Code : 12555

Question Booklet No. **539368**

Max. Marks: 100

Question Paper Code: **D**

Q.P. BOOKLET (ELL)

Hall Ticket No.	OMR Answer Sheet No.

Name of the Candidate : _____

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Read the following instructions carefully before answering the questions.

1. The Question Paper Booklet consist of 20 pages including Cover Sheet.

2. This Booklet consist of 100 multiple choice objective type questions to be answered in 120 minutes. Each Question carries one mark. There are no negative marks for wrong answers.

3. Verify your Question Paper Booklet carefully for the pages and questions. If any discrepancy is found, ask the Invigilator to replace it with the new one.

4. Fill in the required particulars on the Question Paper Booklet with Blue / Black pen only.

5. Before answering the questions on the OMR Answer Sheet, read the instructions printed on the OMR sheet carefully.

6. Answer all the questions on the OMR Answer Sheet using only HB Pencil.

7. Calculators, Pagers, Mobile Phones, etc., are not allowed into the Examination Hall.

8. Rough work is to be done in the space provided for the purpose in the Question Paper Booklet only.

9. Handle OMR Answer Sheet carefully and do not fold or tamper with it.

10. No part of the Question Paper Booklet should be detached under any circumstances.

11. The Question Paper Booklet and OMR Answer Sheet should be handed over to the Invigilator before leaving the Examination Hall.

ROUGH WORK

QUESTIONS

1. The effect of stray magnetic fields on the actuating torque of a portable instrument is maximum when the operating field of the instrument and the stray fields are

   A) Perpendicular   B) Parallel

   C) Inclined at 60°   D) Inclined at 30°

2. A reading of 120 is obtained when a standard inductor was connected in the circuit of a Q-meter and the variable capacitor is adjusted to a value of 300 pF. A lossless capacitor of unknown value C_x is then connected in parallel with the variable capacitor and the same reading was obtained when the variable capacitor is readjusted to a value of 200 pF. The value of C_x in pF is

   A) 100   B) 200   C) 300   D) 500

3. A voltage signal 10 Sinwt is applied to the circuit with ideal diodes, as shown in figure. The maximum and minimum values of the output waveform v_{out} of the circuit are respectively
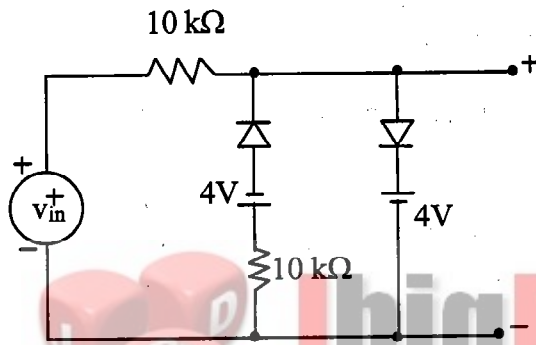

   A) +10 V and -10V   B) +4V and -4 V

   C) +7 V and -4 V   D) +4 V and -7 V

4. The Boolem expression $x'yz' + x'y'z + xyz' + xyz + xy'z$ can be simplified to

   A) $xz' + x'z + yz$ B) $xz + y'z + yz'$

   C) $x'y + yz + xz$ D) $x'y' + yz' + x'z$

5. The frequency of the clock signal applied to the rising edge triggered D flip-flop shown in figure is 10 KHz. The frequency of the signal at Q is
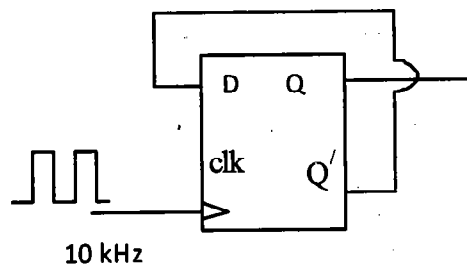

   A) 10 KHz   B) 2.5 KHz   C) 20 KHz   D) 5 KHz

3

6. The output voltage Vo of the Schmitt trigger shown in figure swings between +15V and -15V. Assume that the operational amplifier is ideal. The output will change from +15 V to -15V when the instantaneous value of the input sine wave is
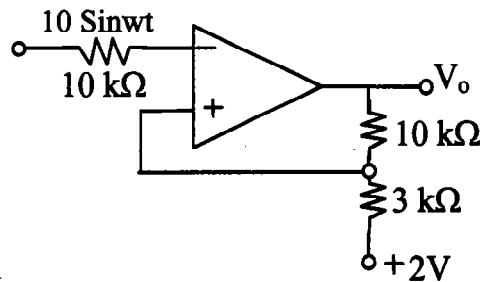
A) 5 V in the positive slope only

