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# **TSNPDCL Assistant Engineer**

**Previous Year Paper  
(Electrical) 8 Nov 2015**

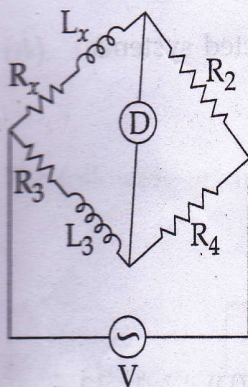


PART - A

1. According to IE rules 1956, the breaking strength of all conductors of overhead power lines shall be :
- (A) not less than 450 kg      ✓(B) not less than 350 kg
- (C) not less than 250 kg      (D) not less than 500 kg
2. In a DC generator the windings of interpoles are connected :
- (A) in series with main field winding, to create a pole of same polarity as the main pole ahead in the direction of rotation.
- (B) in series with main field winding, to create a pole of opposite polarity as the main pole ahead in the direction of rotation.
- ✓(C) in series with the armature winding, to create a pole of same polarity as the main pole ahead in the direction of rotation.
- (D) in series with the armature winding, to create a pole of opposite polarity as the main pole ahead in the direction of rotation.
3. A double cage induction motor has better starting and running characteristics because two of the following conditions are satisfied :
- (1) The inner cage has high resistance and reactance
- (2) The inner cage has low resistance and high reactance
- (3) The outer cage has high resistance and low reactance
- (4) The outer cage has low resistance and reactance
- They are :
- (A) (2), (4)      (B) (1), (3)      ✓(C) (2), (3)      (D) (1), (4)



4. The unknown inductance  $L_x$  is measured using Maxwells bridge shown in figure.



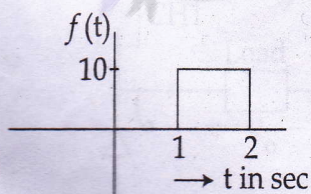
Under balanced conditions  $R_x$  and  $L_x$  are given by :

- (A)  $R_x = \frac{R_4}{R_2} R_3 ; L_x = \frac{R_2}{R_4} L_3$       ☒ (B)  $R_x = \frac{R_2}{R_4} R_3 ; L_x = \frac{R_2}{R_4} L_3$   
 (C)  $R_x = \frac{R_2}{R_4} R_3 ; L_x = \frac{R_4}{R_2} L_3$       (D)  $R_x = \frac{R_4}{R_3} R_2 ; L_x = \frac{R_4}{R_3} L_3$

5. Slip test is performed to determine :

- (A) Slip in an induction motor  
☒ (B)  $X_d$  and  $X_q$  in a salient pole alternator  
 (C) Synchronous impedance in an alternator  
 (D) Positive and negative sequence impedances of an alternator

6. The Laplace transform of the function shown in the figure, is :



- (A)  $\frac{10}{s} e^{-s}$       (B)  $\frac{10}{s} (e^{-s} + e^{-2s})$       ☒ (C)  $\frac{10}{s} (e^{-s} - e^{-2s})$       (D)  $10 (e^{-s} - e^{-2s})$



7. Peterson coil is used for :

- (A) shunt compensation of lines (B) reduce fault currents  
☒ (C) grounding of system neutral (D) connecting interconnected systems

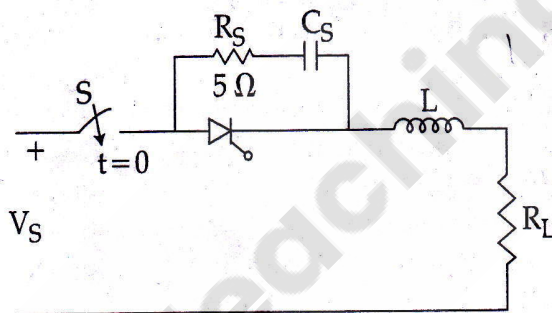
8. The open loop transfer function with unity feedback is given by

$$G(s) = \frac{1}{s(s+2)}$$

The poles of the closed loop system are located at :

- (A) 0, -2 (B) 2.46, -4.46 ☒ (C) -1, -1 (D) -1, -2

9. Figure shows a thyristor controlling power in a load resistance  $R_L$ . The supply voltage is 240 V DC and the limit for  $\frac{di}{dt}$  for the SCR is 50 A/ $\mu$ sec. The minimum value of  $L$ , used for  $\frac{di}{dt}$  protection, in  $\mu$ H is :



- (A) 2.4 (B) 120 (C) 1.2 ☒ (D) 4.8

10. A function  $F(s)$  could be a driving point Impedance or Admittance function of an RC or RL network

$$F(s) = \frac{(s+1)(s+3)}{(s+2)(s+4)}$$

This function can be realised as :

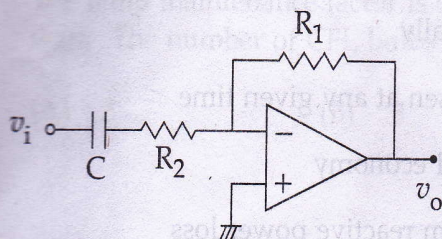
- ☒ (A) RL network if  $F(s) = Z(s)$   
 (B) RC network if  $F(s) = Z(s)$   
 (C) RL network if  $F(s) = Y(s)$   
 (D) It cannot be realised either by RC or RL network



11. From an open circuit test on a transformer, the no load power factor was determined. Out of the following choices which is the most likely value.

