5}{s(s^2+s+2)}$, where $F(s)$ is the Laplace transform of f (t). $\lim_{t\to\infty} f(t)$ is equal to	1 5 2 5/2 3 zero 4 Infinity **Key :2** Edit Delete
A three phase, salient pole synchronous motor is connected to an infinite bus. It is operated at no load a normal excitation. The field excitation of the motor is first reduced to zero and then increased in reverse direction gradually. Then the armature current:	1 Increases continuously 2 Remains constant 3 First increases and then decreases steeply 4 First decreases and then increases steeply **Key :3** Edit Delete
Any signal which is symmetric about the time origin is called ----------	1 Power signal 2 Even 3 Energy signal 4 Odd **Key :2** Edit Delete
Convolution of x(t+5) with impulse function d(t-7) is equal to	1 x(t-12) 2 x(t+12) 3 x(t-2) 4 x(t+2) **Key :3** Edit Delete
If the unit impulse response of an LTI system and the input signal are both rectangular pulses, then the response will be a	1 ramp function 2 parabola 3 rectangular pulse 4 triangular pulse **Key :4** Edit Delete

Questions	Choices
One pair of eigen vectors corresponding to the two eigen values of the matrix $\begin{bmatrix} 0 & -1 \\ 1 & 0 \end{bmatrix}$ is	1 $\begin{bmatrix} 1 \\ -j \end{bmatrix}, \begin{bmatrix} j \\ -1 \end{bmatrix}$ 2 $\begin{bmatrix} 0 \\ 1 \end{bmatrix}, \begin{bmatrix} -1 \\ 0 \end{bmatrix}$ 3 $\begin{bmatrix} 1 \\ j \end{bmatrix}, \begin{bmatrix} 0 \\ 1 \end{bmatrix}$ 4 $\begin{bmatrix} 1 \\ j \end{bmatrix}, \begin{bmatrix} j \\ 1 \end{bmatrix}$ **Key :4** Edit Delete
The discrete time system describes by y(n) = x(n^2) is:	1 non-casual, Linear, time invariant 2 casual, non-linear, time varying 3 casual, Linear, time varying 4 non-casual, non-linear, time variant **Key :3** Edit Delete
Consider an LTI system with transfer function $H(s) = \frac{1}{s(s+4)}$ If the input to the system is cos(3t) and the steady state output is $A\sin(3t+\alpha)$, then the value of A is	1 1/30 2 1/15 3 3/4 4 4/3 **Key :2** Edit Delete
Two sequences x1 (n) and x2 (n) are related by x2 (n) = x1 (- n). In the z-domain, their ROC's are	1 the same. 2 reciprocal of each other. 3 negative of each other. 4 complements of each other. **Key :2** Edit Delete
The process of reconstructing a continuous time signal *x(t)* from its samples is known as	1 **Sampling** 2 **Interpolation** 3 Decimation 4 **band limiting** **Key :2** Edit Delete

Questions	Choices
The frequency of an alternating current is	1 The number of cycles generated in one minute 2 The number of waves passing through a point in one second 3 The number of electrons passing through a point in one second 4 The speed with which alternator runs **Key :1** Edit Delete
The maximum current that a 2W, 80 kΩ resistor can safely conduct is:	1 40KA 2 5mA 3 25 μA 4 160KA **Key :1** Edit Delete
When the total charge in a capacitor is doubled, the energy stored:	1 remains the same 2 is quadrupled 3 is doubled 4 Is halved **Key :2** Edit Delete
Two resistors of 4 W and 6 W are connected series to a supply of 20 V. The load is in parallel with 6 W .Then the Thevenin's resistance is	1 4.2 W 2 2.4 W 3 4W 4 10 W **Key :2** Edit Delete
A source of angular frequency 1 rad/sec has source impedance consisting of 1Ω resistance in series with 1 H inductance. The load that will obtain the maximum power transfer is:	1 1Ω resistance parallel with 1H inductance 2 1Ω resistance in parallel with 1F capacitor 3 1Ω resistance 4 1Ω resistance in series with 1F capacitor **Key :4** Edit Delete

Questions	Choices
In a pure Inductive circuit,	1 Current leads behind the voltage by 90 2 Current lags behind the voltage by 90 3 Current and voltage are in-phase 4 Current is zero. **Key :2** Edit Delete
In a highly capacitive circuit the	1 reactive power is more than the actual power 2 actual power is more than its reactive power 3 reactive power is more than the apparent power 4 apparent power is equal to the actual power **Key :1** Edit Delete
In current commutated DC-DC choppers, the voltage spike appears across the load when	1 Voltage across the commutating inductances collapses 2 The capacitance voltage adds to the supply voltage 3 Both (a) and (b) 4 None of these **Key :3** Edit Delete
The effect of an air gap in a magnetic circuit is to:	1 reduces the flux density 2 reduces the magneto motive force 3 increases the reluctance 4 reduces the flux **Key :3** Edit Delete
“Sum of all deviations/No of measurements” is equal to…	1 deviation 2 None of the mentioned answers are correct 3 Mean deviation 4 Variance **Key :4** Edit Delete

Questions	Choices
A thyristor can be termed as:	1 None of the mentioned answers are correct 2 both AC and DC switch 3 DC switch 4 AC switch **Key :1** Edit Delete
If N2 > N1, then E2 > E1. What type of transformer _____	1 step up transformer 2 None of the mentioned answers are correct 3 power transformer 4 step down transformer **Key :1** Edit Delete
The Nodal method of circuit analysis is based on,	1 KVL and KCL 2 KCL and Ohms law 3 KVL, KCL and Ohms law 4 KVL and Ohms law **Key :2** Edit Delete
An electric current of 5 A is same as	1 5 w / sec 2 5 V / C 3 5 C / sec 4 5 J / C **Key :3** Edit Delete
The power MOSFET device is a	1 Current controlled unipolar device 2 Voltage controlled unipolar device 3 Current controlled bipolar device 4 Voltage controlled bipolar device **Key :2** Edit Delete
If the firing angle becomes negative, then the rectifier begins to work as	1 A rectifier 2 An inverter 3 A chopper 4 A regulator **Key :2** Edit Delete

Questions	Choices
The difference between the half-power frequencies is called the:	1 quality factor 2 cutoff frequency 3 bandwidth 4 resonant frequency **Key :3** Edit Delete
The power factor of an ac circuit is equal to	1 Cosine of the phase angle 2 Sine of the phase angle 3 Tangent of the phase angle 4 Cotangent of the phase angle **Key :1** Edit Delete
When superposition theorem is applied to any circuit, the voltage source in that circuit is always ……	1 Active 2 None of the mentioned answers are correct 3 Shorted 4 Opened **Key :3** Edit Delete
Which of the following materials is not used for transmission and distribution of electrical power ?	1 Copper 2 Aluminium 3 Steel 4 Tungsten **Key :4** Edit Delete
The underground system cannot be operated above	1 440 V 2 11 kV 3 33 kV 4 66 kV **Key :4** Edit Delete
The cause of transient stability is	1 alternator loosing its excitation 2 switching ON and OFF in the line 3 short circuit fault in the lines 4 all of the above **Key :4** Edit Delete