B) 5 V in the negative slope only

C) V in the positive and negative slopes

D) 3 V in the positive and negative slopes

7. For the circuit shown in figure, the Boolean expression for the output y in terms of inputs P, Q, R and S is
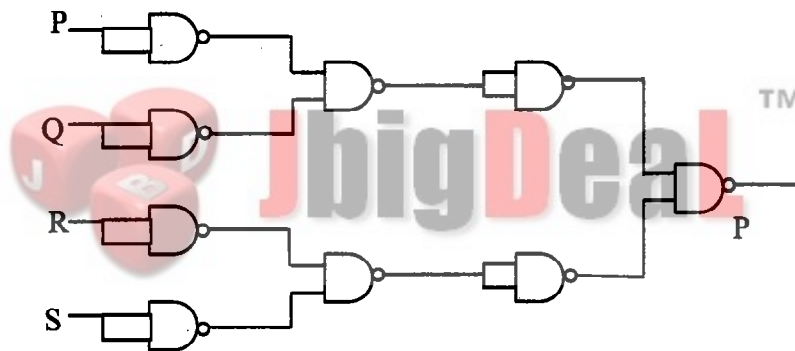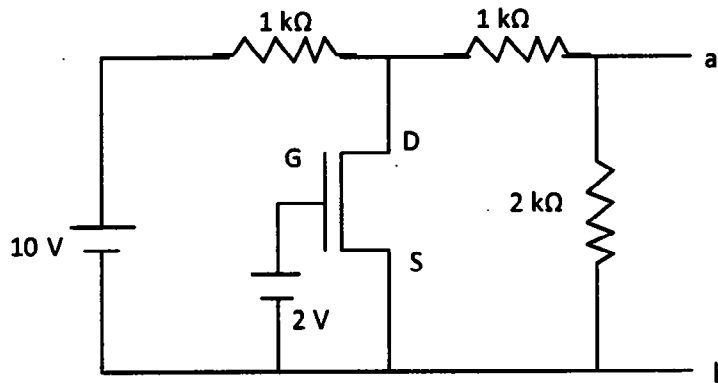

A) $P' + Q' + R' + S'$ B) $P + Q + R + S$

C) $(P' + Q') (R' + S')$ D) $(P + Q) (R + S)$

8. Assume that D1 and D2 in figure are ideal diodes. The value of current I is
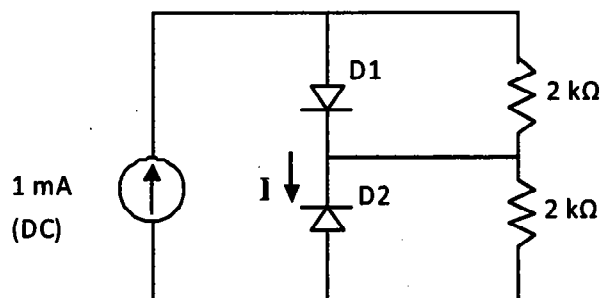
A) 0 mA   B) 0.25 mA   C) 0.5 mA   D) 1.0 mA

9. Assume that the n-channel MOSFET shown in figure is ideal and that its threshold voltage is +1.0 V. The voltage V_{ab} between nodes a and b is

A) 5 V   B) 2 V   C) 1 V   D) 0V

10. An amplifier without feedback has a gain of 1000. The gain with a negative feedback of 0.009 is

A) 10   B) 100   C) 125   D) 900

11. If the contents of an accumulator are Ex-ORed with itself and placed in the accumulator itself, then
    A) Carry flag will be set
    B) The accumulator contains all 1's
    C) The zero flag is set
    D) The accumulator contents are shifted left by one bit

12. An operational amplifier has an open loop gain of 200,000. Its output exhibits saturation at 10V. The threshold differential voltage of the amplifier is

A) 25 micro-volt   B) 50 micro-volt

C) 5 Volts   D) 10 volts

13. The number of comparators required in a 3-bit comparator type analog to digital converter is

A) 2   B) 3   C) 7   D) 8

14. A thyristor (SCR) turns off when the

    A) Gate pulse is removed
    B) Gate pulse is applied
    C) Thyristor current is below halding value
   D) Anode voltage is made negative

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15. Turn-on of a thyristor (SCR) takes place when

    A) Anode to cathode voltage is positive

    B) Anode to cathode voltage is negetive

    C) Positive current is applied to gate

    D) Anode to cathode voltage is positive and postive current pulse is applied to gate