(A) 0.9 (B) unity (C) 0.8 (D) 0.4

12. The following op-amp circuit is :



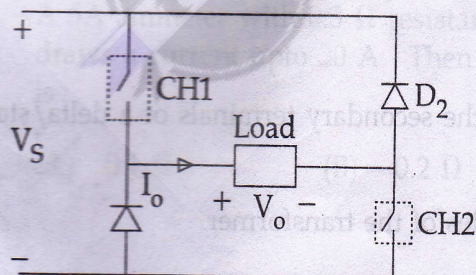
(A) Low pass filter with cut off frequency  $\frac{1}{R_2 C}$

(B) Low pass filter with cut off frequency  $\frac{1}{R_1 C}$

(C) High pass filter with cut off frequency  $\frac{1}{R_2 C}$

(D) High pass filter with cut off frequency  $\frac{1}{R_1 C}$

13. The circuit shown employs 2 choppers to supply the load. This chopper drive is :



(A) one quadrant drive (B) two quadrant drive

(C) 3 quadrant drive (D) 4 quadrant drive



14. The range of frequencies used in induction heating is :

- (A) 0 - 25 Hz (B) 50 to 100 Hz  
(C) less than 200 Hz (D) more than 1 kHz

15. Unit commitment is a procedure in which :

- (A) Scheduling of total generation is done economically  
(B) Optimal combination of units in a system is chosen at any given time  
(C) Most efficient machines are selected for financial economy  
(D) Most efficient machines are selected for minimum reactive power loss

16. If a phase lead compensator has the following transfer function.

$$G_c(s) = \frac{K(1 + \frac{s}{z})}{(1 + \frac{s}{p})} \quad p, z > 0.$$

Then,

- (A)  $z < p$  (B)  $z > p$  (C)  $z > Kp$  (D)  $z > \frac{K}{p}$

17. The state of charge of the battery is indicated by the electrolyte's :

- (A) mass (B) colour (C) viscosity (D) specific gravity

18. If an unsymmetrical line to ground fault occurs at the secondary terminals of a delta/star, ungrounded transformer, then :

- (A) zero sequence currents are present on both sides of the transformer  
(B) zero sequence currents are absent on both sides of the transformer  
(C) zero sequence currents are present on the secondary side but not on the primary side  
(D) zero sequence currents are present on the primary side but not on the secondary side

19. LVDT is used to measure :

- (A) strain (B) pressure (C) flow (D) displacement

20. A hall with an area of  $10\text{ m} \times 10\text{ m}$  is to be illuminated with 240 lux using 30 W CFL bulbs. The lamp maintenance factor is 0.7 and utilisation factor is 0.72. CFL bulb gives 80 lumens/watt. The number of CFL bulbs required are :

- (A) 5 (B) 8 (C) 20 (D) 30

21. 3 equal impedances  $10 + j10\ \Omega$  are connected in delta across a 3 phase balanced supply, the angle between the line current  $I_R$  and line voltage  $V_{RY}$  is given by :

- (A)  $45^\circ$  (B)  $75^\circ$  (C)  $15^\circ$  (D)  $0^\circ$

22. The armature current on symmetrical 3 phase short circuit of a synchronous machine (salient pole) :

- (A) has q-axis current only  
(B) has d-axis current only  
(C) has both d and q axis currents  
(D) cannot be divided between q and d axis currents

23. A 5A ammeter with  $0.3\ \Omega$  resistance is to be used to measure current in a circuit which draws a current upto 20 A. Then the shunt resistance to be used alongwith the ammeter is :

- (A)  $0.1\ \Omega$  (B)  $0.2\ \Omega$  (C)  $0.3\ \Omega$  (D)  $1\ \Omega$

24. A 5 kW, 220 V, 1500 rpm DC shunt motor runs at 1550 rpm on no load with full voltage applied. If the applied voltage is reduced to 165 V, the speed at which it will run, in rpm, is : (neglect armature resistance)

