TSSPDCL
Previous Paper
2018

PART – A

1. Maximum value of $f(x, y) = 3xy$ subject to the constraint $2x + y = 8$ is

   A) 20 B) 24

   C) 30 D) 36

2. Let S denote the surface of the cylinder $x^2 + y^2 = 4, -2 \le z \le 2$. Then $\iint_S \left(z - x^2 - y^2\right) dS =$

   A) 32π B) 64π

   C) -32π D) -64π

3. Suppose $f : [1, 2] \to »$ is a continuous function such that $f(2)f(1) < 0$. If is a sequence generated by bisection method as a result of approximating a zero a_0 of $f(x)$, then $|a_6 - a_0| \le$

   A) $\frac{1}{64}$ B) $\frac{1}{32}$

   C) $\frac{1}{16}$ D) $\frac{1}{8}$

4. Suppose $f(x, y) = x|y|$ is defined on $\{(x, y) : 1 \le x \le 2, -3 \le y \le 4\}$.
   If $|f(x, y_1) - f(x, y_2)| \le k|y_1 - y_2|$ then $k =$

   A) 1 B) 0.5

   C) 1.5 D) 2

5. The sum of eigen values of the matrix $\begin{bmatrix} 1 & 0 & 4 \\ 0 & 4 & 0 \\ 3 & 5 & -3 \end{bmatrix}$ is

   A) 5 B) 4

   C) 3 D) 2

6. If A is a square matrix of order three with its characteristic equation $x^3 - 2x^2 - x + 2 = 0$, then its determinant is

   A) -1 B) 2

   C) -2 D) 3

7. A curve $y = f(x)$ passes through the point (0, 5/2) and has slope xe^{-x^2} for the tangent at a point (x, y) on the curve. Then the equation of the curve is

   A) $y = 3 - \frac{1}{2}xe^{-x^2}$

   B) $y = \frac{5}{2} + xe^{-x^2}$

   C) $y = \frac{7}{2} - e^{-x^2}$

   D) $y = \frac{5}{2} - 2xe^{-x^2}$

8. The solution of $\frac{d^2x}{dt^2} + x = 0$ subject to the condition $x(0) = 1$ and $x'(0) = -1$ is

   A) $\cos t + \sin t$ B) $\sin t - \cos t$

   C) $\cos t - \sin t$ D) $\sin t + 2\cos t$

9. If X is a binomial variate with $n = 6$ and $p = 1/3$, then $\frac{P(X = 2)}{P(X = 4)} =$

   A) 4 B) 3

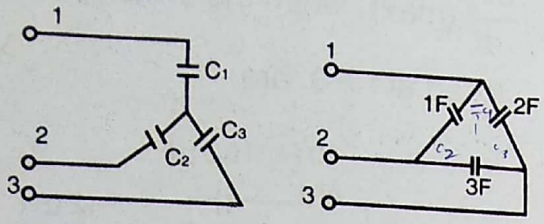
   C) 2 D) 5

10. The sum of mean and variance of a Poisson distribution is 8, then its standard deviation is

    A) 1 B) 2

    C) 3 D) 4

11. The two networks shown are equivalent. The values of C_1, C_2, C_3 are respectively, in Farads



A) $\frac{1}{3}, \frac{1}{2}, 1$ B) $\frac{11}{3}, \frac{11}{2}, 1$

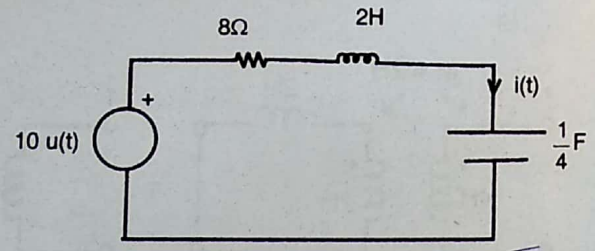
C) $1, \frac{1}{2}, \frac{1}{3}$ D) $\frac{11}{2}, 11, \frac{11}{3}$

12. In a graph, the number of independent loops is 6 and the number of independent cut sets is 5. The total number of branches in the graph is

A) 9 B) 12

C) 10 D) 11

13. The current response of the RLC circuit in the figure is



A) critically damped

B) under damped

C) over damped

D) purely oscillatory

14. The Laplace transform of the current in a network is given by

$$I(s) = \frac{10}{s(s+2)(s+5)}$$

Then $i(0^+)$ and $\frac{di}{dt}(0^+)$ are given by

A) 0, 1 B) 1.2, – 1

C) 0, 0 D) 1, 1

C

15. When a voltage $V_0 \sin\omega_0 t$ is applied to a pure inductor, an ammeter in the circuit reads I_0. If a voltage of $[V_0 \sin\omega_0 t + 2V_0 \sin 2\omega_0 t + 3V_0 \sin 3\omega_0 t + 4V_0 \sin 4\omega_0 t]$ is applied to the same inductor, the ammeter reads