Questions	Choices
The armature reaction of an alternator influences	1 a. Operating speed 2 Windage losses 3 Waveform 4 a. Emf/phase **Key :3** Edit Delete
An alternator delivering a balanced load at unity power factor. The phase angle between line voltage and line current is	1 60^0 2 0^0 3 30^0 4 90^0 **Key :3** Edit Delete
The voltage of the single phase supply to residential consumers is	1 110 V 2 220 V 3 440 V 4 11 kV **Key :2** Edit Delete
Transmission line connects-	1 Generating station to a switching station 2 Stepdown transformer station to service transformer banks 3 Distribution transformer to consumer premises 4 Service points to consumer permises **Key :1** Edit Delete
Which of the following system has zero dynamic error?	1 None of the mentioned answers are correct 2 Second order 3 First order 4 Zero order **Key :4** Edit Delete
A 400V, 50Hz, 3 hp, three phase induction motor is drawing 50A current at 0.8 power factor lagging. The stator and rotor copper losses are 1.5kW and 900W respectively. The friction and windage losses are 1050W and the core losses are 1200W. The airgap power of the motor will be	1 24.11 kW 2 26.21 kW 3 23.06 kW 4 25.01 kW **Key :4** Edit Delete

Questions	Choices
In an undrained triaxial test on saturated clay, the poisson's ratio is	1 $\sigma_3/(\sigma_1+\sigma_3)$ 2 $\sigma_3/(\sigma_1-\sigma_3)$ 3 $(\sigma_1-\sigma_3)/\sigma_3$ 4 $(\sigma_1+\sigma_3)/\sigma_3$ **Key :1** Edit Delete
The relationship among synchronous speed (Ns), rotor speed (N) and slip is _____	1 N=s Ns 2 N=(1+s) Ns 3 N=(1-s) Ns 4 N=(s-1) Ns **Key :3** Edit Delete
The stationary alternator should not be connected to live bus-bars because it	1 Will decrease bus - bar voltage though momentarily 2 Is likely to run as synchronous motor 3 Will get short - circuited 4 Will disturb generated emf's of other alternators connected in parallel. **Key :3** Edit Delete
Synchronous capacitor is	1 An ordinary static capacitor bank 2 An over excited synchronous motor running without mechanical load 3 An over excited synchronous motor driving mechanical load 4 None of the options specified **Key :2** Edit Delete
Root time method is used to determine	1 T, time factor 2 c_v, coefficient of consolidation 3 a_v, coefficient of compressibility 4 m_v, coefficient of volume compressibility **Key :2** Edit Delete
If a saturated soil sample is consolidated, the degree of saturation will	1 reduce 2 increase 3 remain constant 4 becomes zero **Key :3** Edit Delete

Questions	Choices
Minimum size of the particles of silt soil, is	1 0.002 mm 2 0.04 mm 3 0.06 mm 4 0.08 mm **Key :1** Edit Delete
The maximum shear stress occurs on the filament which makes an angle with the horizontal plane equal to	1 30° 2 45° 3 60° 4 90° **Key :2** Edit Delete
A partially saturated soil is classified as	1 One phase soil 2 Two phase soil 3 Three phase soil 4 Four phase soil **Key :3** Edit Delete

Questions	Choices
Soils containing organic matters	1 are of spongy nature 2 swell with decrease of moisture 3 shrink with increase of moisture content 4 expand with moisture content **Key :1** Edit Delete
The neutral stress in a soil mass is	1 force per neutral area 2 force per effective area 3 stress taken up by the pore water 4 stress taken up by solid particles **Key :3** Edit Delete
For keeping the stress wholly compressive the load may be applied on a circular column anywhere within a concentric circle of diameter	1 *d*/2 2 *d*/3 3 *d*/4 4 *d*/8 **Key :3** Edit Delete
For a good voltage profile under no load conditions, a long line needs	1 capacitive compensation 2 inductive compensation 3 resistive compensation 4 None of the mentioned answers are correct **Key :2** Edit Delete
Which of the following does not change in a transformer ?	1 Voltage 2 Frequency 3 All 4 Current **Key :2** Edit Delete
The principle of starting of 3 - phase induction motor is similar to	1 Synchronous motor 2 transformer with short-circuited secondary. 3 capacitor run IM 4 repulsion motor type starting. **Key :2** Edit Delete

Questions	Choices
A 4 pole wave wound dc motor having flux per pole of 9.56 × 10-3 Wb contains 460 armature conductors with armature resistance of 0.6 ohm. Calculate the starting current flowing through the armature if the supply voltage is 240 volt.	1 0.5 Amp. 2 320 Amp. 3 400 Amp. 4 800 Amp. **Key :3** Edit Delete
Squirrel cage bars placed in the rotor pole faces of an alternator help reduce hunting	1 Below synchronous speed only 2 None of the options given are correct 3 Above synchronous speed only 4 Above and blow synchronous speeds both **Key :4** Edit Delete
For a fixed value of complex power flow in a transmission line having a sending end voltage V, the real power loss will be proportional to	1 V 2 V*V 3 1/(V*V) 4 1/V **Key :3** Edit Delete
Nominal voltage rating of distribution transformer is	1 33kV/440V 2 33kV/440V 3 33kV/230V 4 11kV/440V **Key :4** Edit Delete
Ferranti effect is more predominant in_____ type of Transmission lines?	1 All type of lines 2 Long lines 3 Short lines 4 Medium lines **Key :2** Edit Delete
To reduce inductance per phase, which of the following is best answer?	1 underground cables 2 conductor of larger diameter 3 solid conductor 4 bundled conductor **Key :4** Edit Delete
The main consideration for higher and higher operating voltage of transmission is to	1 reduce power losses 2 increase power transmission capability 3 both increase the efficiency of transmission and reduce power losses 4 increase the efficiency of transmission **Key :3** Edit Delete