- (A) 1162.5 (B) 775 (C) 1200 (D) 1550



D

25. Which of the following is a cold cathode lamp ?
- (A) Mercury vapour lamp (B) Sodium vapour lamp  
(C) Incandescent lamp ☒ (D) Neon lamp
26. Load compensation in power systems is a process to :
- ☒ (A) Maintain better voltage profile  
(B) Increase short circuit capacity of the system  
(C) Generate required harmonics for loads like arc furnaces  
(D) Compensate for the line reactance
27. Principle of Thermocouple is based on :
- (A) Thomson effect (B) Peltier effect  
☒ (C) Seebeck effect (D) Kelvin effect
28. The unit of speed regulation of a governor is :
- (A) Hz ☒ (B) Hz/MW (C) Hz/MVA (D) rpm/MVAR
29. Consider the following statements. Which of these statements are correct ?
- (1) Reactance relays are preferred for ground fault relaying  
(2) Impedance relays are most suitable for protecting long transmission lines  
(3) Mho relays are best suited for long transmission line protection  
(4) Reactance relays are widely used for protection of Medium transmission lines
- (A) All of them ☒ (B) (1) and (3) (C) (2) and (4) (D) (1), (2) and (4)
30. HRC fuses provide best protection against :
- (A) lightning ☒ (B) short circuits (C) overload (D) over voltage

31. In a PMMC instrument, the damping provided is :

- (A) air damping (B) fluid damping  
☒ (C) eddy current damping (D) magnetic damping using a magnet

32. The fundamental component of the single phase full bridge inverter output voltage is ( $V_s$  is the DC input voltage) :

- (A)  $\frac{V_s}{\pi} \sin \omega t$  (B)  $\frac{2V_s}{\pi} \sin \omega t$  (C)  $\frac{4V_s}{3\pi} \sin \omega t$  ☒ (D)  $\frac{4V_s}{\pi} \sin \omega t$

33. A dummy strain gage is used in a quarter bridge strain gage circuit to :

- ☒ (A) compensate for changes in temperature and lead wire resistance  
 (B) produce more output voltage from the bridge  
 (C) increase the sensitivity of the bridge  
 (D) compensate lead wire resistance only

34. A 500 W bulb fitted with a reflector illuminates an area of  $2 \text{ m} \times 2 \text{ m}$  with an average illumination of 500 lux. The efficiency of the reflector is 50%. The efficiency of the bulb in lumens/watt is :

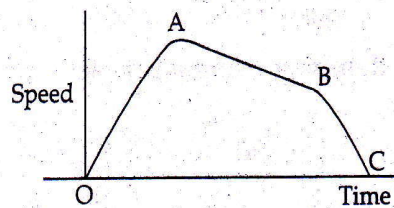
- ☒ (A) 8 (B) 10 (C) 6 (D) 12

35. A  $3 \phi$ , 6 P induction motor is run with a rated voltage  $V$  and rated frequency 50 Hz. The maximum torque obtained is  $T_{m1}$ . If the motor is supplied with same voltage but a frequency of 60 Hz, the maximum torque would be approximately.

- ☒ (A)  $0.7 T_{m1}$  (B)  $0.5 T_{m1}$  (C)  $1.2 T_{m1}$  (D)  $T_{m1}$

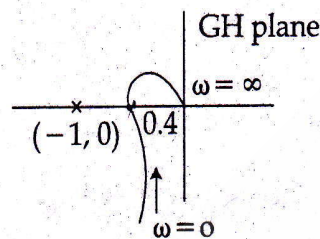


36. The speed time curve for an electric train is shown in the figure. In this, the segment  $AB$  represents.



- (A) Acceleration    ☒ (B) Coasting    (C) Braking    (D) Regeneration

37. The polar plot of a feedback control system, which is open loop stable with gain  $K=1$  given by



Now if  $K$  is doubled, the system will be :

- (A) stable with less oscillations in step response  
 (B) unstable  
☒ (C) stable with more oscillations in step response  
 (D) step response has sustained oscillations
38. In a 3 stack, variable reluctance stepper motor with 12 rotor teeth, the angle through which the rotor moves for one pulse excitation is :
- (A)  $12^\circ$     (B)  $5^\circ$     ☒ (C)  $10^\circ$     (D)  $30^\circ$

39. A Pyrheliometer is an instrument to measure :

- (A) temperature of solar photovoltaic cell  
☒ (B) intensity of direct solar radiation at normal incidence  
 (C) intensity of indirect solar radiation  
 (D) efficiency of a solar photovoltaic cell

40. A second order system with zero initial conditions, has an impulse response

$$C(t) = 10 e^{-5t} \sin 10 t \text{ for } t \geq 0$$

when excited by a unit step input, the steady state value of the response is :

- (A) 0 (B) 1.0 (C) 0.5 ☒ (D) 0.8

41. A load has a per unit impedance of 0.6 to a base of 20 MVA and 33 kV. The P.U. impedance to a base of 10 MVA and 11 kV is :

- (A) 0.121 ☒ (B) 2.7 (C) 0.133 (D) 0.9

42. Consider the 8085 program below

MVI A BB

LXI B 2060 H

STAX B

After this program is executed, the contents of A and the flag which is set, are :