A) 0

B) $10\, I_0$

C) $\sqrt{4^2+3^2+2^2+1}\; I_0$

D) $2\, I_0$

16. A single phase half wave diode rectifier with input voltage $10 \sin\omega t$ is feeding into a resistive load of 100 Ω. The rms value of the load current and the input power factor are respectively

A) 50 mA, 0.707

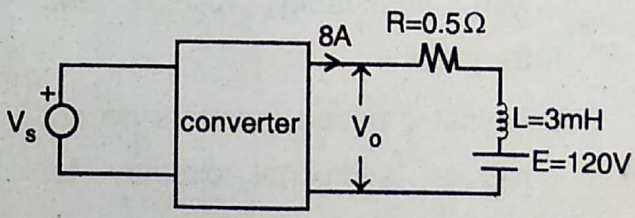
B) 10 mA, 0.707

C) 10 mA, 0.8

D) 50 mA, unity

17. A single phase full converter SCR bridge with a free wheeling diode is connected to a RLE load as shown.

$V_S = 230\sqrt{2} \sin 314t$



The average load current 8 A is constant over the working range.

The firing angle delay is

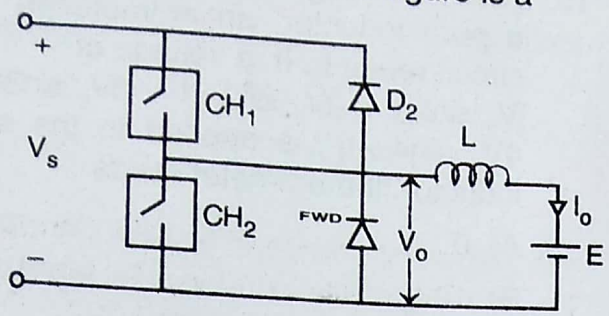
A) 30°

B) 36.8°

C) 60°

D) 53.2°

18. The circuit shown in the figure is a



A) Second quadrant or Type B chopper

B) Two quadrant Type A or Type C chopper

C) First quadrant or Type A chopper

D) Two quadrant Type B or Type D chopper

19. Consider the following statements with regard to inverters

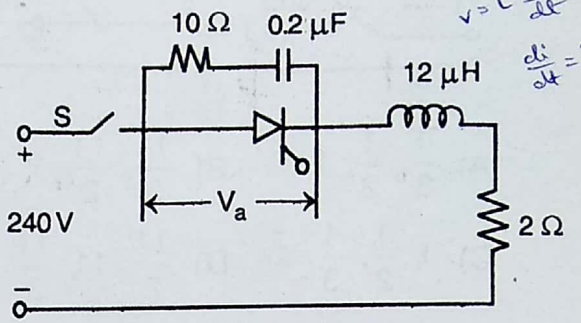
1. Line commutated inverters can function as isolated ac sources
2. Force commutated inverters can provide independent ac voltage with adjustable voltage and frequency
3. Thyrister based inverters do not require additional circuitry for commutation
4. IGBT, PMOSFET based inverters are more reliable, less costly and less complex.

The correct statements are

A) 1, 3 B) 1, 3, 4

C) 2, 4 D) 1, 4

20. For the circuit shown the $\frac{di}{dt}(max)$ and $\frac{dv_a}{dt}(max)$, when the switch S is closed at t = 0, are



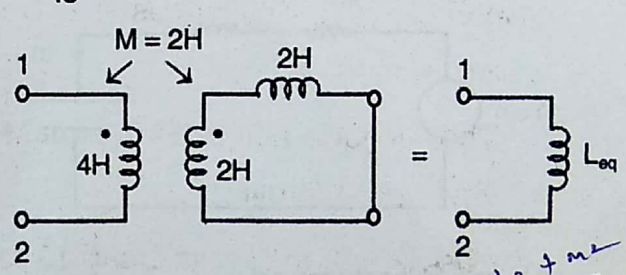
A) 10 A/μsec, 100 V/μsec

B) 20 A/μs, 200 V/μs

C) $20\sqrt{2}$ A/μsec, $200\sqrt{2}$ V/μsec

D) 10 A/μs, 200 V/μs

21. The value of L_{eq} in henries in the figure is



A) 3 B) 2

C) 8 D) 10

22. An iron cored inductance coil can be modelled, over a normal operating range of networks ,as

A) non-linear bilateral element

B) linear bilateral element

C) linear time varying element

D) non-linear time invariant element

23. The admittance locus of a two branch parallel circuit shown in fig. 1 is given in figure 2. Assuming $\omega = \sqrt{3}$ rad/sec, find the values of R_1, R_2 and C_2