16. A triac is a device which acts as a

    A) Diode in forward direction and thryristor in the reverse direction

    B) Thyristor in both directions

    C) Diode in both directions

    D) Thyristor in forward direction and diode in reverse direction

17. A GTOSCR

    A) Requires a special turn-off circuit like the communication circuit of a thyristor (SCR)

    B) Can be turned off by removing the gate pulse

    C) Can be turned off by giving a negative pulse to the gate

    D) Can be turned off by giving a positive gate pulse to the gate

18. A free-wheeling diode in a phase controlled converter

    A) Deceases the possibility of discontinuous conduction in the load

    B) Increases the possibility of discontinuous conduction in the load

    C) Reduces the power factor and causes over voltages

    D) Causes over voltages

19. The ripple content of load current of a converter feeding RL load is decided by

    A) Load resistance alone

    B) Load inductance alone

    C) Both load resistance and load inductance

    D) Neither resistance nor inductance

20. Which power device of the following is not a current triggered device?

    A) Thyrisotr   B) GTO   C) triac   D) MOSFET

21. The number of p-n junctions in a thyristor are

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

22. The function of snubber circuit across a SCR is to

   A) Eliminate dv/dt   B) Increase dv/dt

   C) Reduce dv/dt   D) Keep transient over voltage at a constant value

23. In a thyristorised converter a free wheeling diode is used to
   A) Add to the conduction current of the thyristor
   B) Oppose the thyristor conduction
   C) Conduct current during the off period of the thyristor
   D) Protect the thyristor by providing a shunt path

24. In d.c. choppers, for periodic time T, the output voltage can be controlled by frequency modulation
   by varying
   A) T, keeping t_{on} constant
   B) t_{on}, keeping T constant
   C) T, keeping t_{off} constant
   D) t_{off}, keeping T constant

25. For speed control of a.c. drive, the preferred method using thyristors is
   A) Phase control
   B) Integral cycle control
   C) Single pulse PWM control
   D) Sinusoidal PWM control

26. An inverter converts
   A) d.c. voltage to variable d.c. voltage
   B) a.c. voltage to d.c. voltage
   C) d.c. voltage to a.c. voltage of constant frequency
   D) d.c. voltage to a.c. voltage of variable frequency

27.   In a series RLC circuit at resonance, the magnitude of the voltage developed across the capacitor

   A) Is always zero
   B) Can never be greater than the input voltage
   C) Can be greater than the input voltage, however, it is 90° out of phase with the input voltage
   D) Can be greater than the input voltage, and is in phase with the input voltage

28.   Two incandescent light bulbs of 40 W and 60 W rating are connected in series across the mains, then

   A) The bulbs together consume 100 W
   B) The bulbs together consume 50 W
   C) The 60 W bulb glows brighter
   D) The 40 W bulb glows brighter

29.   A unit step voltage is applied at t = 0 to a series RL circuit with zero initial conditions

   A) It is possible for the current to be oscillatory
   B) The voltage across the resistor at t = O$^+$ is zero
   C) The energy stored in the inductor in the steady state is zero
   D) The resistor current eventually falls to zero

30.   Given two coupled inductors L_1 and L_2 their mutual inductance M satisfies
   A) $M = \sqrt{L_1^2 + L_2^2}$
   B) $M > \dfrac{\left(L_1 + L_2\right)}{2}$
   C) $M > \sqrt{L_1 L_2}$
   D) $M \le \sqrt{L_1 L_2}$

31.   A passive two port network is in a steady state. Compared to its input, the steady state output can never offer

   A) Higher voltage
   B) Lower impedance
   C) Greater power
   D) Better regulation

32.   The minimum number of wattmeter(s) required to measure 3-phase, 3-wire balanced or unbalanced power is
   A) 1   B) 2   C) 3   D) 4

8

33. Consider the star network shown in figure. The resistance between terminals A and B with C open is 6 ohms, between terminals B and C with A open is 11 ohms and between terminals C and A with B open is 9 ohms. Then R_A, R_B, R_C respectively is
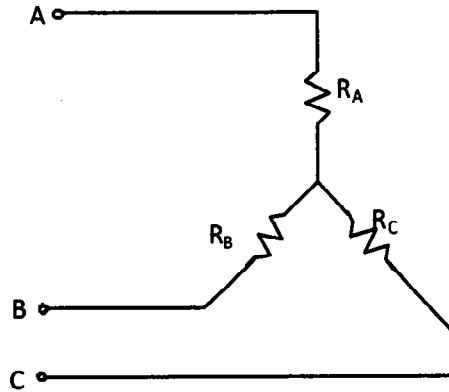
A) 4, 2, 5   B) 2, 4, 7   C) 3, 3, 4   D) 5, 1, 10

