Ph.D. ENTRANCE TEST-2023

SUBJECT (ELECTRONICS)

Total Questions: 100
Time Allowed   : 110 Minutes

Roll No.

Instructions for Candidates

1. Write your roll number in the space provided at the top of this page of question booklet and fill up the necessary information in the spaces provided on OMR Answer sheet.

2. OMR Answer sheet has an original copy and a candidate's copy glued beneath it at the top. While making entries in the original copy, candidate should ensure that the two copies are aligned properly so that the entries made in the original copy against each item are exactly copied in the candidate's copy.

3.   All entries in the OMR answers sheet including answers to questions are to be recorded in the original copy only.

4. Use only blue/ black ball point pen to darken the circle of correct / most appropriate response. In no case gel/ ink pen or pencil should be used.

5. **Do not darken more the one circle of option for any question. A question with more than one dark response shall be considered wrong.**

6. **There will be no "Negative Marking" for wrong answers.**

7. Only those candidates who would obtain positive score in entrance test examination shall be eligible for admission

8.   Do not make any stray mark on the OMR sheet

9. Calculators and mobiles shall not be permitted inside the examination hall

10. Rough work, if any, should be done on the blank sheets provided with the question booklet.

11. OMR answer sheet must be handled carefully and it should not be folded or mutilated in such case it will not be evaluated.

12. Ensure that your OMR Answer sheet has been signed by the invigilator and the candidate himself/herself.

13. At the end of the examination hand over the OMR answer sheet to the invigilator who will first tear off the original OMR sheet in presence of the candidate and hand over the candidate's copy to the candidate.

14. If any of the information in the response sheet/question paper has been found missing or not mentioned as stated above the candidate is solely responsible for that lapse.

SEAL

1. Tariq wants to sell a watch at a profit of 20%. He bought it at 10% less and sold it at ₹ 30 less, but still he gained 20%. The cost price of watch is.....

   A. ₹ 250

   B. ₹ 225

   C. ₹ 240

   D. ₹ 220

2. If today is Sunday then three days from now will be....

   A. Saturday

   B. Friday

   C. Thursday

   D. Wednesday

3. Absar is brother of Mehdi. Iqra is sister of Gulshan. Mehdi is son of Iqra. How is Absar related to Iqra?

   A. Son

   B. Brother

   C. Nephew

   D. Father

4. Ankit can do a piece of work in 6 days and Basharat in 9 days. How many days will both take together to complete the work?

   A. 7.5 days

   B. 5.4 days

   C. 3.6 days

   D. 3 days

5. The book "To Hell and Back: Humans of COVID" is authored by?

   A. Kavitha Iyer

   B. Jhumpa Lahiri

   C. Barkha Dutt

   D. Arundhati Roy

6. If PARTICLE is coded RCTVKENG, then how is SCIENCE coded?

   A. TBJUOMF

   B. TDJFODF

   C. UEKGPEG

   D. QBSUDMF

7. Where is the headquarter of the United Nations Environment Programme (UNEP) located?

   A. Nairobi, Kenya

   B. Venice, Italy

   C. Munich, Germany

   D. Geneva, Switzerland

8. Two years ago, Jane's age was three times Sam's age. If Jane is now 18, how old is Sam?

   A. 6 years

   B. 8 years

   C. 10 years

   D. 12 years

9. If WORK is coded as 4-12-9-16, then how will WOMAN be coded?

   A. 4-12-14-26-13

   B. 4-26-14-13-12

   C. 23-12-26-14-13

   D. 123-15-13-1-14

10. Which of the following states is not included in the sixth schedule of Indian Constitution?

   A. Meghalaya

   B. Tripura

   C. Mizoram

   D. Manipur

11. Letter : Word

    A. Homework : School
    B. Club : People
    C. Product : Factory
    D. Page : Book

12. The speed of a bus is 54 km/h if we don't let it stop at any point. If the bus stops at the bus-stops, the speed of the bus is 45 km/h. What is the time that the bus stops for per hour?

    A. 7 mins
    B. 10 mins
    C. 21 mins
    D. 22 mins

13. Blood does not coagulate inside the body due to the presence of _____?

    A. Fibrin
    B. Haemoglobin
    C. Heparin
    D. Plasma

14. If a triangle has angles measuring 30 degrees, 60 degrees, and 90 degrees, what type of triangle is it?

    A. Equilateral
    B. Isosceles
    C. Scalene
    D. Right-angled

15. The ...... of the Minister's statement cannot be verified by people who have no access to official records.

    A. veracity
    B. verbosity
    C. ambiguity
    D. validity

16. The number of squares in the given figure is.....
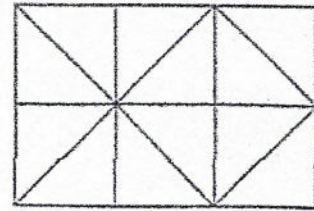
    A. 7
    B. 8
    C. 9
    D. 10

17. What is the percentage of profit if the cost price is 95% of the selling price?

    A. 5%
    B. 5.26%
    C. 4%
    D. 4.75%

18. If you start facing east and turn 135 degrees clockwise, which direction are you facing now?

    A. North
    B. West
    C. North-East
    D. South-East

19. Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) has been extended till which year recently?