Questions	Choices
The yearly load duration curve of a power plant is a straight line. The maximum load is 750 MW and the minimum load is 600 Mw. The capacity of the plant is 900 MW. What is the capacity factor and utilization factor?	1 0.75, 0.83 2 0.78, 0.9 3 0.56,0.80 4 0.83,0.75 **Key :1** Edit Delete
The X:R ratio of 220 kV line as compared to 400 kV line is	1 greater 2 smaller 3 equal 4 it could be anything **Key :2** Edit Delete
A synchronous generator connected to infinite bus delivers power at lagging power factor. If its excitation is increased	1 The terminal voltage and current increase 2 The terminal voltage and current decrease 3 The voltage angle and current increase 4 The voltage angle and current decrease **Key :1** Edit Delete
For a fault at the terminals of a synchronous generator, the fault current is maximum for	1 3 phase fault 2 3 phase to ground fault 3 Line to ground fault 4 Line to line fault **Key :2** Edit Delete
Consider two buses connected by an impedance of (0+j5)Ω. The bus 1 voltage is 100∠30° V, and bus 2 voltage is 100∠0° V. The real and reactive power supplied by bus 1, respectively are	1 1000W, 268Var 2 -1000W,-134Var 3 276.9W,-56.7Var 4 -276.9W,56.7Var **Key :1** Edit Delete
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	1 P/4 2 P 3 2P 4 P/2 **Key :1** Edit Delete
In aluminium conductors steel reinforced, the insulation between aluminium and steel conductors is	1 any insulator 2 bitumen 3 insulin 4 no insulation is require **Key :4** Edit Delete

Questions	Choices
Impedance relays can be used for:	1 None of these 2 Earth faults only 3 Both earth and phase faults 4 Phase faults only **Key :3** Edit Delete
The sequence components of the fault current are as follows:I positive = j1.5 pu,I negative =− j0.5 pu, Izero =− j1 pu. The type of fault in the system is	1 LL 2 LG 3 LLG 4 LLLG **Key :3** Edit Delete
Incremental fuel costs (in some appropriate unit) for a power plant consisting of three generating units are $IC_1 = 20 + 0.3P_1$, $IC_2 = 30 + 0.4P_2$, $IC_3 = 30$ Where P_1 is the power in MW generated by unit i for i = 1,2 and 3. Assume that all the three units are operating all the time. Minimum and maximum loads on each unit are 50 MW and 300 MW respectively. If the plant is operating on economic load dispatch to supply the total power demand of 700 MW, the power generated by each unit is	1 $P_1 = 242.86$MW;$P_2 = 157.14$MW; and $P_3 = 300$MW 2 $P_1 = 157.14$MW;$P_2 = 242.86$MW; and $P_3 = 300$MW 3 $P_1 = 300$MW;$P_2 = 300$MW; and $P_3 = 100$MW 4 $P_1 = 233.3$MW;$P_2 = 233.3$MW; and $P_3 = 233.4$MW **Key :1** Edit Delete
All the sequence networks will be connected in parallel in one of the following pair of fault conditions.	1 L-G fault 2 L-L fault 3 L-L-G fault 4 None of These **Key :3** Edit Delete
_____ material is mostly used for filaments in incandescent lamps	1 Tungsten 2 Osmium 3 Tantalum 4 Silver **Key :1** Edit Delete
The skin effect depend upon _____ factor	1 Voltage 2 Current 3 Frequency 4 All the above **Key :3** Edit Delete

Questions	Choices
Transposition of transmission line is done to	1 reduce line losses 2 reduce skin effect 3 balance line voltage drop 4 reduce corona **Key :3** Edit Delete
The use of high speed circuit breakers	1 improves system stability 2 decrease system stability 3 reduces the short circuit current 4 increased the short circuit current **Key :1** Edit Delete
MCB stands for	1 miniature circuit breaker 2 minimum capacity breaker 3 molded circuit breaker 4 maximum capacity breaker **Key :1** Edit Delete
The rated voltage of a 3 phase power system is given as	1 rms phase voltage 2 peak phase voltage 3 peak line to line voltage 4 rms line to line voltage **Key :4** Edit Delete
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	1 *P* 2 2*P* 3 *P*/2 4 *P*/4 **Key :4** Edit Delete
At an industrial sub-station with a 4 MW load, a capacitor of 2 MVAR is installed to maintain the load power factor at 0.97 lagging. If the capacitor goes out of service, the load power factor becomes	1 0.85 2 1.00 3 0.80 lag 4 0.90 lag **Key :3** Edit Delete

Questions	Choices
The fault clearing time of a circuit breaker is usually	1 few minutes 2 few seconds 3 one second 4 few cycles of supply voltage. **Key :4** Edit Delete
A 500 MW, 21 kV, 50 Hz, 3-phase, 2-pole synchronous generator having a rated p.f = 0.9, has a moment of inertia of 27.5 10^3 kg-m^2 .The inertia constant (H) will be	1 2.44 s 2 2.71 s 3 4.88 s 4 5.42 s **Key :1** Edit Delete
When the power is to be transmitted over a distance of 500 km, the preferable transmission voltage should be in the range of	1 64KV 2 110KV 3 220KV 4 400KV **Key :4** Edit Delete
Which of the following regulation is considered to be the best	1 2% 2 30% 3 70% 4 98% **Key :1** Edit Delete
Transient state stability is generally improved by	1 using high speed governors on machines 2 using low inertia machines 3 dispensing with neutral grounding 4 using high inertia machines **Key :1** Edit Delete
The unit-step response of a system starting from rest is given by y(t) = 1- e^{-2t} for $t \geq 0$ The transfer function of the system is	1 $\frac{2}{2+s}$ 2 $\frac{1}{2+s}$ 3 $\frac{2s}{1+2s}$ 4 $\frac{1}{1+2s}$ **Key :1** Edit Delete

Questions	Choices
In the Bode-plot of a unity feedback control system, the value of phase of G(jw) at the gain cross over frequency is 125 deg. The phase margin of the system is	1 -125 deg 2 -55 deg 3 55 deg 4 125 deg **Key :2** Edit Delete
For an under damped second order system, the roots of characteristic polynomial are	1 Real but not equal 2 Real and equal 3 Complex conjugates 4 Imaginary **Key :3** Edit Delete
A series RLC circuit has R = 50 Ω, L = 100 mH and C = 1uF. The lower half power frequency of the circuit is	1 51.92KHz 2 1.92KHz 3 3.055KHZ 4 30.55KHz **Key :3** Edit Delete
When superposition theorem is applied to any circuit, for calculating the contribution of one voltage source, the other voltage source in that circuit is always …….	1 open circuited 2 short circuited 3 active 4 none of the options specified **Key :2** Edit Delete
A magnetic B vector and an electric field E vector are at right angles to each other along the y-axis and x-axis respectively. The path of an electron which starts at origin will be	1 straight along the y-axis 2 cycloidal along the x-axis 3 straight along the z-axis 4 cycloidal along the z-axis **Key :4** Edit Delete
Divergence at a point is positive if field lines are _____	1 Converging and Diverging 2 Converging 3 Tangential 4 Diverging **Key :4** Edit Delete
Assertion: Conducting medium behaves like a short circuit to the electrostatic field. Reason: In a charge free region, the Poisson's equation becomes Laplace's equation.	1 A is true but R is false 2 Both A and R are true but R is NOT the correct explanation of A 3 Both A and R are true and R is the correct explanation of A 4 A is false but R is true **Key :4** Edit Delete