34. A voltage wave form $v(t) = 12t^2$ is applied across a 1H inductor for $t \geq 0$. With initial current through it being zero. The current through the inductor for $t \geq 0$ is given by

A) 12t   B) 24 t   C) $12t^3$ D) $4t^3$

35. A two port device is defined by the following pair of equations: $i_1 = 2v_1 + v_2$ and $i_2 = v_1 + v_2$. Its impedance parameters $(z_{11}, z_{12}, z_{21}, z_{22})$ are given by

A) (2, 1, 1, 1)   B) (1, -1, -1, 2)

C) (1, 1, 1, 2)   D) (2, -1, -1, 1)

36. The period of the signal $x(t) = 8 \sin (0.8\pi t + \dfrac{\pi}{4})$ is

A) 0.4π s   B) 0.8π s   C) 1.25 s   D) 2.5 s

37. The switch in the circuit has been closed for a long time. It is opened at $t = 0$. At $t = 0^+$, the current through the 1 micro farad capacitor is
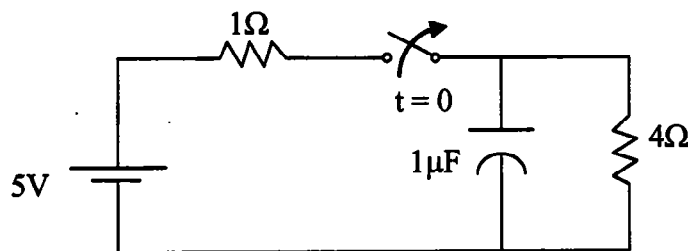
A) 0A   B) 1A   C) 1.25A   D) 5A

38. As shown in the figure, 1 ohm resistance is connected across a source that has a load line $v + i = 100$. The current through the resistance is
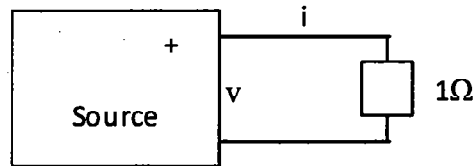
A) 25 A   B) 50 A   C) 100 A   D) 200A

39. The number of chords in the graph of the given circuit will be
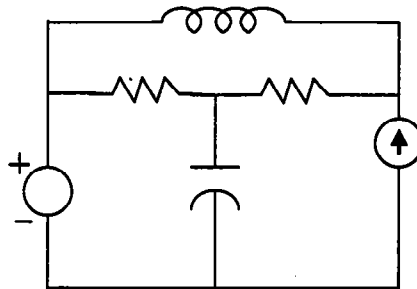
A) 3   B) 4   C) 5   D) 6

40. The time constant for the given circuit is
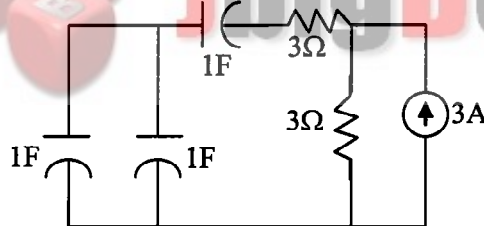
A) $\dfrac{1}{9}$S   B) $\dfrac{1}{4}$S   C) 4S   D) 9S

41. Assuming ideal elements in the circuit shown, the voltage v_{ab} will be

A) -3V   B) 0V   C) 3V   D) 5V

10
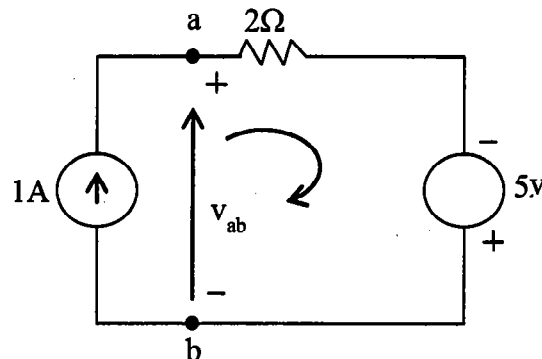
42. The core flux of a practical transformer with a resistive load

A) Is strictly constant with load changes
B) Increases linearly with load
C) Increases as the square root of the load
D) Decrease with increased load

43. The phase sequence of a three phase alternator will reverse, if

A) The field current is reversed keeping the direction of rotation same
B) The field current remains the same but the direction of rotation is reversed
C) The field current is reversed and the number of poles is doubled
D) The number of poles is doubled without reversing the field current