    A. 2025
    B. 2028
    C. 2030
    D. 2032

20. Who is the present chairman of ISRO?

    A. Sh. Heeralal Samariya
    B. Sh. Harsh Chouhan
    C. Sh. Ravneet Kaur
    D. Sh. S Somanath

End of Part I

21. An n-channel enhancement mode MOSFET is biased at $V_{GS} > V_{TH}$ and $V_{DS} > (V_{GS} - V_{TH})$, where V_{GS} is the gate to source voltage, V_{DS} is the drain to source voltage and V_{TH} is the threshold voltage. Considering channel length modulation effect to be significant, the MOSFET behaves as a _____

   A) Voltage source with zero output impedance
   B) Voltage source with non-zero output impedance
   C) Current source with finite output impedance
   D) Current source with infinite output impedance

22. A bar of Gallium Arsenide (GaAs) is doped with Silicon such that the Silicon atoms occupy Gallium and Arsenic sites in the GaAs crystal. Which one of the following statements is true?

   A) Silicon atoms act as p-type dopants in Arsenic sites and n-type dopants in Gallium sites
   B) Silicon atoms act as n-type dopants in Arsenic sites and p-type dopants in Gallium sites
   C) Silicon atoms act as p-type dopants in Arsenic as well as Gallium sites
   D) Silicon atoms act as n-type dopants in Arsenic as well as Gallium sites

23. RC coupling is not used to amplify extremely low frequencies because _____

   A) There is considerable power loss
   B) There is hum in the output
   C) Electrical size of coupling capacitor becomes very large
   D) None of the above

24. A network contains linear resistors and ideal voltage sources. If values of all the resistors are doubled, then the voltage across each resistor is _____

   A) Halved
   B) Doubled
   C) Increases by four times
   D) Remains unchanged

25. The 2–port admittance matrix of the circuit shown is given by _____
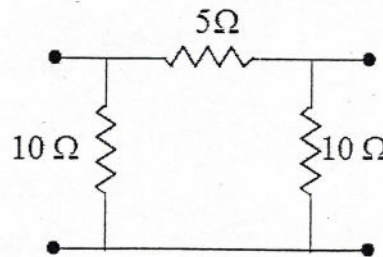
   A) $\begin{bmatrix} 0.3 & -0.2 \\ -0.2 & 0.3 \end{bmatrix}$

B) $\begin{bmatrix} 15 & 5 \\ 5 & 15 \end{bmatrix}$

C) $\begin{bmatrix} 3.33 & -5 \\ -5 & 3.33 \end{bmatrix}$

D) $\begin{bmatrix} 0.3 & 0.4 \\ 0.4 & 0.3 \end{bmatrix}$

26. An *npn* bipolar junction transistor (BJT) is operating in the active region. If the reverse bias across the base-collector junction is increased. Then _____

    A) the effective base width increases and common-emitter current gain increases
    B) the effective base width increases and common emitter current gain decreases
    C) the effective base width decreases and common-emitter current gain increases
    D) the effective base width decreases and common-emitter current gain decreases

27. The relationship between β and α is given by _____

    A) $\beta = \dfrac{1}{1-\alpha}$

    B) $\beta = \dfrac{1}{1+\alpha}$

    C) $\beta = \dfrac{\alpha}{1-\alpha}$

    D) $\beta = \dfrac{\alpha}{1+\alpha}$

28. A region of negative differential resistance is observed in the current voltage characteristics of a silicon PN junction if _____

    A) Both the P-region and the N-region are heavily doped
    B) The N-region is heavily doped compared to the P-region
    C) The P-region is heavily doped compared to the N-region
    D) An intrinsic silicon region is inserted between the P-region and the N-region