- (A) OOH, carry flag (B) BB, AC flag  
(C) OOH, zero flag ☒ (D) BB, no flag

43. The supply for arc welding is :

- (A) High voltage, high current ac voltage  
(B) Low voltage, low current ac voltage  
(C) High voltage, high current dc voltage  
☒ (D) Low voltage, high current ac or dc voltage

44. A transmission line of 200 km has a certain A, B, C and D parameters. If the length is reduced to 60 km.

- ☒ (A) A increases, B decreases (B) A and B increase  
(C) A decreases, B decreases (D) A and B decrease



D

45. Consider the two columns A and B. In the column A different instruments are given and in column B certain characteristics of the meters are given. Match items of A with B.

A	B
(1) Moving iron	(i) No control springs
(2) PMMC	(ii) Air damping
(3) Energy meter	(iii) Electromagnetic damping
	(iv) Eddy current damping

(A) (1)-(iv), (2)-(iii), (3)-(ii) (B) (1)-(iii), (2)-(ii), (3)-(iv)

(C) (1)-(ii), (2)-(iii), (3)-(i) (D) (1)-(ii), (2)-(iv), (3)-(i)

46. For using regenerative braking, the most suitable motor is :

(A) DC series motor (B) Slip ring induction motor  
(C) Squirrel cage induction motor (D) Synchronous motor

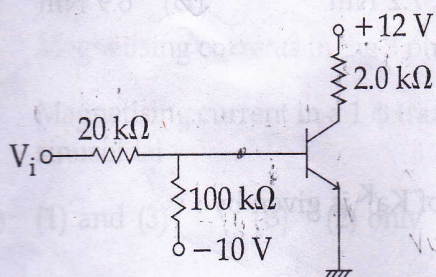
47. For the K-map shown the minimised function is :

AB \ CD	CD			
	00	01	11	10
00	1	1	0	1
01	0	0	0	0
11	0	0	1	1
10	1	0	1	1

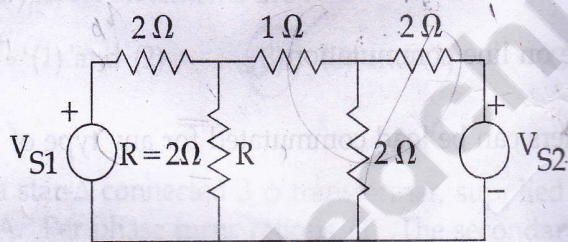
(A)  $\bar{A}\bar{B}\bar{C} + AC + \bar{B}CD + \bar{A}B\bar{D}$  (B)  $\bar{A}\bar{B}\bar{C} + AC + \bar{A}BC$   
(C)  $\bar{A}\bar{B}\bar{C} + AC + \bar{B}\bar{D}$  (D)  $\bar{A}\bar{B}\bar{C} + AC + \bar{A}B\bar{D}$



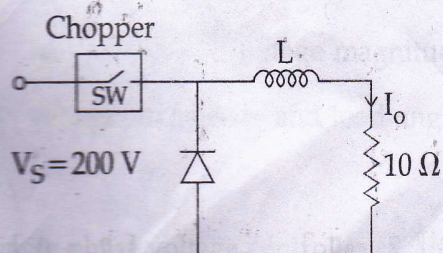
48. Consider the circuit shown in the figure. If the  $\beta$  of the transistor is 30 and the input voltage is +5 V, then the transistor would be operating in :



- (A) cut off region (B) breakdown region  
 (C) active region (D) saturation region
49. In the circuit shown the power in resistor R is 8 W, when  $V_{S1} = 12$  V and  $V_{S2} = 0$  V. Find the power in the same resistor R when  $V_{S1} = 12$  V and  $V_{S2} = 24$  V, in watts.



- (A) 16 (B) 24 (C) 0 (D) 32
50. For the simple chopper circuit shown, the average and rms value of currents for a duty cycle of 0.49, in amps, are (neglect the drop across chopper when ON)



- (A) 9.8, 14 (B) 14, 9.8 (C) 20, 28.28 (D) 14, 18.2



D

51. A six pole, 3 phase 50 Hz induction motor has a maximum torque of 10 Nm at 875 rpm. torque at 5% slip is :

- (A) 7.4 Nm (B) 5.2 Nm (C) 7.2 Nm (D) 6.9 Nm

52. If Z transform of  $a^K$  is  $\frac{Z}{Z-a}$  then the Z transform of  $Ka^K$  is given by :

- (A)  $\frac{KZ}{Z-a}$  (B)  $\frac{-aZ}{(Z-a)^2}$  (C)  $\frac{aZ}{(Z-a)^2}$  (D)  $\frac{a}{(Z-a)^2}$