44. The function of oil in a transformer is to provide

A) Insulation and cooling
B) Protection against lightning
C) Protection against short circuit
D) Lubrication

45. A cylindrical rotor synchronous motor is switched on to the supply with its field windings shorted on themselves, the motor will

A) Not start
B) Start but will not run at synchronous speed
C) Start as an induction motor and then run as a synchronous motor
D) Start and run as a synchronous motor

46. A 4-pole lap-wound DC generator has a developed power of P watts and brush voltage of E volts. Two adjacent brushes of the machine are removed as they are worn out. If the machine operates with the remaining brushes, the developed voltage and power that can be obtained from the machine are:

A) E, P   B) $E/_2$, $P/_2$ C) E, $P/_4$ D) E, $P/_2$

47. Starting torque can be obtained in the case of a single phase induction motor with identical main and auxiliary windings by connecting

A) A capacitor across the mains
B) A capacitor in series with the machine
C) A capacitor in series with the auxiliary winding
D) The main and auxiliary winding in series

48. A 400V/100 V, 10 KVA two-winding transformer is reconnected as an auto-transformer across a suitable voltage source. The maximum rating of such an arrangement could be

A) 50 KVA   B) 15 KVA   C) 12.5 KVA   D) 8.75 KVA

49. If an induction machine is run at above synchronous speed, it

A) Acts as a synchronous motor
B) Acts as an induction generator
C) Acts as an induction motor
D) Would get damaged

50. The low voltage winding of a 400/230 V, 1-phase, 50 Hz transformer is to be connected to a 25 Hz supply. In order to keep the magnetization current at the same level as that for normal 50 Hz supply, at 25 Hz the supply voltage should be

A) 230 V   B) 115 V   C) 460 V   D) 65 V

51. A single-phase transformer has a turns ratio of 1:2 and is connected to a purely resistive load as shown in the figure. The magnetizing current drawn is 1A, and the secondary current is 1A. If core losses and leakage reactances are neglected, the primary current is

1:2
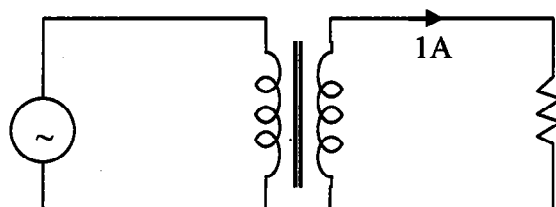
A) 1.41A   B) 2 A   C) 2.24 A   D) 3 A

52. A separately excited d.c. machine is coupled to a 50 Hz, three-phase, 4-pole induction machine as shown in the figure. The dc machine is energized first and the machines rotate at 1600 rpm. Subsequently the induction machine is also connected to a 50 Hz, three phase source, the phase sequence being consistent with the direction of rotation. In steady state

DC Machine   Induction Machine   50 Hz
                    4 pole, 50 Hz   Balanced three
                                               phase supply
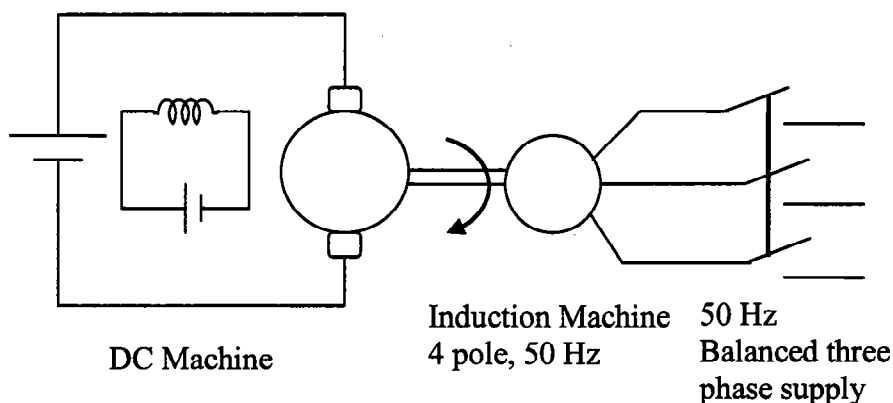
A) Both machines act as generators
B) DC machine acts as generator and induction machine acts as motor
C) DC machine acts as a motor and the induction machine acts as a generator
D) Both machines act as motors

53. A 4-point starter is used to start and control the speed of a

   A) DC shunt motor with armature resistance control
   B) DC shunt motor with field weakening control
   C) DC series motor
   D) Thyristor controlled d.c. motor