29. Assuming that the opamp in the circuit shown below is ideal, the output voltage V_o is _____ 0 V
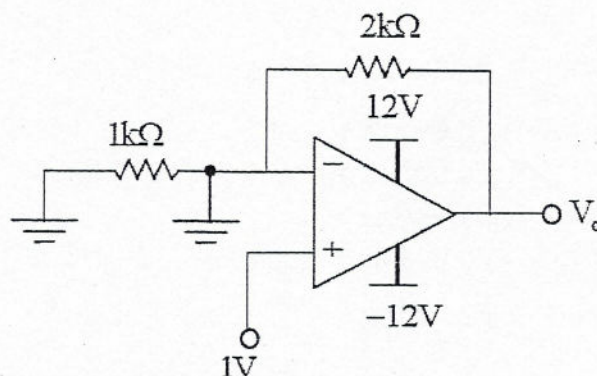
    A) 3 V

    B) 6 V

    C) 9 V

    D) 12 V

30. The clock frequency of an 8085 microprocessor is 5 MHz. If the time required to execute an instruction is 1.4 µs, then the number of T-states needed for executing the instruction is _____

    A) 1

    B) 6

    C) 7

    D) 4

31. _____ pin of 8085 is used by DMA controller to indicate that the MPU is relinquishing control of the buses.

    A) TRAP

    B) HOLD

    C) READY

    D) HLDA

32. The surface integral of the normal component of the electric displacement D over any closed surface equals the charge enclosed by the surface. The above statement is associated with _____

    A) Gauss's law

    B) Kirchhoff s law

    C) Faraday's law

    D) Lenz's law

33. The terms frequency pushing and pulling are related to

    A) Reflex Klystron

    B) Two cavity klystrons

    C) Pulsed radar system

    D) Magnetron

34. An AM demodulator can be implemented with

    1. A linear multiplier followed by low pass filter.

    2. A linear multiplier followed by high-pass filter.

    3. A diode followed by low pass filter.

    4. A linear multiplier followed by band-stop filter.

Which one of the following is correct?

    A) 1 only

B) 3 only

C) 1 and 3

D) 4 only

35. If a radio receiver amplifies all the signal frequencies equally well, it is said to have high _____

A) Sensitivity

B) Selectivity

C) Distortion

D) Fidelity

36. The di/dt value of thyristor must be maintained below a threshold (limiting value). This is done by means of _____

A) Connecting an inductor in parallel with thyristor.

B) Connecting a capacitor in parallel with thyristor.

C) Connecting an inductor in series with thyristor.

D) Both A and B

37. An amplifier that operates in the linear region during one half cycle is _____

A) Class A

B) Class AB

C) Class B

D) Class C

38. Which of the following in not a valid keyword in C programming language?

A) typedef

B) volatile

C) automatic

D) register

39. A piezoelectric effect in a crystal is _____

A) A voltage developed because of mechanical stress

B) A change in resistance due to temperature

C) A change in frequency due to temperature

D) A change in resistance due to light

40. Hall effect can be used to measure

1. Conductivity of the charge carrier.

2. Mobility of the charge carrier.

3. The number of valence electrons per atom.

4. Band gap of the material.

Which of the following is correct?

A) 1 and 2 are true
B) 2 and 3 are true
C) 3 and 4 are true
D) 1 and 4 are true

41. Consider a stable system with transfer function

$$G(s) = \frac{s^p + b_1 s^{p-1} + \cdots + b_p}{s^q + a_1 s^{q-1} + \cdots + a_q}$$

where $b_1 \ldots b_q$ and $a_1 \ldots a_q$ are real valued constants. The slope of the Bode log magnitude curve of G(s) converges to –60 dB/decade as $\omega \to \infty$.

A possible pair of values for p and q is _____

A) p = 0 and q = 3
A) p = 1 and q = 7
B) p = 2 and q = 3
C) p = 3 and q = 5

42. The hexadecimal representation of $(103)_{10}$ is _____

A) 7F
B) 67
C) 81
D) 87

43. The logic function $f = xy + x\bar{y} + \bar{x}y + \bar{x}\bar{y}$ is the same as _____

A) $f = 1$
B) $f = (\bar{x} + y)(x + \bar{y})$
C) $f = (x.y) + (\bar{x}.\bar{y})$
D) Both B and C

44. A square wave clock with a period of 6 μs drives a T flip-flop (T=1). The time period of the output signal will be _____