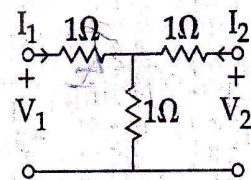
53. Consider the following statements :

- (1) Step up cycloconverters require forced commutation.  
 (2) Step down cycloconverters operate on line commutation  
 (3) Step up or step down cycloconverters can be load commutated for any type of load

The correct statements are :

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

54. The h-parameter matrix of the network shown is :



- (A)  $\begin{bmatrix} 1.5 & 0.5 \\ -0.5 & 0.5 \end{bmatrix}$  (B)  $\begin{bmatrix} 0.5 & -0.5 \\ 0.5 & 1.5 \end{bmatrix}$  (C)  $\begin{bmatrix} 2 & 1 \\ -1 & 0.5 \end{bmatrix}$  (D)  $\begin{bmatrix} 2 & 0 \\ -1 & 0.5 \end{bmatrix}$

S



55. Consider the following statements.

- (1) Magnetising current in a 1  $\phi$  transformer is sinusoidal
- (2) Magnetising currents in the 3 phase supply lines of a 3 phase transformer are sinusoidal
- (3) Magnetising current in a 1  $\phi$  transformer is non sinusoidal but the induced voltages are sinusoidal

(A) (1) and (3)      (B) (2) only      (C) (2) and (3)      (D) (1) only

56. Consider the following statements :

- (1) IGBT has low input impedance compared to PMOSFET.
- (2) IGBT and PMOSFET are both voltage controlled devices
- (3) IGBT can be designed for higher voltages compared to PMOSFETS
- (4) IGBT converters are more costly and bigger in size compared to BJT converters

The correct statements are :

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

57. In a star- $\Delta$  connected 3  $\phi$  transformer, supplied with 11 kV on star side, the line current is 20 A. Per phase turns ratio is 11. The secondary line voltage and line current are :

(A) 577 V, 381 A      (B) 550 V, 220 A      (C) 635 V, 381 A      (D) 1 kV, 220 A

58. The specified variables at any PV bus for a load flow study are :

- (A) real and reactive power
- (B) real power and load angle
- (C) real power and voltage magnitude
- (D) voltage magnitude and load angle

59. A single phase voltage controller of 220 V, 50 Hz and a load of 10  $\Omega$ . For 9 cycles 'on' and 7 cycles 'off', the rms output voltage and input power factor are :

(A) 170 V, 0.7      (B) 171 V, 0.78      (C) 165 V, 0.75      (D) 180 V, 0.6



60. A voltage is impressed at the end A of a long transmission line AB. This voltage travelling along AB has two components  $f\left(t - \frac{x}{v}\right)$  and  $f\left(t + \frac{x}{v}\right)$  where  $v$  is the velocity of the wave and  $x$  is the distance travelled.

Which of the following statements is **true** for such a wave ?

(A)  $f\left(t - \frac{x}{v}\right)$  is a backward travelling component

(B)  $f\left(t + \frac{x}{v}\right) - f\left(t - \frac{x}{v}\right)$  is the total voltage at any time 't'

(C) The sum of the two is the total voltage at time 't'.

(D)  $f\left(t + \frac{x}{v}\right)$  is a forward travelling component

61. The voltage of a DC 2 wire system operating at 200 V is raised to 400 V. The percentage saving in conductor material gained if same power is transmitted over the same distance with same power loss.

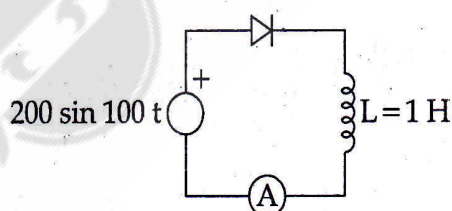
(A) 50

(B) 40

(C) 75

(D) 60

62. In the diode rectifier circuit shown, the Permanent Magnet Moving coil meter will read :



(A) 1 A

(B) 1.414 A

(C) 2 A

(D) 2.814 A

63. A separately excited DC motor is energised from a 440 V, 50 Hz, 3  $\phi$  full converter. The input voltage to the motor for a firing angle of  $45^\circ$ , in volts, is :

(A) 420

(B) 297

(C) 390

(D) 260



64. In a synchronous generator if the excitation increased from a low value to normal value, with a fixed load.

- (A) The armature current increases and the power factor decreases
- (B) The armature current decreases and the power factor also decreases
- (C) The armature current decreases and the power factor increases but is lagging
- ☒ (D) The armature current decreases and the power factor increases and is leading

65. The voltages across various discs of suspension insulators having identical discs are different due to :

- (A) Surface leakage currents
- (B) Series capacitance of lines
- ☒ (C) Shunt capacitance to ground
- (D) Series and shunt capacitances

66. For a single phase full bridge inverter with  $V_s = 220$  V DC,  $T = 1$  ms feeding a resistive load, the fundamental component of the load voltage (rms value) in volts is :