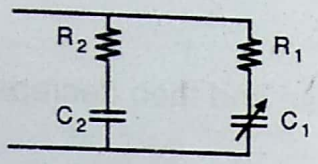


Fig. 1

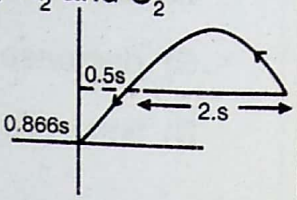


Fig. 2

A) $2\,\Omega, 2\,\Omega, \frac{2}{3}$F

B) $0.5\,\Omega, 2\,\Omega, \frac{3}{2}$F

C) $0.5\,\Omega, 0.5\Omega, \frac{2}{3}$F

D) $2, 0.5\,\Omega, \frac{3}{2}$F

24. Consider the following statements with respect to a high Q, series RLC circuit under resonance

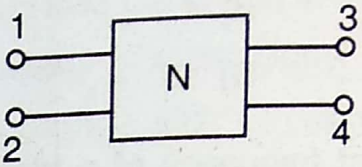
1. The voltage across R is equal to the applied voltage
2. The voltages across L and C are zero
3. The voltages across L and C are equal in magnitude
4. The voltages across L and C are maximum

Which of these statements are correct ?

A) 1 alone B) 1, 3 and 4

C) 1 and 3 only D) 1 and 2

25. A resistive two port symmetrical network N has $y_{11} = 0.5$ S, $y_{12} = -0.1$ S,

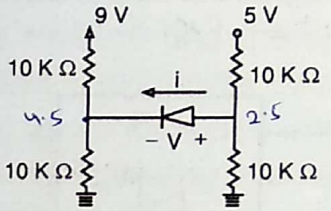


A current source of 5 A is connected at the terminals 1 and 2. The short circuit current at the terminals 3 and 4 is given by

A) 1 A B) 2 A

C) 3.2 A D) 2.4 A

26. Assuming the diodes in the circuit to be ideal, i and v in the circuit are respectively



A) 0 A, 2 V

B) 0.2 mA, 0 V

C) 0 A, –2 V

D) 0.2 mA, 2 V

27. What are the contents of the Accumulator when the 8085 microprocessor executes the program ?

MVI	B, 01H
MVI	A, FFH
ANA	B
MOV	B, A
PUSH	B
POP	PSW
MVI	A, 8EH
RAR	
RAR	

A) 3A H B) 3B H

C) 63 H D) A3 H

C

28. The number of comparators required to design a 4-bit flash ADC is

A) 2 B) 4

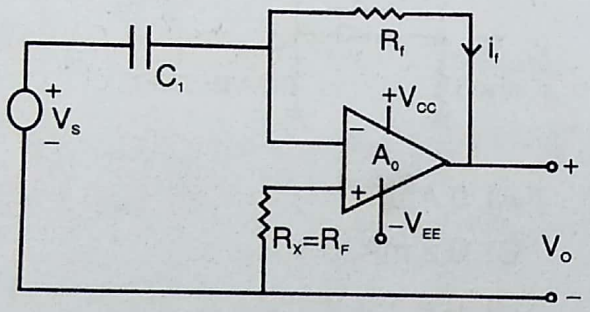
C) 7 D) 15

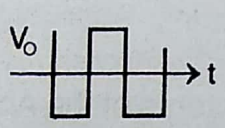
29. The highest frequency of a triangular wave of 20 V peak to peak amplitude that can be reproduced by an op-amp whose slew rate is $10\,V/\mu s$ will be

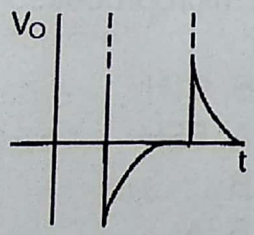
A) 50 kHz B) 150 kHz

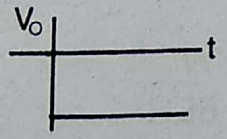
C) 250 kHz D) 350 kHz

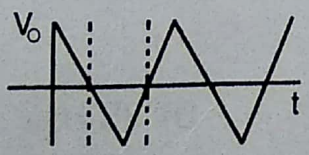
30. For the op-amp circuit shown, with square wave input, the output waveform will be