A) 6 μs
B) 24 μs
C) 10 μs
D) 12 μs

45. The upper and lower sideband frequencies for 5 KHz amplitude modulation with a 30 KHz carrier frequency will be?

A) 25 kHz and 35 kHz
B) 34 kHz and 24 kHz

    C) 35 kHz and 25 kHz

    D) 0.35 kHz and 0.25 kHz

46. The last block in PCM transmitter is _____

    A) Sampler

    B) Anti-aliasing filter

    C) Encoder

    D) Quantizer

47. Continue statement is used to _____

    A) Bypass the statements in loop

    B) Continue the execution of current statement

    C) Exit from loop

    D) None of above

48. Which one of the following is a decision statement?

    A) If else

    B) for

    C) while

    D) do while

49. IPV6 is _____ address

    A) 128 bits

    B) 64 bits

    C) 256 bits

    D) 2 bits

50. Transmission control protocol (TCP) is _____ protocol

    A) Connection less

    B) Connection Oriented

    C) Serviceless

    D) None of above

51. Consider an n-channel MOSFET having width W, length L, electron mobility in the channel μ_n and oxide capacitance per unit area C_{ox}. If gate-to-source voltage V_{GS} = 0.7V, drain-to-source voltage V_{DS} = 0.1V, $(\mu_n C_{ox})$ = 100 µA/V², threshold voltage V_{TH} = 0.3V and (W/L) = 50, then the transconductance gm (in mA/V) is _____

A) 0.3
B) 0.5
C) 0.7
D) 0.9

52. In the circuit shown below, the silicon *npn* transistor Q has a very high value of β. The required value of R_2 in kΩ to produce I_C = 1mA is _____
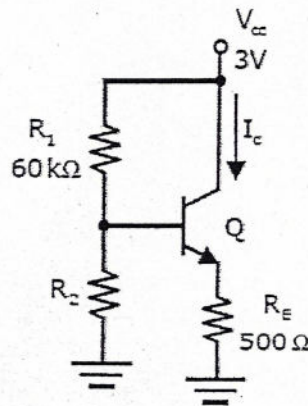
A) 30
B) 40
C) 60
D) 70

53. Consider the following materials used for fabrication of Photonic ICs.

1. GaP
2. InAs
3. GaAs
4. Si

Which of the following is correct sequence of the ascending order in terms of band gap?

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

54. The Inverter has load capacitance of 2pF and supply voltage of 1.5V. What is energy consumption per cycle?

A) 6 pJ
B) 6 nJ
C) 4.5 pJ
D) 5 pJ

55. A power amplifier has a gain of 20 dB and an input level of 2 volts. Assuming that the input and impedance are the same, what is the voltage level at amplifier output?

A) 200 V
B) 20 V
C) 10 V
D) 50 V

56. In a certain oscillator, the voltage gain without feedback is 50. The attenuation of the feedback circuit must be_____

A) 0.02
B) 0.2
C) 2
D) 20

57. The current i_b through the base of a silicon npn transistor is $[1 + 0.1 \cos(10000\pi t)]$mA. At 300K, the r_π in the small signal model of the transistor is

_____

A) 250 Ω
B) 27.5 Ω
C) 25 Ω
D) 22.5 Ω
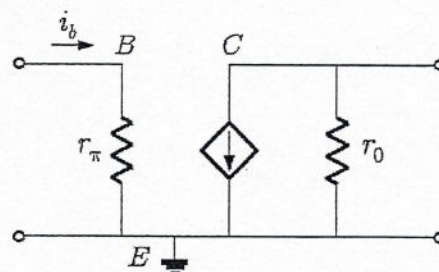
58. The i -v characteristics of the diode in the circuit given below are

$$i = \begin{cases} \dfrac{v - 0.7}{500}A, & v \geq 0.7 \\ 0A, & v < 0.7 \end{cases}$$
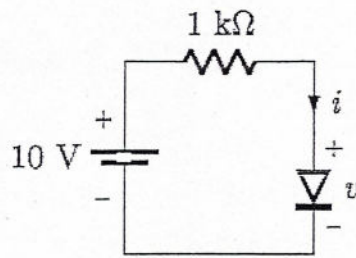
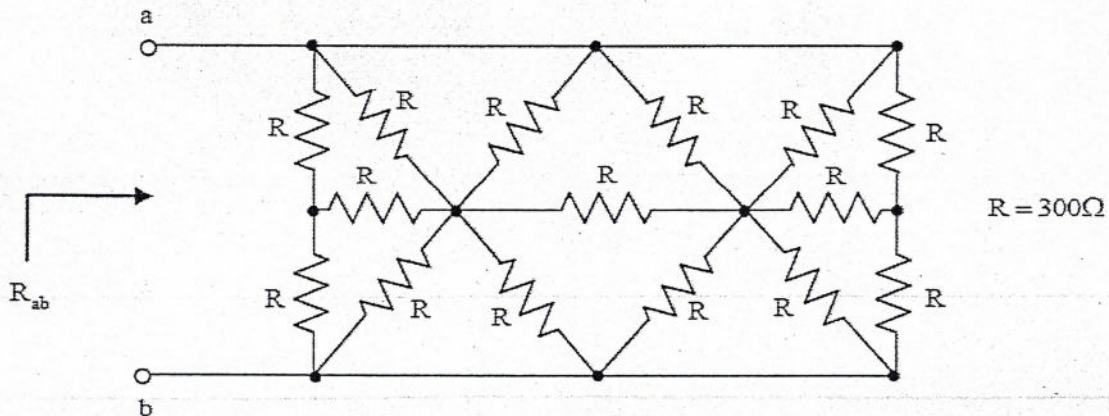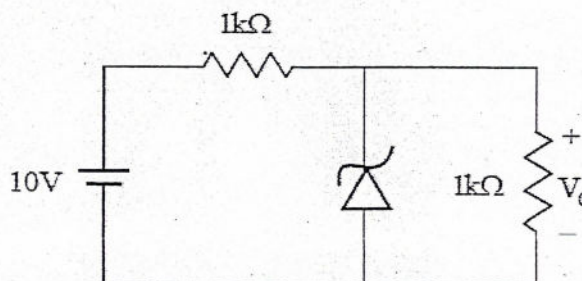The current in the circuit is _____