Questions	Choices
The external and internal radii of a toroid are 45 cm and 55 cm respectively. It has a uniformly distributed winding of 1500 turns. The winding current is 1.2 A. The magnetic field intensity, in A/m, at 50 cm radius is nearest to	1 521 2 1800 3 573 4 636 **Key :3** Edit Delete
A metal sphere with 1 m radius and surface charge density of 10 Coulombs / $m^2$is enclosed in a cube of 10 m side. The total outward electric displacement normal to the surface of the cube is	1 5 π Coulombs 2 10 3 10 π Coulombs 4 40 π Coulombs **Key :4** Edit Delete
Identify which one of the following will NOT satisfy the wave equation.	1 $\sin[\omega(10z+5t)]$ 2 $\cos(y^2+5t)$ 3 $\sin(x)\ .\cos(t)$ 4 $50e^{(\omega t-3z)}$ **Key :2** Edit Delete
For static electric and magnetic fields in a homogenous source-free medium, which of the following represents the correct form of two of Maxwell's equations?	1 $\nabla.E=0,\ \nabla.B=0$ 2 $\nabla\times E=0,\ \nabla.B=0$ 3 $\nabla\times E=0,\ \nabla\times B=0$ 4 $\nabla.E=0,\ \nabla\times B=0$ **Key :2** Edit Delete
Two coaxial cables 1 and 2 are filled with different dielectric constants $\in_{r1}\ and\ \in_{r2}$ respectively. The ratio of the wavelengths in the two cables, (λ_1/λ_2) is	1 $\sqrt{\in_{r1}/\in_{r2}}$ 2 $\sqrt{\in_{r2}/\in_{r1}}$ 3 $\in_{r1}/\in_{r2}$ 4 $\in_{r2}/\in_{r1}$ **Key :2** Edit Delete
A charged point particle is placed at the center of a spherical Gaussian surface. The electric flux E is changed if	1 the sphere is replaced by a cube of the same volume 2 point charge is moved to center (but still inside original sphere) 3 the point charge is moved to just outside the sphere 4 a second point charge is placed just outside the sphere **Key :3** Edit Delete

Questions	Choices
Curl measures_____	1 rate of change of vector 2 Angular rotation 3 rate of change and angular rotation of vector 4 gradient of vector **Key :3** Edit Delete
The open loop transfer function of a unity feedback control system is given as $G(s) = \frac{as+1}{s^2}$. The value of 'a' to give a phase margin of 45° is equal to	1 0.141 2 0.441 3 0.841 4 1.141 **Key :3** Edit Delete
If a periodic signal has an even symmetry, the fourier series contains	1 sine terms and a constant terms 2 only cosine terms 3 cosine terms and a constant term 4 only sine terms **Key :3** Edit Delete
One of the characteristics of a single-phase motor is that it	1 can rotate in one direction only 2 requires only one winding 3 is not self-starting 4 Produces rotating magnetic field **Key :3** Edit Delete
Regulating transformers are used in power system to control	1 power factor 2 load flow 3 voltage 4 None of the mentioned answers are correct **Key :3** Edit Delete
Conductors for high voltage transmission lines are suspended from towers	1 to reduce clearance from ground 2 to increase clearance from ground 3 to reduce wind and snow loads 4 None of the mentioned answers are correct **Key :2** Edit Delete

Questions	Choices
1. Current derating may be necessary when thyristors are operating in	1 series 2 parallel 3 series or parallel 4 None of the mentioned answers are correct **Key :2** Edit Delete
_____ signals can have an infinite number of values in a range.	1 Analog 2 Digital 3 analog and digital 4 None of the mentioned answers are correct **Key :1** Edit Delete
A power system consist of 300 buses out of which 20 buses are generator bus, 25 buses are the ones with reactive power support and 15 buses are the ones with fixed shunt capacitors. All the other buses are load buses. It is proposed to perform a load flow analysis in the system using Newton-Raphson method. The size of the Newton Raphson Jacobian matrix is	1 553 by 553 2 540 by 540 3 555 by 555 4 554 by 554 **Key :4** Edit Delete
The slip of a 500HP, 3 phase, 400V, 50 Hz induction motor is 5%. How many complete cycles will the rotor voltage make per minute?	1 1000 2 150 3 1200 4 2000 **Key :2** Edit Delete
A loss less transmission line having Surge Impedance Loading (SIL) of 2280 MW is provided with a uniformly distributed series capacitive compensation of 30%.Then, SIL of the compensated transmission line will be	1 2280 MW 2 1835 MW 3 2725 MW 4 3257 MW **Key :3** Edit Delete
In a slip ring induction motor, resistance is connected in rotor phases	1 To increase starting torque 2 Increase supply voltage 3 To limit starting current 4 To decrease the supply voltage **Key :3** Edit Delete

Questions	Choices
A single phase transformer with a ratio of 6600/600 V has a load impedance of (4+j3) ohm connected across the terminals of low voltage winding. The power delivered to load is	1 24.2×10^2W 2 57.6×10^3W 3 1.2×10^3W 4 2.4×10^4W **Key :2** Edit Delete
Which of the following rotor quantity in a Squirrel Cage Induction Motor does not depend on its slip?	1 Induced emf 2 Reactance 3 Speed 4 Frequency **Key :3** Edit Delete
In Synchronous Alternator negative voltage regulation can be expected in case of	1 Lagging power factor load 2 Slow speed alternators 3 Leading power factor load 4 High speed alternators **Key :3** Edit Delete
Piezoelectric transducers are	1 Resistive transducers 2 Capacitive transducers 3 Passive Transducers 4 Active transducers **Key :3** Edit Delete
In a thyristor, ratio of latching current to holding current is	1 1.0 2 2.5 3 0.4 4 None of these **Key :2** Edit Delete
For normal SCRs, turn-on time is	1 half of tq 2 equal to tq 3 less than turn-off time tq 4 more than tq **Key :3** Edit Delete
While selecting a gas as a arc quenching media for circuit breaker, the property of gas that should be considered is	1 high dielectric strength 2 non-inflammability 3 non-toxicity 4 all mentioned answers are correct **Key :4** Edit Delete