A)


B)


C)


D)


31. If the real power demand is suddenly increased, frequency of the system will

A) increase

B) remain same

C) decrease

D) first increase and then decrease

32. Two generators rated at 200 MW and 400 MW are operating in parallel. Their governor droop characteristics are respectively 4% and 5% from no load to full load. At no load, the system frequency is 50 Hz. When supplying a load of 600 MW, the system frequency is

A) 50 Hz B) 49 Hz

C) 48.7 Hz D) 47.7 Hz

33. The capacitor connected in series with the line is used to

A) enhance power factor

B) enhance power system capability

C) decrease the losses

D) decrease the power transfer

34. A loss of excitation protection scheme for large generating unit employs

A) under frequency relays

B) offset Mho relay

C) reactance relay

D) percentage differential relay

C

35. Equal area criterion is a method to determine

A) steady state stability

B) small signal stability

C) frequency stability

D) transient stability

36. The input voltage to the non inverting op-amp amplifier is V_s = 10sin 2000t. The source resistance R_s is negligible. If $R_F = 20\ k\Omega$, $R_1 = 5\ k\Omega$, $V_{CC} = +15$ V and $V_{EE} = -15$ V the peak voltages of output voltages are

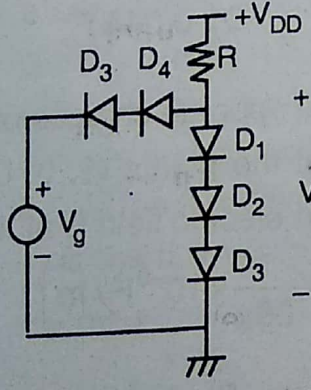
A) 50 V, –50 V

B) 15 V, –15 V

C) 40 V, – 40 V

D) 2.5 V, –2.5 V

37. The diode circuit shown in the figure has R = 30 kΩ and V_{DD} = 10 V, V_S = 5 V and diode drop V_D = 0.7 V. Then V_o will be



A) 2.1 V

B) 2.9 V

C) 3.6 V

D) 6.4 V

38. When 8085 microprocessor executes the following instructions, the number of times the loop is executed, is

Label	Instruction	
	LXI	B, 000BH
LOOP :	DCX	B
	MOV	A, B
	ORA	C
	JNZ	LOOP

A) 9

B) 10

C) 11

D) 12

39. A PMMC meter has a coil of area 200 mm^2. The flux density is 2 mwb/m^2 and the spring constant is 0.16×10^{-6} Nm/rad. If a deflection of 90° is to be provided when a current of 5 mA is flowing, the number of turns in the coil should be

A) 136

B) 126

C) 152

D) 96

40. Consider the following statements with regard to thermo-electric ammeters

1. They give correct rms value irrespective of frequency and waveform of the input
2. They are severely effected by stray magnetic fields
3. They are primarily designed for current measurements at high frequencies
4. They have low sensitivity

Which of these are correct ?

A) 2, 4

B) 3, 4

C) 1, 3, 4

D) 1, 3

C

41. Two unity feedback systems A and B with open loop transfer functions are

$$G_A(s) = \frac{9}{s(s+1)} \text{ \& } G_B(s) = \frac{16}{s(s+2)}$$

Which of the following statement is correct ?

A) System A has higher overshoot than system B

B) A has lower overshoot than B

C) A has lower settling time than B

D) Both have equal settling times

42. The gain margin of the system

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

A) 2.3 B) 3.6

C) 1.2 D) 6

43. The transfer function

$$T(s) = \frac{Y(s)}{V(s)} = \frac{1}{s^3 + 3s^2 + 2s + 10}$$

is represented in state variable form. The system matrix A is given by

A) $\begin{bmatrix} 0 & 0 & 1 \\ 0 & 1 & 0 \\ -10 & -2 & -3 \end{bmatrix}$

B) $\begin{bmatrix} 0 & 1 & 1 \\ 0 & 0 & 1 \\ -10 & -2 & -3 \end{bmatrix}$

C) $\begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ -10 & -2 & -3 \end{bmatrix}$

D) $\begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ -3 & -2 & -10 \end{bmatrix}$

44. Consider the following statements with respect to time and frequency responses of a second order system

1. Peak overshoot is indicative of the damping in the system.
2. Resonance peak depends on the damping and natural frequency.
3. Resonance frequency depends only on the damping in the system.
4. Resonance peak and resonance frequency can be used as performance measures in the design of control system.