A) 10 mA
B) 9.3 mA
C) 6.67 mA
D) 6.2 mA

59. In the network shown in the figure, all resistors are identical with R=300 Ω. The resistance R_{ab} of the network is_____.

A) 300 Ω
B) 100 Ω
C) 200 Ω
D) 50 Ω

60. In the circuit shown below, the Zener diode is ideal and the Zener voltage is 6V. The output voltage (in volts) is _____.
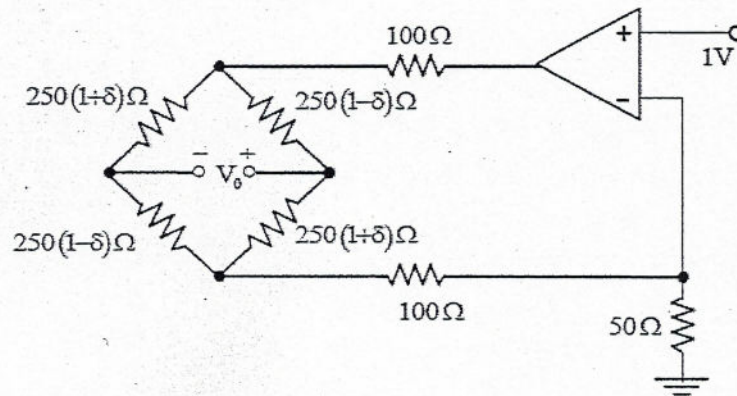

A) 6V
B) 5V

C) 4V

D) 3V

61. Consider a four-bit D to A converter. The analog value corresponding to digital signals of values 0000 and 0001 are 0V and 0.0625V respectively. The analog value (in Volts) corresponding to the digital signal 1111 is _____.
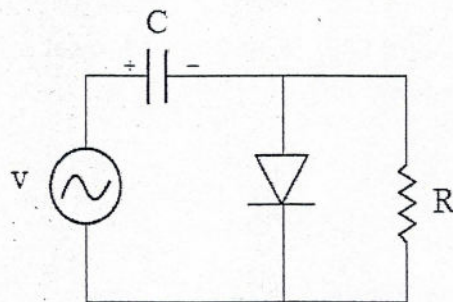
A) 0.5625

B) 0.6875

C) 0.9375

D) 0.8125

62. In the circuit shown, assume that the opamp is ideal. The bridge output voltage V_0 for $\delta = 0.05$ is _____.

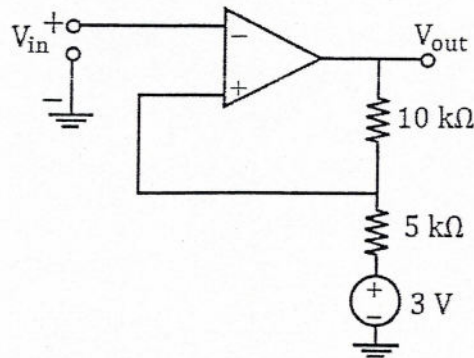A) 1 V

B) 0.75 V

C) 0.5 V

D) 0.25 V

63. If the circuit shown has to function as a clamping circuit, which one of the following conditions should be satisfied for sinusoidal signal of period T?
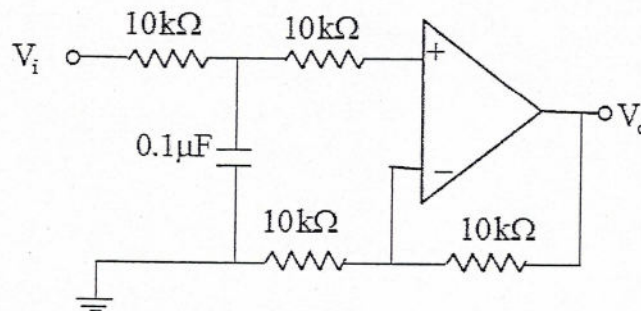

A) RC<<T

B) RC = 0.35T

C) RC ≈T

D) RC >> T

64. For the operational amplifier circuit shown, the output saturation voltages are ± 15V. What will be the upper and lower threshold voltages for the circuit?