54. In a transformer, zero voltage regulation at full load is

   A) Not possible
   B) Possible at unity power factor load
   C) Possible at leading power factor load
   D) Possible at lagging power factor load

55. In transformers, which of the following statements is valid?

   A) In an open circuit test, copper losses are obtained while in short circuit test, core losses are obtained
   B) In an open circuit test, current is drawn at high power factor
   C) In a short circuit test, current is drawn at zero power factor
   D) In an open circuit test, current is drawn at low power factor

56. For a single phase capacitor start induction motor, which of the following statements is valid?

   A) The capacitor is used for power factor improvement
   B) The direction of rotation can be changed by reversing the main winding terminals
   C) The direction of rotation cannot be changed
   D) The direction of rotation can be changed by interchanging the supply terminals

57. During hunting of synchronous motor

   A) Negative phase sequence currents are generated
   B) Harmonics are developed in the armature current
   C) Damper bars develop torque
   D) Field excitation increases

58. When the supply voltage to an induction motor is reduced by 10%, the maximum torque will decrease by about

   A) 5%   B) 10%   C) 20%   D) 40%

59. An induction motor having full load torque of 60 Nm when delta connected develops a starting torque of 120 Nm. For the same supply voltage if the motor is changed to star connection, the starting torque developed will be

   A) 40 Nm   B) 60 Nm   C) 90 Nm   D) 120 Nm

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60. The torque speed characteristic of a repulsion motor resembles which of the following d.c. motor characteristics

A) Separately excited
B) Shunt
C) Series
D) Compound

61. Which type of motor is most suitable for computer printer drive?

A) Reluctance motor
B) Hysteresis motor
C) Shaded pole motor
D) Stepper motor

62. In case of split phase motor, the phase shift between currents in the two windings is around

A) 30º
B) 70º
C) 90º
D) 120º

63. A 500 MVA, 11 KV synchronous generator has 0.2 p.u. synchronous reactance. The p.u. synchronous reactance on the base values of 100 MVA and 22 KV is

A) 0.16
B) 0.01
C) 4.0
D) 0.25

64. For a fault at the terminals of a synchronous generator, the fault current is maximum for a

A) 3-phase fault
B) 3-phase to ground fault
C) Line to ground fault
D) Line to line fault

65. A 100 MVA, 11 KV, 3-phase, 50 Hz, 8-pole synchronous generator has an inertia constant H equal to 4 seconds. The stored energy in the rotor of the generator at synchronous speed will be

A) 100 MJ
B) 400 MJ
C) 800 MJ
D) 12.5 MJ

66. The use of high speed circuit breakers
A) Reduces the short circuit current
B) Improves system stability
C) Decreases system stability
D) Increases the short circuit current

67. Bundled conductors are employed to improve the
A) Appearance of the transmission line
B) Mechanical stability of the line
C) Current carrying capacity of the line
D) Corona performance of the line

68. During a disturbance on a synchronous machine, the rotor swings from A to B before finally settling down to a steady state at point C on the power angle curve. The speed of the machine during oscillation is synchronous at point(s).

A) A and B
B) A and C
C) B and C
D) Only at C

69. If the reference bus is changed in two load flow runs with same system data and power obtained for reference bus taken as specified P and Q in the latter run, the system losses
    A) Will be unchanged but complex bus voltages will change
    B) Will change but complex bus voltage remain unchanged
    C) As well as complex bus voltage will changed
    D) As well as complex bus voltage will be unchanged

70. Resistance switching is employed in
    A) All breakers   B) Bulk oil breakers
    C) Minimum oil breakers   D) Air blast circuit breakers

71. Which material is used in controlling chain reaction in a nuclear reactor?
    A) Thorium   B) Uranium   C) Boron   D) Beryllium

72. The concept of an electrically short, medium and long line is primarily based on the
    A) Nominal voltage of the line
    B) Physical length of the line
    C) Wave length of the line
    D) Power transmitted over the line

73. In a biased differential relay, the bias is defined as the ratio of
    A) Number of turns of restraining coil and operating coil
    B) Operating coil current and restraining coil current
    C) Fault current and operating coil current
    D) Fault current and restraining coil current

74. Out of the following plant categories
    i) Nuclear   ii) Run-off-river   iii) Pump storage   iv) Diesel
       the base load power plants are
    A) (i) and (ii)   B) (ii) ad (iii)
    C) (i), (ii) and (iv)   D) (i), (ii) and (iii)

75. For a fixed value of complex power flow in a transmission line having a sending and voltage V, the real power loss will be proportional to
    A) V   B) V^2
    C) $1/V^2$ D) $1/V$