The correct statements are

A) 1 and 4 B) 1, 2 and 4

C) 2 and 3 D) 3 and 4

45. A 3 V adaptor using a half wave rectifier must supply a current of 0.5 A with a maximum ripple of 300 mV. For a frequency of 50 Hz the minimum required smoothing capacitor is

A) 0.011 F B) 0.022 F

C) 0.033 F D) 0.044 F

46. Two equal and opposite charges of 2 nC are located at the points (1, 0, 0) and (–1, 0, 0). The electric field E at the origin is, $\left(\epsilon_0 = \frac{1}{36\pi} \times 10^{-9} \text{F/m}\right)$

A) 0 B) 54 V/m

C) 36 V/m D) 18 V/m

47. Find the thickness of the dielectric to be used between two conducting plates of area 6.28×10^{-3} m^2 with $\epsilon_R = 5$, $\epsilon_0 = \frac{1}{36\pi} \times 10^{-9}$ F/m, so that a capacitance of 2.5 nF is obtained.

A) 0.1 m

B) 10^{-2}m

C) 2.22×10^{-4}m

D) 1.11×10^{-4}m

48. Which of the following statements with regard to DC machine, are not correct ?

1. Armature reaction decreases the flux under the leading pole tip in a generator.
2. Resistance commutation is generally used in fractional kW machines.
3. The polarity of the interpole is opposite to the main pole ahead in the direction of rotation for a generator.

A) 1 and 3 B) 1 only

C) 2 and 3 D) 2 only

49. A separately excited DC machine supplies a load current of 50 A at a terminal voltage of 220 V. Its $R_a = 0.2\ \Omega$. This machine is run as a motor with the same terminal voltage and current at the same speed. If ϕ_m is the flux when run as a motor and ϕ_g is the flux when run as a generator, the ratio $\frac{\phi_m}{\phi_g}$, is

A) 1.11 B) 0.913

C) 0.8 D) 1.21

50. Consider the following statements.

1. A DC series motor is used where high starting torque is required.
2. A starter is used to provide high starting torque.
3. At higher loads a cumulatively compounded DC motor has higher torque than a shunt motor.

The correct statements are

A) 1 and 2 B) 1 and 3

C) 2 and 3 D) 1 only

51. A current transformer has a bar primary and a secondary of 200 turns. The core requires the equivalent m.m.f. of 100 A for magnetisation and 50 A for core loss. For a pure resistive burden the number of turns to be reduced in the secondary to get zero ratio error, for a secondary current of 5 A is

A) 0 B) 10

C) 15 D) 5

52. Consider a true RMS reading electronic voltmeter employing thermo-couples

1. Two thermo-couples are often used to overcome the non linear characteristic of the measuring thermo-couple
2. A PMMI type instrument is used for indication
3. Complex waveform signals can be measured
4. Average value is actually measured but the meter is calibrated for RMS values

The correct statements are

A) 1, 3 B) 1, 2

C) 2, 4 D) 2, 3

C

53. Current in a circuit is measured using a potentiometer. The voltage drop across a standard resistor of 0.1 Ω is balanced at 60 cm on the slide wire. A standard cell e.m.f. of 1.018 V is balanced at 50 cm. The current in the circuit is

A) 1.018 A
B) 10.18 A
C) 12.216 A
D) 1.221 A

54. Consider the following statements.

1. BJT is a current controlled device whereas IGBT is a voltage controlled device.
2. BJT and IGBT have low input impedance whereas PMOSFET has higher input impedance.
3. IGBTs are available at higher voltage ratings than PMOSFETs because of increment in ON state voltage drop is less in IGBT.
4. IGBT and PMOSFETs have different substrate structures.

The correct statements are

A) 1, 2
B) 1, 3, 4
C) 3, 4
D) 2, 3, 4

55. The rise time t_r in BJT is defined as the time during which collector current rises from

A) 0.1 I_{CS} to 0.8 I_{CS}
B) 0.2 I_{CS} to 0.9 I_{CS}
C) 0.1 I_{CS} to I_{CS}
D) 0.1 I_{CS} to 0.9 I_{CS}

56. A transformer of rating 2200/220 V, 22 kVA has total losses of 1 kW at full load and unity power factor. If it is reconnected as an autotransformer with a supply voltage of 2200 V and a secondary voltage of 1980 V, the efficiency at full load, unity p.f. will be

A) 0.965
B) 0.995
C) 0.97
D) 0.927

57. A 220/110 V, 50 Hz transformer is connected to a supply on the high voltage side. If it is

i. Operated at a primary voltage of 220 V, and 5% less frequency, the secondary no load voltage was found to be E_{21},

ii. Operated at a primary voltage of 110 V and 50% less frequency, the secondary voltage was found to be E_{22}.