A) +7 V and – 3V
B) +5 V and – 5V
C) +3V and – 7V
D) +3V and – 3V

65. In the circuit shown using an ideal *opamp*, the 3-dB cut-off frequency (in Hz) is _____.

A) 159.15 Hz
B) 1591.5 Hz
C) 15915 Hz
D) 2000 Hz

66. While assigning the bit(s) to the cells, Karnaugh Map follows _____

A) Excess-3 codes
B) Gray code
C) Straight binary code
D) BCD code

67. The output SUM of full adder is equal to _____

A) $X.Y.Z$
B) $X + Y + Z$
C) $X + Y.Z$
D) $X \oplus Y \oplus Z$

68. Consider the given circuit
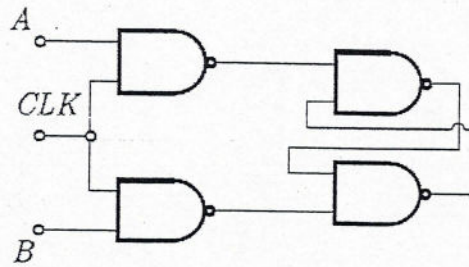
In this circuit, the race around condition _____

A) does not occur
B) occur when CLK = 0
C) occur when CLK = 1 and A = B = 1
D) occur when $CLK = 1$ and $A = B = 0$

69. The output Y of a 2-bit comparator is logic 1 whenever the 2-bit input A is greater than the 2-bit input B. The number of combinations for which the output is logic 1, is _____

A) 4
B) 6
C) 8
D) 10

70. Which of the following is current in the circuit shown below:
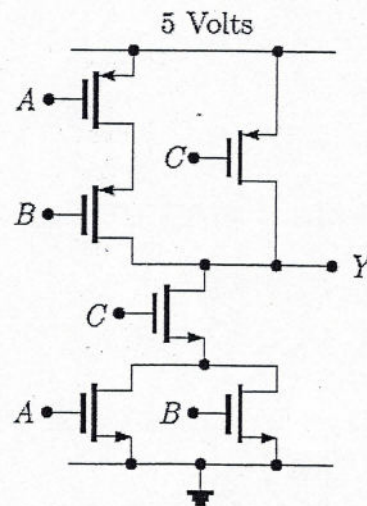
A) $Y = \bar{A}\bar{B} + \bar{C}$
B) $Y = (A + B)C$
C) $Y = (\bar{A} + \bar{B})\bar{C}$
D) $Y = AB + C$

71. A *mod–n* counter using a synchronous binary up–counter with synchronous clear input is shown in the figure. The value of n is _____
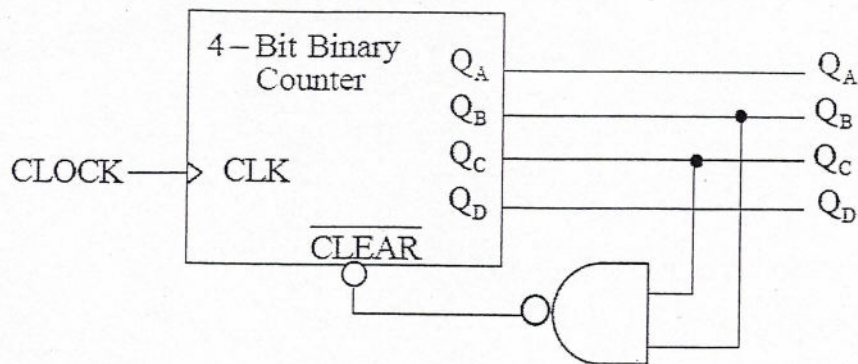
A) 8
B) 5
C) 7
D) 6

72. Which one of the following is not correct about 8085 microprocessors?

A) The flag register consists of 8 bits and only 5 of them are used
B) The flag register is a Special Purpose Register
C) The Auxiliary flag is useful in the BCD number system.
D) After any arithmetical or logical operation if the result is 0 (00)H, the zero flag is reset i.e. becomes 0