- (A)  $110\sqrt{2}$
- (B)  $280\sqrt{2}$
- (C)  $160\sqrt{2}$
- ☒ (D)  $140\sqrt{2}$

67. The range of  $k$  for which the system with the following characteristic equation is stable, is  $s^3 + ks^2 + (k+2)s + 3 = 0$  :

- (A)  $k > 0$
- ☒ (B)  $k > 1$
- (C)  $-3 < k < 1$
- (D)  $1 < k < 3$

68. Which of the following is true for a bus impedance matrix ?

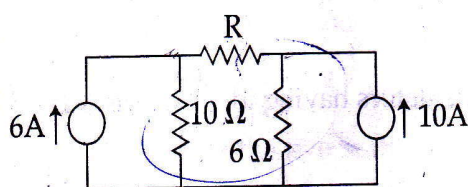
- (A) It is sparse
- (B) It has diagonally dominant elements
- ☒ (C) It is the inverse of the bus admittance matrix
- (D) Each element of it is the reciprocal of the corresponding element in admittance matrix



69. In a transformer the core is laminated to reduce :

- (A) copper losses in the core (B) hysteresis losses only  
(C) hysteresis and eddy current losses (D) eddy current losses only

70. The power dissipated in watts, in the resistor R is :



- (A) 36 R (B) 0 (C) 100 R (D) 16 R

71. The arc voltage in a circuit breaker is :

- (A) in phase with the arc current (B) lagging by  $90^\circ$  with arc current  
(C) leading by  $90^\circ$  with arc current (D) lagging by  $45^\circ$  with arc current

72. A short circuit test on a 1 $\phi$ , 4 kVA, 200/400 V, 50 Hz transformer gave following results  
HV side : 15 V, 10 A, 80 W.

The percentage regulation on full load unity power factor is :

- (A) 2 (B) 4 (C) 1 (D) -2

73. The speed of a separately excited DC motor is controlled by a 3  $\phi$ , semiconverter from a 3- $\phi$  440 V, 50 Hz supply. The armature resistance is 1  $\Omega$  and motor torque constant of 2 Nm/A. If firing angle is  $45^\circ$ , the back emf generated by the motor, for a torque of 50 Nm, is :

- (A) 460 V (B) 482 V (C) 420 V (D) 333 V



74. A thyrite type lightening arrester :

- (A) blocks surge voltages appearing on a line >
- (B) absorbs the surge voltage appearing on a line >
- (C) returns the surge back to source
- ☒ (D) offers low resistance path to surge currents

75. The electrode rod used for welding uses a coating on it :

- (1) to give a vapour to serve as a shielding gas to protect the weld area from atmospheric contamination
- (2) to protect the arc
- (3) to provide slag to protect the welded area
- (4) to provide better contact with the base material

Which of the statements are correct ?

- (A) (1) and (2)      (B) (2) and (3)      ☒ (C) (1) and (3)      (D) (3) only

76. In a 2 kW, 200 V, 1000 rpm DC series motor the torque at full load was found to be 0.3 N-m.  
The torque at half full load in N-m is :

- (A) 0.2      (B) 0.15      ☒ (C) 0.075      (D) 0.1

77. Damper winding is provided in 3 phase synchronous motors to :

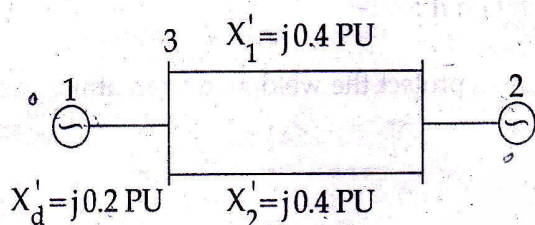
- (A) prevent hunting only
- ☒ (B) provide starting torque and prevent hunting
- (C) provide starting torque only
- (D) prevent crawling



78. When high rate of rise of recovery voltages are expected in networks consisting of generators, transformers, reactors and lines, circuit breakers with shunt resistance are employed. To ensure exponential build up to 50 Hz recovery without overshoot, the resistance connected is, (L is the inductance of the line and capacitance from line to ground is C)

(A)  $\sqrt{LC}$  (B) LC (C)  $0.5 \sqrt{\frac{L}{C}}$  (D)  $\sqrt{\frac{L}{C}}$

79. A generator is connected to an infinite bus through a double circuit line as shown

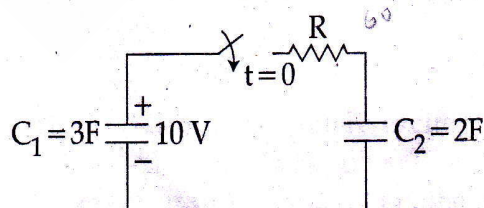


The admittance matrix Y is given by :