The ratio $\frac{E_{21}}{E_{22}}$ will be

A) 0.5
B) 1.5
C) 1.0
D) 2

58. Which of the following statements are correct with respect to a single phase transformer ?

1. The primary ampere turns are significantly more than the secondary ampere turns.
2. The flux in the iron core remains the same for no load and full load conditions.
3. When two single phase transformers are operated in parallel, the transformer having greater leakage impedance shares more load.

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

59. Consider the following statements.

1. Transformer is a doubly excited magnetic system.
2. Synchronous motor is a doubly excited magnetic system.
3. Relay is a singly excited magnetic system.

The correct statements are

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

60. A 4 pole, 3 phase induction motor has a rotor resistance of 0.04 Ω and standstill reactance of 0.2 Ω per phase. The slip at which maximum torque occurs is

A) 5 B) 0.2

C) 1 D) 0.04

61. In rotor angle of stability, condition for stability is

A) $dP/d\delta = 0$ B) $d\delta/dt = 0$

C) $dV/dt = 0$ D) $dQ/d\delta = 0$

62. A transmission line is operating with a phase shift of 80° between two ends. If the load is suddenly increased

A) The phase displacement will increase

B) The phase displacement will decrease

C) The phase displacement will not change

D) The surge impedance will increase

63. If the regulation R = 1% and damping coefficient D = 0.8, the change in generation of the area for a drop in frequency of 0.0015 p.u. in p.u. is

A) 0.0015 B) – 0.0015

C) 0.15 D) – 0.15

64. In LLG fault, the relation between sequence voltages is

A) $V_{a_1} = V_{a_2}$ B) $V_{a_1} = V_{a_2} = V_{a_0}$

C) $V_{a_1} \neq V_{a_2}$ D) $V_{a_1} \neq V_{a_0}$

65. A large power system is represented by Thevenin's equivalent. The E_{Th} and Z_{Th} are $0.9\angle 0$ p.u. and $0.25\angle 90^\circ$ p.u. respectively. If a shunt capacitor bank is connected to raise the bus voltage to 1.0 p.u., the MVAR rating of the capacitor bank is (assume base MVA of 100 and base kVA of 138)

A) 10 B) 20

C) 30 D) 40

66. Consider the discrete system $y(n) = a_1 x(n-1) + a_2 x(n) + a_3 x(n+1)$ The system is

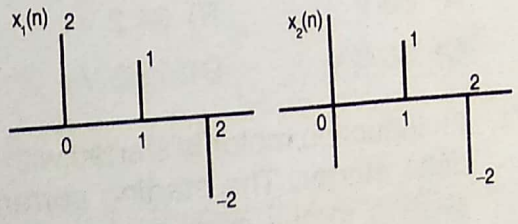
A) linear , causal

B) non-linear, causal

C) linear, non-causal

D) non-linear, non-causal

67. Convolution of two sequences shown in the figures, is the sequence



A) (0 2 – 3 – 4)

B) (2 0 – 3 – 4 0)

C) (1 – 2 3 4)

D) (0 2 – 3 – 4 – 4 0)

68. If f(t) and F(ω) are Fourier transform pairs, then consider the following statements

1. F(ω) exists if f(t) has finite energy
2. |F(ω)| is an odd function
3. f(t – T) transforms to $F(\omega)e^{j\omega t}$
4. $f(t)e^{j\omega_0 t}$ transforms to $F(\omega - \omega_0)$

Which of these statements are correct ?

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

69. The z-transform and the ROC of the function $f(n) = a^n u(n)$ are

A) $\frac{1}{1-az^{-1}}, |z| > |a|$

B) $\frac{1}{1-az^{-1}}, |z| < |a|$

C) $\frac{1}{1+az^{-1}} |z| > |a|$

D) $\frac{1}{1+az^{-1}}, |z| < |a|$

70. A 40 nC point charge is placed at the origin. The potential at a point (0, – 6, 0) is $\left(\epsilon_0 = \frac{1}{36\pi} \times 10^{-9} F/m\right)$

A) 60 V B) 64.2 V
C) 36.8 V D) 12.3 V

71. An induction motor is started with a star delta starter. The starting current and starting torque compared to direct on line starting are reduced by

A) $\frac{1}{3}, \frac{1}{\sqrt{3}}$ B) $\frac{1}{\sqrt{3}}, \frac{1}{3}$

C) $\frac{1}{3}, \frac{1}{3}$ D) $\frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}$

72. Consider a shaded pole induction motor.

1. The motor runs in the direction of unshaded part of the pole to shaded part of the pole.
2. The direction of rotation of this motor can be changed.
3. This motor is highly noisy.