73. How many T-states are required for execution of OUT 80H instruction in 8085?

A) 10
B) 13
C) 16
D) 7

74. For 8085 microprocessors, the instruction RST 6 restarts subroutine at which of the following address?

A) 00H
B) 30H
C) 03H
D) 33H

75. During PUSH instruction of 8085 the stack pointer is _____.

A) Incremented by 2
B) Decremented by 2
C) Incremented by 1
D) Decremented by 1

76. The following are the interrupts of 8085 microprocessor :

    1. INTR
    2. TRAP
    3. RST 7.5
    4. RST 5.5

    The correct order in which these interrupts will be executed, if they arrive simultaneously is _____

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

77. A coaxial-cable with an inner diameter of 1 mm and outer diameter of 2.4 mm is filled with a dielectric of relative permittivity 10.89. Given $\mu_0 = 4\pi \times 10^{-7} H/m$, $\epsilon_0 = \frac{10^{-9}}{36\pi}$ F/m, the characteristic impedance of the cable is _____

    A) 330 Ω
    B) 100 Ω
    C) 143.3 Ω
    D) 43.4 Ω

78. In a delta modulation system, granular noise occurs when the _____

    A) modulating signal increases rapidly
    A) pulse rate decreases
    B) pulse amplitude decreases
    C) modulating signal remains constant

79. What is the other name for half-wave dipole antenna?

    A) helical antenna
    B) isotropic antenna
    C) hertz antenna
    D) maxwell antenna

80. Consider a single input single output discrete-time system with x[n] as input and y[n] as output, where the two are related as follows:

    $$y(n) = \begin{cases} n|x[n]|, & for\ 0 \le n \le 10 \\ x[n] - x[n-1], & otherwise \end{cases}$$

    Which one of the following statements is true about the system?

    A) It is causal and stable
    B) It is causal but not stable

C) It is not causal but stable

D) It is neither causal nor stable

81. In binary frequency shift keying (FSK), the given signal wave forms are:

$$u_o(t) = 5cos(20000\pi t); \quad 0 \le t \le T, and$$
$$u_1(t) = 5cos(22000\pi t); \quad 0 \le t \le T,$$
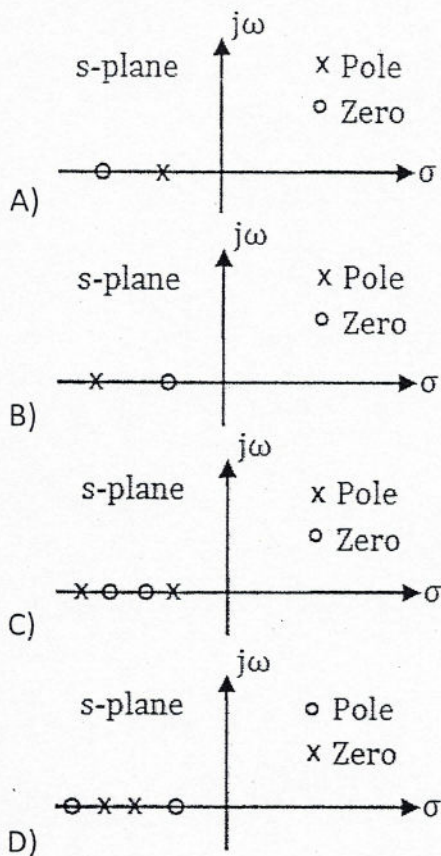
where T is the bit-duration interval and t is in seconds. Both $u_o(t)$ and $u_1(t)$ are zero outside the interval $0 \le t \le T$.

With a matched filter (correlator) base receiver, the smallest positive value of T (in milliseconds) required to have $u_o(t)$ and $u_1(t)$ uncorrelated is _____

A) 0.25 ms

B) 0.5 ms

C) 0.75 ms

D) 1.0 ms

82. The impulse response of an LTI system can be obtained by _____

A) differentiating the unit ramp response

B) differentiating the unit step response

C) integrating the unit ramp response

D) integrating the unit step response

83. Suppose $x[n]$ is an absolutely summable discrete-time signal. Its z-transform is a rational function with two poles and two zeroes. The poles are at $z = \pm 2j$. Which one of the following statements is TRUE for the signal $x[n]$?

A) It is a finite duration signal.

B) It is a causal signal.

C) It is a non-causal signal.

D) It is a periodic signal

84. Consider the following statements for continuous-time linear time invariant (LTI) systems.

I. There is no bounded input bounded output (BIBO) stable system with a pole in the right half of the complex plane.

II. There is no causal and BIBO stable system with a pole in the right half of the complex plane.

Which one among the following is correct?