(A)  $\begin{bmatrix} j5 & 0 & -j5 \\ 0 & j5 & -j5 \\ -j5 & -j5 & j10 \end{bmatrix}$  (B)  $\begin{bmatrix} -j5 & 0 & j5 \\ 0 & -j5 & j5 \\ j5 & j5 & -j10 \end{bmatrix}$

(C)  $\begin{bmatrix} -j5 & 0 & -j5 \\ 0 & j5 & -j5 \\ -j5 & -j5 & j10 \end{bmatrix}$  (D)  $\begin{bmatrix} -j5 & +j10 & j5 \\ j10 & -j5 & j5 \\ j5 & j5 & -j10 \end{bmatrix}$

80. In the following circuit the switch is closed at  $t=0$ . The total energy lost in the resistor  $R=10\Omega$  is found to be 60 J. If the value of R is reduced to 5  $\Omega$ , the energy lost in the resistor in Joules would be :



(A) 60 (B) 30 (C) 120 (D) 15



## PART - B

81. When was Telangana merged with Andhra, historically ?

- ☒ (A) 1956      (B) 1958      (C) 1955      (D) 1952

82. The sum of  $\frac{1}{(32)^{-1/5}} + \frac{1}{(216)^{-2/3}} + \frac{1}{(256)^{-3/4}} =$

- (A) 1      (B) 110      (C) 101      ☒ (D) 102

83. Choose the appropriate synonym for the word given below :

STERNUTATION

- ☒ (A) Sneezing      (B) Trepidation      (C) Hardening      (D) reversal

84. What is the name of the India's first satellite ?

- (A) Bhaskara I      (B) Bhaskara II      ☒ (C) Aryabhata      (D) Rohini

85. What is the sum of two consecutive even numbers, the difference of whose squares is 164 ?

- ☒ (A) 82      (B) 41      (C) 42      (D) 24

86. Which of the following dynasties ruled Telangana ?

- (A) Pala      (B) Sena      ☒ (C) Kakatiya      (D) Chera

87. Who is the present Chairman/CEO of Google ?

- ☒ (A) Mr. Sundar Pichai      (B) Mr. Satya Nadella  
(C) Mr. Cyrus P. Mistry      (D) Ms. Indra Nooyi



88. Who among the following personalities received Bharata Ratna for the year 2015 ?  
(A) Shri Sachin Tendulkar (B) Shri Bhimsen Joshi  
(C) Shri C.N.R. Rao (D) ☒ Shri Atal Bihari Vajpayee
89. A wireless technology built in electronic gadgets used for exchanging data over short distances is :  
(A) Wi-Max (B) ☒ Bluetooth (C) Modem (D) USB
90. Identify the correct spelling from the options given.  
(A) ☒ Quintessence (B) Quintassence (C) Quintesance (D) ☒ Quintitessence
91. What is the full form of SAARC ?  
(A) The South Atlantic Association for Regional Corporation  
(B) ☒ The South Asian Association for Regional Cooperation  
(C) The South Asian Association for Regional Corporation  
(D) The Southern Asia Association for Regional Cooperation
92. Bonalu is mainly celebrated in the period between :  
(A) January and February (B) ☒ July and August  
(C) September and October (D) April and May
93. The age of Rajesh differ by 20 year with Raghu. If 5 years ago, the age of Rajesh be 5 times as old as the Raghu, then their present ages in years as :  
(A) 20, 4 (B) 25, 5 (C) ☒ 30, 10 (D) 35, 15
94. Which of the following is the official state bird of Telangana ?  
(A) Peacock (B) Pегion (C) Sparrow (D) ☒ Indian roller



95. What will be the decimal equivalent of  $(111011.101)_2$  ?  
(A) 48.625 (B) 59.487 (C) 48.487 (D) 59.625
96. A host computer that wants to communicate with another host computer on an Internet requires the following to identify itself :  
(A) MAC address (B) IP address (C) Port (D) Socket
97. Identify the part of the sentence that has an error.  
Television viewers claim that / the number of scents depicting /  
(A) (B)  
alcohol consumption have increased dramatically / over the last decade.  
(C) (D)
98. In the following question, pick up the choice which is most opposite in meaning of the underlined word in the sentence.  
This author has perspicuity in his style.  
(A) Frankness (B) Bluntness (C) Vivacity (D) Sincerity
99. The difference between people with access to computers and the Internet and those without this access is known as the :  
(A) Digital divide (B) Internet divide (C) Web divide (D) Cyber divide
100. One business men invested ₹ 50,000 with rate of interest at 20 percent per annum. The interest was compound half yearly for first year and in the next year it was compound yearly. What will be the total interest earned at the end of three years ?  
(A) ₹ 20,300 (B) ₹ 49,200 (C) ₹ 47,020 (D) ₹ 48,010