Questions	Choices
Ripples will be present in _____ band of the chebyshev type II analog low pass filter	1 no change 2 increase 3 Transition band 4 stop band **Key :4** Edit Delete
The main advantage of ac. transmission system over d.c. transmission system is	1 Easy transformation 2 Less losses in transmission over long distances 3 Less insulation problem 4 Less problem of instability **Key :2** Edit Delete
The slip of an induction motor normally does not depend on	1 synchronous speed 2 core-loss component 3 shaft torque 4 rotor speed **Key :2** Edit Delete
In a single phase induction motor driving a fan load, the reason for having a high resistance rotor is to achieve	1 high efficiency 2 quick acceleration 3 reduced size 4 low starting torque **Key :1** Edit Delete
In a strain measuring device using a strain gauge, the output quantity is	1 resistance 2 either (a) or (b) 3 impedance 4 voltage **Key :4** Edit Delete
Which of the following insulator is used in TL at the river and road crossing?	1 Pin type insulator 2 Strain type insulator 3 Suspension type insulator 4 both Pin & Suspension type insulator **Key :2** Edit Delete

Questions	Choices
The main advantage of IGBT over SCR in power electronics is	1 reduced weight 2 self commutating capability 3 high frequency switching 4 self cooling property **Key :3** Edit Delete
A 10Ω copper resistor at 20 °C is to be used to indicate the temperature of bearings of machine. What resistance should not be exceeded if the maximum bearing temperature is not to exceed 150 °C. The resistance temperature coefficient of copper is 0.00393 Ω/ m- °C at 20 °C.	1 15.11Ω 2 11.5Ω 3 18.51Ω 4 20Ω **Key :1** Edit Delete
A freewheeling diode is placed across the DC load	1 to prevent reversal of load voltage 2 To prevent forward voltage 3 To block input current 4 To block output current **Key :1** Edit Delete
The signal u(t)-u(t-10) is	1 stochastic 2 Aperiodic 3 Periodic 4 None of the mentioned answers are correct **Key :2** Edit Delete
How many flip-flops required to design a sequence generator for the sequence “110011”?	1 4 2 3 3 1 4 2 **Key :2** Edit Delete
Improving power factor-	1 Reduces current for a given output 2 Increases losses in line 3 Increases the cost of station equipment 4 Synchronous condensers **Key :4** Edit Delete

Questions	Choices
Negative skin friction in a soil is considered when the pile is constructed through a	1 Fill material 2 dense coarse sand 3 over consolidated stiff clay 4 dense fine sand **Key :1** Edit Delete
The best indication of the behavior of a deposit of sand under load can be determined from its	1 bulk density 2 dry density 3 relative density 4 grading **Key :3** Edit Delete
The number of unused input combinations in a 4-bit BCD adder is	1 6 2 4 3 9 4 None of the mentioned answers are correct **Key :1** Edit Delete
In a transmission system the feeder supplies power to	1 Transformer substations 2 Service mains 3 Distributors 4 busbars **Key :3** Edit Delete
A unit step function is a _____ signal.	1 Non-Causal 2 Causal 3 Anti Causal 4 Aperiodic. **Key :2** Edit Delete
One farad is same as	1 one coulomb/volt 2 one coulomb/joule 3 one joule 4 one joule/coulomb **Key :1** Edit Delete
LED emits light when operated in…	1 Both Forward and Reverse bias 2 Reverse bias 3 Forward bias 4 Common collector **Key :3** Edit Delete

Questions	Choices
During SC test the power drawn by the primary winding is predominantly absorbed by	1 Copper loss 2 Core loss 3 Eddy-current plus hysteresis loss 4 Copper loss plus core loss **Key :4** Edit Delete
A chopper controlled electric train is powered from a 1500 V DC supply. The power semiconductor switching element has a minimum effective ON time of 40 μs .During starting and slow speed running, the output of the chopper has to go as low as 15 V. What is the highest chopper frequency possible to satisfy this requirement?	1 220 HZ 2 250 HZ 3 210 HZ 4 245 HZ **Key :2** Edit Delete
Speed of induction motor is controlled by its stator voltage, which power converter is used for varying the stator voltage	1 Rectifier 2 Chopper 3 Cycloconverter 4 Inverter **Key :4** Edit Delete
A sine voltage of 200Vrms, 50Hz is applied to an SCR through 100ohm resistor. The firing angle is 60°. Consider no voltage drop. The output voltage in rms is	1 1. 89.7 V 2 126.7 V 3 166.7 V 4 200 V **Key :2** Edit Delete
Triacs cannot be used in ac voltage regulators for	1 resistive load 2 Capacitive load 3 inductive load 4 resistive and inductive load **Key :3** Edit Delete
A 3 kV circuit uses SCR of 800 V rating. If derating is 25%, the number of SCRs in series is	1 4 Nos 2 5 Nos 3 6 Nos 4 8 Nos **Key :2** Edit Delete
the load must not be connected directly on	1 transmission line 2 distributor 3 service mains 4 L.T. 220 volt line **Key :1** Edit Delete

Questions	Choices
Which of the following is usually not the generating voltage?	1 6.6 kV 2 9.9 kV 3 11kV 4 13.2 kV **Key :2** Edit Delete
Zero sequence current can flow from a line into a transformer bank if the windings are in	1 Star/star 2 Grounded Star/delta 3 Delta/star 4 Delta/delta **Key :2** Edit Delete
When an electric train is moving down a hill , the dc motor acts as	1 dc shunt generator 2 dc shunt motor 3 dc series motor 4 dc series generator **Key :4** Edit Delete
A series RC circuit has $\|V_R\|$ = 12 V and |Vc|=5 V. The magnitude of the supply voltage is:	1 -7V 2 7V 3 13V 4 17V **Key :3** Edit Delete
A 3 V DC supply with an internal resistance of 2 Ω supplies a passive non-linear resistance characterized by the relation VNL = INL2. The power dissipated in the non linear resistance is	1 2.5W 2 1.0W 3 3.0W 4 1.5W **Key :2** Edit Delete
A node is the junction of more than _____ branches	1 1.5 2 2 3 1 4 None of the mentioned answers are correct **Key :2** Edit Delete
Impedance parameters are also called as	1 Y parameters 2 open circuit parameters 3 h-parameters 4 Short circuit parameters **Key :2** Edit Delete

Questions	Choices
The value of current at resonance in a series RLC circuit is affected by the value of	1 All the answers are correct 2 C 3 R 4 L **Key :3** Edit Delete
The most suited gate pulses given to the AC regulator with R - L load can be in the form of	1 Continuous signal 2 Large isolating pulse transformer 3 A train of pulses 4 Non-periodic signal **Key :3** Edit Delete
An electric heater draws 10 A from a 120-V line. The resistance of the heater is:	1 1.2 Ω 2 120 Ω 3 1200 Ω 4 12 Ω **Key :4** Edit Delete
A 5-H inductor changes its current by 3 A in 0.2 s. The voltage produced at the terminals of the inductor is:	1 8.888 V 2 1.2 V 3 75 V 4 3 V **Key :4** Edit Delete
A single phase one pulse controlled circuit has a resistance and counter emf load 400sin(314t) as the source voltage (https://electricalstudy.sarutech.com/voltage-or-electric-potential-difference/index.html) for a load counter emf of 200 V, the range of firing angle control is	1 30° to 150°. 2 30° to 180°. 3 60° to 120°. 4 60° to 180°. **Key :1** Edit Delete
Kirchhoff's second law is based on law of conservation of	1 Mass 2 Charge 3 Energy 4 Momentum **Key :2** Edit Delete