Which of these statements are correct ?

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

73. Consider the following statements with regard to synchronous machines.

1. The armature and field mmfs rotate with same speed.
2. For zero power factor lagging current the armature mmf demagnetizes the main field in an alternator.
3. For zero power factor leading current, the nature of armature mmf is magnetizing in the motor.
4. For a salient pole machine $X_q = X_s$.

The correct statements are

A) 1, 2 B) 2, 3
C) 3, 4 D) 1, 2, 3

74. Consider the following statements with regard to synchronous machine.

1. Damper windings are used to prevent hunting.
2. X_s calculated at higher exciting currents is larger than that at lower excitations.
3. Synchronous motors are preferred for driving loads requiring high power at low speeds.
4. Star delta starters are used to start synchronous motors.

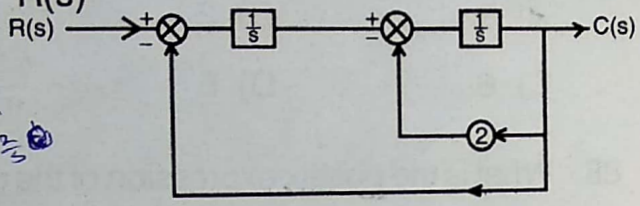
The correct statements are

A) 1, 3 B) 1, 4
C) 2, 3 D) 2, 3, 4

75. Compared to the Newton-Raphson (Polar) load flow, the fast decoupled load flow
A) will take lesser number of iterations
B) will take more number of iterations
C) solution can be obtained directly without iterations
D) will take same number of iterations

76. The sequence reactance of an equipment is as follows
$X_1 = X_2$ and $X_0 = 3X_1$
The element is
A) synchronous machine
B) transformer
C) transmission line
D) induction motor

77. The block diagram of a system is shown in the figure. The transfer function $\frac{C(s)}{R(s)}$ is given by



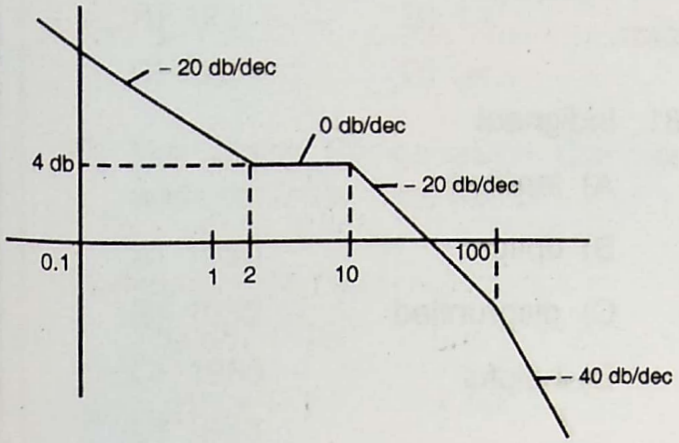
A) $\frac{s}{s^2+2s+1}$ B) $\frac{1}{s^2+2s+2}$
C) $\frac{s}{s^2+2s+2}$ D) $\frac{1}{s^2+2s+1}$

78. Consider the following statements regarding root locus of a system.
1. Break away points always occur on the negative real axis.
2. A point on the real axis lies on the root locus if the total number of real poles and zeros to the right of the point is even.
3. The number of branches of root locus going to infinity is equal to the difference between the number of open loop poles and zeros.
4. The value of K on the root locus can be determined by using magnitude criterion

Which of these statements are not correct ?
A) 3 and 4 B) 1 and 3
C) 1 and 2 D) 1, 3 and 4

C

79. The asymptotic Bode plot of a system G(s) is shown in the figure



The transfer function G(s) is

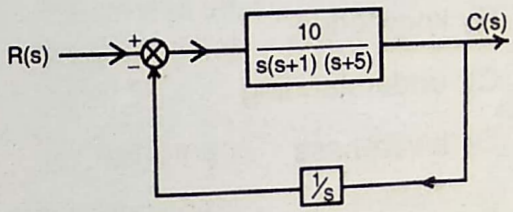
A) $\frac{10^4(s+2)}{s(s+10)(s+100)}$

B) $\frac{1580(0.5s+1)}{s(0.1s+1)(0.01s+1)}$

C) $\frac{1580(s+2)}{s(s+10)(s+100)}$

D) $\frac{1000s(s+2)}{(s+10)(s+100)}$

80. The steady state error constants K_p, K_v, K_a of the following system are respectively



A) 0, 10, ∞
B) 0, ∞, 10
C) ∞, ∞, 2
D) 0, 2, ∞

PART – B

Choose appropriate **synonyms** of the following words.