- o o o -



**ELECTRICAL ENGINEERING  
PROVISIONAL KEY**

**A**

Q.NO.	ANS	Q.NO.	ANS	Q.NO.	ANS	Q.NO.	ANS
1	C	26	A	51	C	76	C
2	D	27	C	52	A	77	A
3	A	28	D	53	C	78	B
4	A	29	C	54	B	79	C
5	D	30	A	55	B	80	B
6	A	31	A	56	A	81	D
7	B	32	B	57	C	82	A
8	D	33	B	58	A	83	B
9	C	34	A	59	C	84	C
10	A	35	B	60	A	85	B
11	B	36	B	61	D	86	C
12	D	37	C	62	C	87	A
13	C	38	D	63	A	88	D
14	C	39	A	64	D	89	B
15	D	40	C	65	D	90	D
16	C	41	D	66	B	91	C
17	A	42	A	67	C	92	A
18	B	43	D	68	A	93	B
19	D	44	B	69	D	94	D
20	B	45	C	70	B	95	A
21	C	46	B	71	C	96	B
22	C	47	D	72	A	97	B
23	D	48	D	73	A	98	A
24	D	49	A	74	B	99	C
25	B	50	B	75	C	100	D



**ELECTRICAL ENGINEERING  
PROVISIONAL KEY**

**B**

Q.NO.	ANS	Q.NO.	ANS	Q.NO.	ANS	Q.NO.	ANS
1	B	26	D	51	A	76	B
2	C	27	B	52	C	77	A
3	D	28	C	53	D	78	B
4	C	29	B	54	A	79	B
5	A	30	C	55	B	80	A
6	C	31	A	56	C	81	A
7	A	32	D	57	D	82	A
8	D	33	D	58	B	83	C
9	C	34	B	59	C	84	D
10	D	35	C	60	B	85	C
11	B	36	C	61	B	86	B
12	C	37	A	62	C	87	D
13	D	38	A	63	B	88	C
14	A	39	A	64	D	89	B
15	B	40	C	65	A	90	D
16	C	41	B	66	D	91	B
17	D	42	B	67	A	92	B
18	A	43	A	68	D	93	B
19	A	44	B	69	A	94	B
20	B	45	C	70	C	95	C
21	B	46	C	71	D	96	A
22	C	47	C	72	D	97	D
23	A	48	C	73	A	98	A
24	D	49	D	74	A	99	D
25	D	50	A	75	C	100	A



**ELECTRICAL ENGINEERING  
PROVISIONAL KEY**

**C**

Q.NO.	ANS	Q.NO.	ANS	Q.NO.	ANS	Q.NO.	ANS
1	B	26	A	51	A	76	C
2	C	27	D	52	A	77	B
3	C	28	D	53	D	78	B
4	C	29	A	54	C	79	D
5	A	30	D	55	B	80	C
6	B	31	A	56	C	81	C
7	A	32	C	57	C	82	A
8	B	33	C	58	B	83	D
9	D	34	D	59	A	84	C
10	A	35	A	60	B	85	B
11	D	36	B	61	A	86	B
12	D	37	C	62	D	87	D
13	B	38	A	63	A	88	A
14	B	39	A	64	B	89	D
15	B	40	D	65	B	90	C
16	A	41	C	66	D	91	D
17	D	42	B	67	A	92	B
18	A	43	A	68	A	93	A
19	C	44	D	69	D	94	B
20	A	45	D	70	C	95	C
21	D	46	C	71	C	96	B
22	C	47	B	72	C	97	B
23	C	48	C	73	D	98	A
24	B	49	C	74	A	99	A
25	C	50	B	75	B	100	D



**ELECTRICAL ENGINEERING  
PROVISIONAL KEY**

**D**

Q.NO.	ANS	Q.NO.	ANS	Q.NO.	ANS	Q.NO.	ANS
1	B	26	C	51	D	76	B
2	C	27	B	52	D	77	A
3	A	28	B	53	D	78	C
4	B	29	B	54	C	79	B
5	A	30	D	55	A	80	A
6	C	31	D	56	D	81	C
7	C	32	B	57	A	82	C
8	A	33	C	58	B	83	A
9	B	34	C	59	C	84	B
10	D	35	C	60	D	85	C
11	A	36	C	61	B	86	D
12	D	37	D	62	D	87	A
13	C	38	A	63	B	88	A
14	D	39	C	64	C	89	B
15	C	40	C	65	C	90	B
16	A	41	A	66	C	91	D
17	B	42	D	67	B	92	B
18	D	43	A	68	A	93	B
19	A	44	B	69	A	94	D
20	C	45	B	70	B	95	D
21	D	46	A	71	A	96	C
22	A	47	C	72	D	97	B
23	B	48	D	73	C	98	A
24	A	49	A	74	D	99	D
25	A	50	B	75	C	100	A