15

76. Power is transferred from system A to system B by a HVDC link as shown in the figure. If the voltage V_{AB} and V_{CD} are as indicated in the figure, and $I > 0$, then

Power Flow →

AC System — Rectifier (A V_{AB} B) — I — (C V_{CD} D) Inverter — AC System
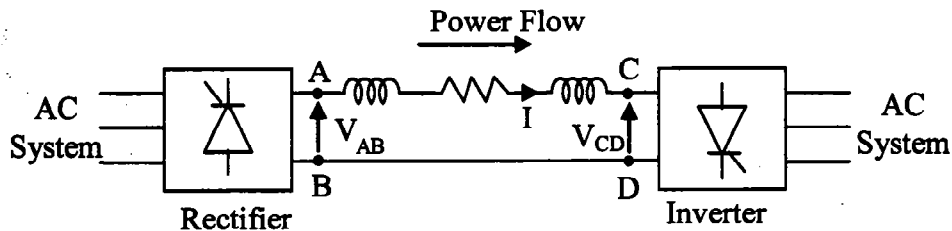
A) $V_{AB} < 0, V_{CD} < 0, V_{AB} > V_{CD}$

B) $V_{AB} > 0, V_{CD} > 0, V_{AB} < V_{CD}$

C) $V_{AB} > 0, V_{CD} > 0, V_{AB} > V_{CD}$

D) $V_{AB} > 0, V_{CD} < 0$

77. Consider two buses connected by an impedance of $(0 + j5)$ ohms. The bus 1 voltage is $100 \lfloor 30° $ V and bus 2 voltage is $100 \lfloor 0° $ V. The real and reactive power supplied by bus 1, respectively are

A) 1000W, 268 VAr   B) -1000W, -134VAr

C) 276.9W, -56.7 VAr   D) -276.9W, -56.7 Var

78. Keeping in view the cost and overall effectiveness, the following circuit breaker is best suited for capacitor bank switching.

A) Vacuum   B) Air blast   C) SF_6 D) Oil

79. The Gauss seidel load flow method has the following disadvantages. Tick the incorrect statement.

A) Unreliable convergence
B) Slow convergence
C) Choice of slack bus affects convergence
D) A good initial guess for voltages is essential for convergence

80. The rated voltage of a 3-phase power system is given as

A) rms phase voltage
B) Peak phase voltage
C) rms line to line voltage
D) Peak line to line voltage

81. For induction heating, which of the following is abnormally high?

A) Voltage   B) Current   C) Frequency   D) Phase angle

82. Electric welding equipment works best at
A) Low voltage and low current
B) Low voltage and high current
C) High voltage and low current
D) High voltage and high current

16

83. Introduction of integral action in the forward path of a unity feedback system results in a

A) Marginally stable system
B) System with no steady state error
C) System with increased stability margin
D) System with better speed of response

84. The closed-loop transfer function of a control system is given by

$\dfrac{C(S)}{R(S)} = \dfrac{1}{1+S}$. For the input r(t) = Sin t, the steady value of C(t) is equal to

A) $\dfrac{1}{\sqrt{2}}$ Cost   B) 1   C) $\dfrac{1}{\sqrt{2}}$ Sint   D) $\dfrac{1}{\sqrt{2}}$ Sin$\left(t - \dfrac{\pi}{4}\right)$

85. Dielectric heating is used for heating

A) Wood   B) Aluminium   C) Magnetic steel   D) Copper

86. Tractive effort acts
A) At 90° with respect to the rails measured in counter clockwise direction
B) At 270° with respect to the rails measured in counter clockwise direction
C) Tangential to the driving wheel
D) For overcoming the effect of gravity only when a train is being hauled

87. The impulse response of an initially relaxed linear system is $e^{-2t}u(t)$. To produce a response of $te^{-2t}u(t)$, the input must be equal to

A) $2e^{-t}u(t)$ B) $\dfrac{1}{2}.e^{-2t}u(t)$ C) $e^{-2t}.u(t)$ D) $e^{-t}.u(t)$

88. The characteristic equation of a feedback control system is
$2S^4 + S^3 + 3S^2 + 5S + 10 = 0$
The number of roots in the right half of s-plane is

A) Zero   B) 1   C) 2   D) 3

89. Phase lead compensation is used to

	Increase	Decrease
A)	Rise time	Over shoot
B)	---	Rise time & over shoot
C)	Rise time & over shoot	---
D)	Overshoot	Rise time