A) Both I and II are true

B) Both I and II are not true

C) Only I is true

D) Only II is true

85. Which of the following can be the pole-zero configuration of a phase-lag controller (lag compensator)?

A) s-plane, $j\omega$, σ, x Pole, o Zero

B) s-plane, $j\omega$, σ, x Pole, o Zero

C) s-plane, $j\omega$, σ, x Pole, o Zero

D) s-plane, $j\omega$, σ, o Pole, x Zero

86. A periodic signal x(t) has a trigonometric Fourier Series expansion

$$x(t) = a_0 + \sum_{n=1}^{\infty} (a_n cosn\omega_0 t + b_n sinn\omega_0 t)$$

If $x(t) = -x(-t) = -x(t - \pi/\omega_0)$, we can conclude that _____

A) an are zero for all n and bn are zero for n even
B) an are zero for all n and bn are zero for n odd
C) an are zero for n even and bn are zero for n odd
D) an are zero for n odd and bn are zero for n even

87. The Nyquist plot of the transfer function

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

does not encircle the point (−1+j0) for K = 10 but does encircle the point (−1 + j0) for K =100.

The closed loop system (having unity gain feedback) is _____

A) stable for K = 10 and stable for K = 100
B) stable for K = 10 and unstable for K = 100
C) unstable for K = 10 and stable for K = 100
D) unstable for K = 10 and unstable for K = 100

88. The state variable representation of a system is given as

$$\dot{x} = \begin{bmatrix} 0 & 1 \\ 0 & -1 \end{bmatrix} x; \quad x(0) = \begin{bmatrix} 1 \\ 0 \end{bmatrix}$$
$$y = \begin{bmatrix} 0 & 1 \end{bmatrix} x$$

The response $y(t)$ is _____

A) $sin(t)$
B) $1 - e^t$
C) $1 - cos(t)$
D) 0

89. Consider the following :

1. Quantization
2. Sampling
3. Encoding
4. Low-pass filter

The correct sequence for converting an analog signal to Digital signal is _____

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

90. Match List – I and List – II and select the correct answer using the codes given below the lists:

List – I (Transducers)
(a) Capacitive transducer
(b) Thermocouple
(c) Bourdon gauge
(d) Solar cell

List – II (Measured Quantity)
(i) Temperature
(ii) Power
(iii) Displacement
(iv) Pressure

Codes:

	(a)	(b)	(c)	(d)
A)	(i)	(iii)	(ii)	(iv)
B)	(iii)	(i)	(iv)	(ii)
C)	(ii)	(iv)	(i)	(iii)
D)	(iv)	(i)	(iii)	(ii)

91. In an amplitude modulated system, the total power radiated 105 W. The power of the carrier is 85 W. What is modulation index?

    A) 0.685
    B) 0.587
    C) 0.586
    D) 0.865

92. LCD uses _____

    A) sematic crystals
    B) twisted nematic crystals
    C) nematic crystals
    D) cholesteric crystals

93. An SCR is turned off by _____

    A) Reducing anode voltage to zero
    B) Reducing gate voltage to zero
    C) Reverse biasing the gate
    D) None of the above

94. The intrinsic stand-off ratio (η) of a UJT is given by _____

    A) $R_{B1} + R_{B2}$
    B) $\dfrac{R_{B1}+R_{B2}}{R_{B1}}$
    C) $\dfrac{R_{B1}}{R_{B1}+R_{B2}}$
    D) $\dfrac{R_{B1}+R_{B2}}{R_{B2}}$

95. If the full-scale deflection current of a multimeter is 50 µA, its sensitivity is _____

    A) 10 kΩ/V
    B) 100 kΩ/V
    C) 50 kΩ/V
    D) 20 kΩ/V

96. Considering Δf as the frequency deviation and f_m as the modulating signal frequency, in FM, modulation index m_f is equal to _____

    A) $\Delta f. f_m$
    B) $\dfrac{f_m}{\Delta f}$
    C) $\dfrac{\Delta f}{f_m}$
    D) $\dfrac{1}{\Delta f.f_m}$

97. Which of the following pairs is not correctly matched:

    A) DSB-SC modulation: Balanced modulator
    B) PCM: Pre-emphasis
    C) FM: Reactance modulator
    D) SSB modulation: Weaver's method

98. In majority of instruments damping is provided by _____

    A) fluid friction
    B) spring
    C) eddy currents
    D) all of the above

99. The size of Union is _____

    A) Highest data type contained in it
    B) Sum of all the data types in it
    C) Sum of Similar data types in it
    D) None of above

100. Pointer is a variable which stores _____

    A) The address of another variable
    B) The immediate data
    C) Both float and integer data
    D) Address of integer variables only