Questions	Choices
When P = Power, V = Voltage, I = Current, R = Resistance and G = Conductance, which of the following relation is incorrect?	1 $V = \sqrt{(PR)}$ 2 $I = \sqrt{(P / R}$ 3 $P = V^2G$ 4 $G = P/I^2$ **Key :4** Edit Delete
When excitation is increased (over excitation), the synchronous generator operates at	1 zero power factor 2 unity power factor 3 lagging power factor 4 leading power factor **Key :4** Edit Delete
The location of the lightning arresters is	1 away from the circuit breaker. 2 near the isolator 3 away from the transformer 4 near the transformer **Key :4** Edit Delete
In relation to the synchronous machines, which one of the following statements is false?	1 In salient pole machines, the direct-axis synchronous reactance is greater than the quadrature-axis synchronous reactance. 2 The V-cure of a synchronous motor represents the variation in the armature current with field excitation, at a given output power 3 The damper bars help the synchronous motor self-start 4 Short circuit ratio is the ratio of the field current required to produces the rated voltage on open circuit to the rated armature current **Key :4** Edit Delete

Questions	Choices
1. A single phase full - wave half controlled bridge converter feeds an inductive load. The two SCRs in the converter are connected to a common DC bus. The converter has to have a free wheeling diode	1 because the converter inherently does not provide for free wheeling 2 because the converter does not provide for free wheeling for high values of triggering angles 3 or else the free wheeling action of the converter will cause shorting of the AC supply 4 or else if a gate pulse to one of the SCRs is missed, it will subsequently cause a high load current in the other SCR **Key :3** Edit Delete
In single phase half bridge inverter feeding R-L load, the energy is feed back to the source by	1 Diode 2 Freewheeling diode 3 feedback diode 4 Inductor **Key :3** Edit Delete
For a second order system, the damping ratio is $0<\xi<1$, then the roots of characteristic polynomial are	1 Real but not equal 2 Real and equal 3 Complex conjugates 4 Imaginary **Key :3** Edit Delete
Which of the following represents a stable system? 1. Impulse response of the system decreases exponentially. 2. Area within the impulse response is finite. 3. Eigen values of the system are positive and real. 4. Roots of Characteristic equations of the system are real and positive.	1 1 and 4 2 1 and 3 3 2, 3 and 4 4 1, 2 and 4 **Key :4** Edit Delete
Sampling process converts continuous signal into ……	1 Analog 2 Discrete 3 Digital 4 Non-stationary signal **Key :2** Edit Delete

Questions	Choices
The core flux of a practical transformer with a resistive load	1 increases as the square root of the load 2 is strictly constant with load changes 3 increases linearly with load 4 decreases with increase of load **Key :2** Edit Delete
If f(t)==f(-t) and f(t) satisfy the Dirichlet's conditions then f(t) can be expanded in a fourier series containing	1 only sine terms 2 only cosine terms 3 sine terms and a constant terms 4 cosine terms and a constant terms **Key :1** Edit Delete
If h(n) is real, then the magnitude of $H(e^{j\omega})$ is _____ and phase of $H(e^{j\omega})$ is _____.	1 antisymmetric & symmetric 2 symmetric & antisymmetric 3 symmetric & symmetric 4 antisymmetric & antisymmetric **Key :2** Edit Delete
In a dielectric-conductor boundary (interface), the tangential component of electric field is	1 Zero 2 Infinity 3 E_t 4 $2E_t$ **Key :2** Edit Delete
A copper conductor of one square millimeter can safely carry an current of	1 100 A. 2 50 A. 3 25 A. 4 6 A. **Key :4** Edit Delete
A pressure gauge is calibrated from 0-50 kN/m^2. It has a uniform scale with 100 scale divisions. $1/5^{th}$ of a scale division can be read with certainty. The resolution of the gauge is	1 0.1 kN/m^2 2 0.4 kN/m^2 3 0.2 kN/m^2 4 0.3 kN/m^2 **Key :1** Edit Delete
The minimum clearance above the ground of the lowest conductor, for low and medium voltage lines, across a street may be	1 12 mts 2 10 mts 3 8 mts 4 4 mts **Key :4** Edit Delete

Questions	Choices
A 2A full-scale PMMC type dc ammeter has a voltage drop of 100 mV at 2A. The meter can be converted into a 10A full-scale dc ammeter by connecting a	1 12.5 m resistor in parallel with the meter 2 12.5 m resistor in series with the meter 3 50.0 m resistor in parallel with the meter 4 50.0 m resistor in series with the meter **Key :1** Edit Delete
Frequency can be measured using	1 Maxwell's bridge 2 schering's bridge 3 Wien's bridge 4 Campbell bridge **Key :3** Edit Delete
The electric field intensity E and electric potential V are interrelated by	1 E= - Divergence of V 2 E= Divergence of V 3 E= - Gradient of V 4 None of them correct **Key :3** Edit Delete
The ratio of intensity of magnetisation to the magnetisation force is known as	1 flux density 2 susceptibility 3 relative permeability 4 None of the mentioned answers are correct **Key :2** Edit Delete
During forward blocking state, a thyristor is associated with:	1 medium current and large voltage 2 low current and large voltage 3 large current and low voltage 4 None of the mentioned answers are correct **Key :2** Edit Delete
The commutation method in an inverter, is	1 None of the mentioned answers are correct 2 either line commutation or forced commutation 3 line commutation 4 forced commutation **Key :3** Edit Delete

Questions	Choices
A transmission line with 50 Hz frequency and 30 km length can be classified as	1 Short Transmission line 2 Long Transmission line 3 None of the mentioned answers are correct 4 Medium Transmission line **Key :1** Edit Delete
What is the necessity to connect an inductor at the receiving end of open circuited long Transmission lines?	1 To improve the power system stability 2 To improve the power factor 3 To reduce over voltages 4 None of the mentioned answers are correct **Key :3** Edit Delete
What is the advantage of using bundled conductors in Transmission lines other than reduction of Corona?	1 None of the mentioned answers are correct 2 Improvement of voltage regulation 3 Improvement of real power transfer capability 4 Both Improvement of real power transfer capability & Improvement of voltage regulation **Key :3** Edit Delete
In a UJT, maximum value of charging resistance is associated with	1 after the valley point 2 any point between peak & valley point 3 Peak Point 4 valley point **Key :3** Edit Delete
A forward voltage can be applied to an SCR after its	1 gate recovery time 2 anode current reduces to zero 3 reverse recovery time 4 anode voltage reduces to zero **Key :1** Edit Delete