81. Indignant

A) terrified

B) uptight

C) disgruntled

D) helpful

82. Unique

A) simple

B) allowed

C) alike

D) special

83. Determine

A) contemplate

B) ascertain

C) think

D) ponder

84. Consciousness

A) vision

B) knowledge

C) understanding

D) awareness

85. Let A be a set with n distinct elements. How many different binary relations on A are possible ?

A) n*n B) n^n

C) 2^n D) 2^k where $k = n^2$

86. What is the largest and smallest integers that can represent using signed two's complement representation for 8-bit binary number ?

A) – 128 to + 127

B) – 127 to + 128

C) – 255 to + 256

D) – 256 to + 255

87. How many maximum number of distinct binary trees can be formed with only 3 nodes ?

A) 3 B) 2

C) 6 D) 5

88. What is the postfix expression of the given infix expression : a + b*c – d/g ?

A) abcdg/–*+ B) abc*+dg/ –

C) abc+*dg/– D) abc*dg/–+

89. The first woman of Indian origin who undertook a space journey

A) Sunita Williams

B) Kalpana Chawla

C) Darshan Ranganath

D) Avani Chaturvedi

90. The First Session of Indian National Congress was held at

A) Bombay B) Madras

C) Calcutta D) Delhi

91. Who was the First recepient of Bharat Ratna ?

A) C.V. Raman

B) C. Rajgopalachari

C) Dr. Radhakrishnan

D) Dr. Rajendra Prasad

92. How many banks were nationalized in 1969 ?

A) 14 B) 16

C) 20 D) 18

93. The average age of eight boys is 16 years. If the age of one more boy is added to it, the average age increases by 1 year. What is the age of that boy ?

A) 20 years B) 24 years

C) 25 years D) 18 years

94. What value should come in the place of question mark (?) in the given number series ?

24, 37, 54, 75, 100, 129, ?

A) 157 B) 158

C) 161 D) 162

95. The cost of 15 kgs, of rice is Rs. 720 and the cost of 16 kgs. of wheat is Rs. 576. What is the difference between the cost of 45 kgs. of rice and 56 kgs. of wheat ?

A) 148 B) 136

C) 144 D) 150

96. In how many different ways can the letters of the word 'TEST' be arranged ?

A) 12 B) 10

C) 36 D) 24

97. First States Reorganization Commission was established in the year of

A) 1950

B) 1953

C) 1956

D) 1958

98. 'Memoirs of Hyderabad Freedom Struggle' book is written by

A) Jamalapuram Keshavarao

B) Swami Ramanand Tirtha

C) B. Yella Reddy

D) Ravi Narayan Reddy

99. Komaram Bheem, who fought against the Asaf Jahi Dynasty for the liberation of Hyderabad belongs to

A) Bhil tribe

B) Jatapus tribe

C) Gond tribe

D) Kulia tribe

100. Which was the first district that witnessed beginning of Mulki Movement in 1952 ?

A) Karimnagar B) Nizamabad

C) Warangal D) Hyderabad

TS SPDCL AE (Electrical) 2018- Answer Key

S.no	SET - C
1	B
2	D
3	A
4	D
5	D
6	C
7	No Answer
8	C
9	A
10	B
11	No Answer
12	D
13	C
14	C
15	D
16	A
17	D
18	B
19	C
20	B
21	A
22	D
23	C
24	C
25	A
26	C
27	C
28	D
29	C
30	B
31	C
32	D
33	B
34	B
35	D
36	B
37	A
38	C
39	B
40	D
41	A
42	D
43	C

44	A
45	C
46	C
47	D
48	C
49	B
50	B
51	B
52	A
53	C
54	B
55	D
56	B
57	A
58	B
59	B
60	B
61	B
62	A
63	C
64	B
65	D
66	C
67	No Answer
68	C
69	A
70	A
71	C
72	D
73	A
74	A
75	B
76	C
77	D
78	C
79	C
80	C
81	B
82	D
83	B
84	D
85	D
86	A
87	D
88	B
89	B
90	A

91	A, B, C
92	A
93	C
94	D
95	C
96	A
97	B
98	B
99	C
100	C

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