D

90. For a feedback control system of type 2, the steady error for a rap input is

A) Infinite   B) Constant   C) Zero   D) Indeterminate

91. The output of a linear time invariant control system is c(t) for a certain input r(t). If r(t) is modified by passing it through a block whose transfer function is e^{-s} and then applied to the system, the modified output of the system would be

A) $\dfrac{c(t)}{1+e^t}$ B) $\dfrac{c(t)}{1-e^{-t}}$ C) $c(t-1)\,u(t-1)$ D) $c(t)u(t-1)$

92. The pressure coil of a dynamometer type wattmeter is

A) Highly inductive   B) Highly resistive

C) Purely resistive   D) Purely inductive

93. The two inputs of a CRO are fed with two stationary periodic signals. In the X-Y mode, the screen shows a figure which changes from ellipse to circle and back to ellipse with its major axis changing orientation slowly and repeatedly. The following inference can be made from this

A) The signals are not sinusoidal

B) The amplitudes of the signals are very close but not equal

C) The signals are sinusoidal with their frequencies very close but not equal

D) There is a constant but small phase difference between the signals

94. A wattmeter is connected as shown in the figure. The wattmeter reads
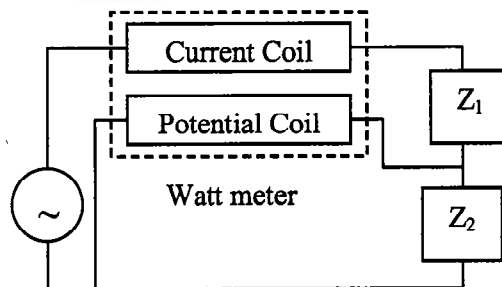
A) Zero always   B) Total power consumed by Z_1 and Z_2

C) Power consumed by Z_1 D) Power consumed by Z_2

95. An ammeter has a current change of 0-5A and its internal resistance is 0.2 ohm. In order to change the range to 0-25 A, wear need to add a resistance of

A) 0.8 ohm in series with the meter

B) 1.0 ohm in series with the meter

C) 0.04 ohm in parallel with the meter

D) 0.05 ohm in parallel with the meter

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96. Consider the following statements
   i) The compensating coil of a low power factor wattmeter compensates the effect of the impedance of the current coil
   ii) The compensating coil of a low power factor wattmeter compensates the effect of the impedance of the voltage coil circuit

   A) (i) is true but (ii) is false
   B) (i) is false but (ii) is true
   C) Both (i) and (ii) are true
   D) Both (i) and (ii) are false

97. The time/div and voltage/div axes of an oscilloscope have been erased. When a 1 kHz, 5V p-p square wave calibration pulse is connected to channel 1 of the scope the waveform observed on the screen is as shown in the upper trace of the figure. An unknown signal is connected to channel 2 (lower trace) of the scope. If the time/div and V/div on both channels are the same, the amplitude (p-p) and period of the unknown signal are respectively.
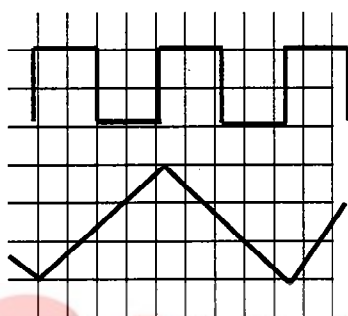
   A) 5V, 1ms   B) 5V, 2ms   C) 7.5 V, 2ms   D) 10 V, 1 ms

98. A current of $-8+6\sqrt{2}(\sin wt+30°)$ A is passed through three meters. They are a centre zero PMMC meter, a true rms meter and a moving iron instrument. The respective readings in A will be

   A) 8, 6, 10   B) 8, 6, 8   C) -8, 10, 10   D) -8, 2, 2

99. R_1 and R_4 are the opposite arms of a Wheatstone bridge as are R_3 and R_2. The source voltage is applied across R_1 and R_3. Under balanced conditions which one of the following is true

   A) $R_1 = \dfrac{R_3 R_4}{R_2}$ B) $R_1 = \dfrac{R_2 R_3}{R_4}$

   C) $R_1 = \dfrac{R_2 R_4}{R_3}$ D) $R_1 = R_2 + R_3 + R_4$

100. A d.c. potentiometer is designed to measure up to about 2V with a slide wire of 800 mm. A standard cell of emf 1.18V obtains balance at 600 mm. A test cell is seen to obtain balance at 680 mm. The emf of the test cell is
   A) 1.00 V   B) 1.34 V   C) 1.50 V   D) 1.70 V

* * * *

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ROUGH WORK