Questions	Choices
In a given transformer for a given applied voltage, losses which remain constant irrespective of load changes are	1 hysteresis and eddy current losses 2 friction and windage losses 3 None of the mentioned answers are correct 4 copper losses **Key :1** Edit Delete
Armature reaction of an unsaturated D.C. machine is	1 magnetising 2 None of the mentioned answers are correct 3 demagnetising 4 cross magnetising **Key :4** Edit Delete
Fourier series is used in continous _____ signal	1 Periodic 2 Aperiodic 3 None of the mentioned answers are correct 4 Both periodic & aperiodic **Key :1** Edit Delete
Check whether the following signal y(n)=10x(t)+5 is	1 Linear 2 Non-Linear 3 Both 4 None of the mentioned answers are correct **Key :2** Edit Delete
A transformer cannot raise or lower the voltage of a D.C. supply because	1 a D.C. circuit has more losses 2 there is no need to change the D.C. voltage 3 None of the mentioned answers are correct 4 Faraday's laws of electromagnetic induction are not valid since the rate of change of flux is zero **Key :4** Edit Delete

Questions	Choices
_____ signals can have only a limited number of values.	1 None of the mentioned answers are correct 2 analog and digital 3 Digital 4 Analog **Key :3** Edit Delete
_____ are the conductors, which connect the consumer's terminals to the distribution	1 Distributors 2 Service mains 3 Feeders 4 None of the mentioned answers are correct **Key :2** Edit Delete
An isolator can operate under_____ load condition	1 None of the mentioned answers are correct 2 No load condition 3 Full load condition 4 Both Full load condition & No load condition **Key :4** Edit Delete
What is the true power consumed in a 30 V series RLC circuit if Z = 20 ohms and R = 10 ohms?	1 22.5Watts 2 30.0Watts 3 18Watts 4 15.0Watts **Key :1** Edit Delete
Kirchhoff's laws are applicable to circuits with:	1 Distributed parameters 2 Lumped parameters 3 Passive elements 4 Non-linear resistances **Key :1** Edit Delete

Questions	Choices
For an SCR, with turn-on time of 5 μsec, an ideal trigger pulse should have	1 long rise time with pulse width = 6 μsec. 2 short rise time with pulse width = 6 μsec. 3 long rise time with pulse-width = 3 μsec. 4 short rise time with pulse width = 3 μmsec. **Key :2** Edit Delete
Turn-on time of an SCR in series with R L circuit can be reduced by	1 increasing circuit resistance R 2 decreasing R 3 decreasing L 4 increasing circuit inductance **Key :3** Edit Delete
In an SCR, anode current flows over a narrow region near the gate during	1 td and tp 2 rise time tr and spread time tp 3 td and tr 4 delay time d **Key :3** Edit Delete
Probable error of one reading in terms of standard deviation is ……	1 0.6745σ 2 67.45σ 3 6.745σ 4 1.6745 σ **Key :1** Edit Delete
PMMC meters are directly suitable for……	1 Both AC and DC Measurements 2 None of the mentioned answers are correct 3 DC measurements 4 AC measurements **Key :3** Edit Delete
Meggar is a method of	1 None of the mentioned answers are correct 2 medium 3 low resistance measurement 4 High resistance measurement **Key :4** Edit Delete

Questions	Choices
A PMMC can be used as ---------- by using a low resistance shunt	1 Ballistic galvanometer 2 fluxmeter 3 Voltmeter 4 Ammeter **Key :4** Edit Delete
Which one of the following can act as the inverse transducer?	1 Resistance potentiometer 2 LVDT 3 Piezoelectric transducer. 4 Capacitive transducer **Key :3** Edit Delete
In a CRT the focusing anode is located	1 Before pre-accelerating anode 2 Between pre-accelerating and accelerating anodes 3 All the answers are wrong 4 Before accelerating anode **Key :2** Edit Delete
No eddy current and hysteresis losses occur in	1 Electrodynamo meter instruments 2 Moving iron instruments 3 PMMC instruments 4 Electrostatic instruments **Key :4** Edit Delete
The household energy meter is	1 none of these 2 a recording instrument 3 an integrating instrument 4 an indicating instrument **Key :1** Edit Delete
Sensitivity of a potentiometer can be increased by	1 Decreasing the length of potentiometer wire 2 increasing the length of potentiometer wire 3 Increasing the current in potentiometer wire 4 Decreasing the resistance in the rheostat in series with the battery **Key :2** Edit Delete

Questions	Choices
The Knowledge of Maximum sag is essential in determining the	1 Ground clearance of the conductor 2 Max. Span of the conductor 3 Max stress on the conductor 4 None of the mentioned answers are correct **Key :1** Edit Delete
Which of the following has negative temperature coefficient?	1 Brass 2 Electrolytes 3 Mercury 4 Silver **Key :2** Edit Delete
For the measurement of unknown inductance in terms of known capacitance, the suitable ac bridges are	1 Maxwell and Hay's bridge 2 Maxwell and Schering bridge 3 Hay's and Wien's bridge 4 Maxwell and Wien's bridge **Key :1** Edit Delete
LVDT which is an instrument for the measurement of displacement works on the principle of	1 Linear capacitance 2 Non - linear inductance 3 Mutual inductance 4 Linear inductance **Key :3** Edit Delete
Majority of the alternators in use have_____	1 stationary field type construction 2 Commutators 3 revolving a.c. armature winding 4 revolving field type construction **Key :4** Edit Delete
One of the characteristics of a single-phase motor is that it	1 Produce Rotating Magnetic Field 2 requires only one winding 3 can rotate in one direction only 4 is not self-starting **Key :4** Edit Delete

Questions	Choices
Consider the following statements regarding a discrete system with the output-input relationship, y(n)=x(n)+3. The system: 1) Is linear 2) Is causal 3) Has bounded output bounded input 4) Is non-realizable Of these statements	1 1, 2 & 3 are correct 2 2 & 3 are correct 3 1 & 2 are correct 4 1, 3 & 4 are correct **Key :1** Edit Delete
Sinusoidal voltage is given by the expression v = 300 cos (120*pi*t+30^{o}). What is the frequency in hertz.	1 600 KHz 2 600 Hz 3 60 Hz 4 60 KHz **Key :3** Edit Delete
For physically realizable circuit , impulse response is	1 One for t<0 2 Zero for t<0 3 Infinite for t>0 4 zero for t>0 **Key :2** Edit Delete
The electric field strength at distant point P, due to a point charge +q, located at the origin, is 100 μ V/m. If the point charge is now enclosed by a perfectly conducting metal sheet sphere whose center is at the origin, then the electric field strength at the point P, outside the sphere, becomes	1 Zero 2 100 μV/m 3 -100 μV/m 4 50 μV/m **Key :2** Edit Delete
A parallel plate capacitor consists of two metal plates of area *A* separated by a distance *d* and has a capacitance *C*. If another metal plate of area *A* is held parallel to either plate of the capacitor at distance *d*/2 from either plate, the new capacitance will be	1 4C 2 C 3 C/2 4 2C **Key :4** Edit Delete
The starting torque developed by an induction motor is maximum when	1 $R_2=X_2$ 2 $SR_2=X_2$ 3 $R_2=SX_2$ 4 None of these answers **Key :3** Edit Delete
At lagging loads, armature reaction in an alternator is	1 Non-effective 2 Cross-magnetising 3 Demagnetising 4 Magnetising **Key :3** Edit Delete
The plot of |cn| versus **ω** is called:	1 Complex amplitude spectrum 2 Complex frequency spectrum 3 None of the mentioned answers 4 Complex phase spectrum **Key :1** Edit Delete

Questions	Choices
Maximum power is transferred from source to load when load impedance is	1 equal to half of the source impedance 2 equal to conjugate of source impedance 3 equal to 1 4 equal to zero **Key :2** Edit Delete
The unit-impluse response of a system starting from rest is given by $C(t) = 1 - e^{-2t}$ for $t \geq 0$ The transfer function of the system is	1 $\frac{1}{1+2s}$ 2 $\frac{2}{s+2}$ 3 $\frac{2}{s(s+2)}$ 4 $\frac{1}{s+2}$ **Key :2** Edit Delete
The number of roots of $s^3 + 5s^2 + 7s + 3 = 0$ in the left half of the s – plane is	1 Two 2 One 3 Zero 4 Three **Key :1** Edit Delete
State the essential condition for a self excitation a DC machines, to induce voltage	1 armature voltage 2 all the answers are wrong 3 back EMF 4 residual voltage **Key :4** Edit Delete
If the Nyquist plot of the loop transfer function G(s) H(s) of a closed-loop system encloses the (-1, jo) point in the G(s) H(s) plane, the gain margin of the system is	1 zero. 2 greater than zero. 3 less than zero. 4 infinity. **Key :1** Edit Delete
A system with gain margin close to unity or a phase margin close to zero is	1 highly stable. 2 oscillatory. 3 relatively stable. 4 unstable. **Key :3** Edit Delete

Questions	Choices
For low resistance (from few micro ohms to one ohm) measurement, which bridge is used?	1 Guarded Wheatstone bridge 2 Maxwell bridge 3 Kelvin double bridge 4 Wheatstone bridge **Key :3** Edit Delete
The first generation of IC opamp was	1 Fair child μA 709 2 T.I. SN 72709 3 Motorola's MC 1709 4 National Semi-conductor's LM 709. **Key :1** Edit Delete
A Wheatstone bridge cannot be used for precision measurements because errors are introduced in to on account of	1 all the answers are right 2 contact resistance 3 thermo-electric EMF 4 Resistance of connecting leads **Key :1** Edit Delete
In opamp when the non-inverting input is grounded, the inverting input	1 none of the specified options 2 reduces to zero 3 looks like a virtual ground 4 attains high values **Key :3** Edit Delete
In an opamp by using binary weight resistors the summing circuit (0) can build a D/A converter	1 can build a A/D converter 2 can be used as a integrator. 3 can build a D/A converter 4 can be used as a differentiator **Key :2** Edit Delete
BIFET op amps use.....for the input stage and.....for later stages.	1 JFETs, MOS 2 MOSFET, JFETs 3 JFETS, bipolar transistors 4 diode, JFETs. **Key :3** Edit Delete
Amplitude scaling is done in analog computers	1 for highest precision 2 to increase noise 3 to increase voltage drift 4 for high precision and to reduce noise **Key :4** Edit Delete

Questions	Choices
A parallel plate air-filled capacitor has plate area of 10^{-4} m^2 and plate separation of 10^{-3} m. It is connected to a 0.5 V, 3.6 GHz source. The magnitude of the displacement current is	1 10 mA 2 100 mA 3 10 A 4 1.59 mA **Key :4** Edit Delete
Opamp Power Supply Rejection Ratio should be	1 as large as possible 2 as small as possible 3 nearly 0.5 4 nearly 1. **Key :2** Edit Delete
A UJT has one base resistance of 5.2 k. Its intrinsic stand of ratio is 0.67. The inter-base voltage of 12 V is applied across the two passes. The value of base current will be	1 1.41 mA 2 1.34 mA 3 1.16 mA 4 1.28 mA **Key :3** Edit Delete
An UJT exhibits negative resistance region:	1 Between peak and valley point 2 Before the break point 3 After the valley point 4 Both Between peak & valley point and After the valley point **Key :1** Edit Delete
If gate current is increased, the anode-cathode voltage at which SCR closes is	1 maximum 2 least 3 decreased 4 increased **Key :3** Edit Delete
UJT oscillators are used for gate-triggering of thyristors for	1 none of these 2 Being cheap and simple 3 Better phase control 4 Snap action **Key :3** Edit Delete
A device that does not exhibit negative resistance characteristic is	1 SCR 2 tunnel diode 3 FET 4 UJT **Key :3** Edit Delete
Most SCRs can be turned-off by voltage reversal during negative half-cycle of the ac supply for	1 frequencies upto 300 kHz 2 frequencies upto 30 kHz 3 all frequencies 4 frequencies upto 300 Hz **Key :2** Edit Delete

Questions	Choices
If a diode is connected in antiparallel with a SCR, then	1 none of these 2 turn-off power loss increases, but turn-off time decreases 3 both turn-off power loss and turn-off time decrease 4 turn-off power loss decreases but turn-off time increases **Key :4** Edit Delete
Surge current rating of an SCR specifies the maximum	1 repetitive current with rectangular wave 2 non-repetitive current with sine wave 3 non-repetitive current with rectangular wave 4 repetitive current with sine wave **Key :2** Edit Delete
For enhancing the power transmission in a long EHV transmission line, the most preferred method is to connect a	1 Series inductive compensation in the line 2 Shunt inductive compensation at the receiving end 3 Series capacitive compensator in the line 4 Shunt capacitive compensator at the sending end **Key :3** Edit Delete
Once SCR starts conducting a forward current, its gate losses control over:	1 None of the mentioned answers are correct 2 anode circuit voltage and current 3 anode circuit current only 4 anode circuit voltage only **Key :2** Edit Delete
A DC shunt motor is running at light load, what happens if the field winding gets opened?	1 Motor will stop 2 Motor will burn 3 Motor will make noise 4 Motor will pickup high speed **Key :1** Edit Delete