97/2014

Maximum : 100 marks

Time : 1 hour and 15 minutes

1. Trimmer is a sort of :

   (A) Fixed capacitor
   (B) Variable capacitor
   (C) Adjustable resistor
   (D) Fixed resistor

2. The Inductive reactance is :

   (A) $X_L = 1/2\pi fL$
   (B) $X_L = 2\pi f / L$
   (C) $X_L = fL/2\pi$
   (D) $X_L = 2\pi fL$

3. A transformer in which secondary voltage is same as that of the primary is known as :

   (A) Isolation transformer
   (B) Auto transformer
   (C) Current transformer
   (D) Potential transformer

4. Power factor (P.F) is given by :

   (A) R^2/Z
   (B) R.Z
   (C) Z/R
   (D) R/Z

5. In Delta 3 phase system, line voltage is ———— E_{phase}.

   (A) 2
   (B) 1.73
   (C) 1
   (D) 1/1.73

6. The Ripple factor for full wave rectifier is :

   (A) 1.1
   (B) 0.48
   (C) 1.21
   (D) 0.96

7. In a RC circuit at ———— Time constant the voltage achieve its final maximum value.

   (A) 5T
   (B) 2T
   (C) 4T
   (D) 1T

8. In a series resonance circuit the net reactance below the resonance frequency will be :

(A) Inductive and capacitive (B) Resistive

(C) Capacitive (D) Inductive

9. The loss that occurs in the core due its reversal of magnetization force is :

(A) Eddy current loss (B) Hysteresis loss

(C) Copper loss (D) Leakage loss

10. If a 100 Ah battery is used for 5 hours continuously the current supplied by the same in :

(A) 500 A (B) 20 A

(C) 5 A (D) 0.4 A

11. A reversed biased PN junction has ———— capacitance.

(A) Transition (B) Diffusion

(C) Storage (D) Forward

12. One metric Hp is :

(A) 735.5 watts (B) 746 watts

(C) 735.5 K watts (D) 746 K watts

13. The No. of gates in Silicon controlled switch :

(A) 1 (B) 4

(C) 3 (D) 2

14. The atomic number of an element is equal to :

(A) The sum no. of electrons and protons

(B) The no. of neutrons

(C) The no. of protons

(D) The sum no. of protons and no. of neutrons

15. The positive temperature coefficient means ———— with increases in temp.

(A) Resistance decreases (B) Current increases

(C) Voltage decreases (D) Resistance increases

16. Each solar cell has an open voltage :

(A) 0.3 V (B) 0.57 V

(C) 1.5 V (D) 2.2 V

17. ———— is often known as triggering agent for SCR.

(A) DIAC (B) Transistor

(C) UJT (D) Diode

18. The minimum current at which the relay armature is attracted to open the N/C contact is :

(A) Energizing current (B) Drop out current

(C) De energizing current (D) Reverse current

19. One unit of electrical power consumption is :

(A) 1 kW (B) 1000 Whr

(C) 1000 KW (D) 1000 KWhr

20. The PIV across each diode of half wave rectifier in 3 phase system is equal to ———— V_s(peak).

(A) 4 (B) 1

(C) 1.73 (D) 2

21. A SWG is used to measure :

(A) Diameter of the wire (B) Length of the wire

(C) Insulation of wire (D) Cross-sectional area of a wire

22. Which of the following circuit can be used as a DC transformer?

(A) SCR (B) Inverter

(C) Magnetic amplifier (D) Demodulator

23. Given a carrier frequency of 100 Khz and modulation frequency of 2Khz the frequencies present in the AM carrier wave :

(A) 100 Khz, 2 Khz (B) 100 Khz, 98 Khz, 102 Khz

(C) 98 Khz, 102 Khz (D) 100 Khz, 102 Khz

24. Which of the following is not a terminal of 555?

(A) Threshold (B) Control voltage

(C) Discharge (D) Reference voltage

25. The O/P voltage and maximum current of LM723 IC is :

(A) 5 to 45 V and 100 mA
(B) 2 to 37 V and 150 mA
(C) 2 to 37 V and 50 mA
(D) 5 to 50 V and 50 mA

26. Half adder is also known as :

(A) NAND
(B) AND
(C) NOT
(D) EXOR

27. Class 'AB' amplifier conducts during ———— of the I/P.

(A) Positive half cycle
(B) Entire cycle
(C) Negative cycle
(D) Less than full cycle and more than half cycle

28. The oscillator most commonly used in transmitter is :

(A) RC oscillator
(B) Wein bridge oscillator
(C) Crystal oscillator
(D) Hartley oscillator

29. The typical efficiency of an UPS is of the order of :

(A) 25%
(B) 60%
(C) 90%
(D) 100%

30. The hexa decimal equivalent of 1101 0011 1110 is :

(A) D3E
(B) D2E
(C) E3D
(D) E2D

31. Operating system is also known as :

(A) Data base
(B) Hardware
(C) System software
(D) Printer

32. The advantage serial transport compared to parallel transport for data transmission is that :

(A) It need only one wire
(B) It is faster
(C) BCD compatible
(D) All of these

33. The number of flip flops required to construct mod 10-counter is :

(A) 2 (B) 6

(C) 3 (D) 4

34. Which is not an advantage of Optical fiber?

(A) Low loss (B) Wide band width

(C) Light weight (D) Low Cost

35. _____ is not an optical sensor.

(A) LDR (B) Laser diode

(C) LASCR (D) APD

36. RTDs can be used for measuring a temperature of _____ °C.

(A) 500 (B) –250

(C) 1000 (D) 1500

37. The important advantage of CMOS IC is :

(A) High speed (B) High power dissipation

(C) Low power consumption (D) Low 'fan out'

38. Some typical PLC are :

(A) 555 (B) 741

(C) 1084 (D) 7912

39. The active component used in electronic tuning is :

(A) Varactor diode (B) Schokty diode

(C) PIN diode (D) Tunnel diode

40. Gain of an non inverting OP amp is :

(A) $-RF/R_1$ (B) $1 + Rf/R_1$

(C) RF/R_1 (D) $1 - RF/R_1$

41. Astable multivibrator is a _____ circuit.

(A) Free running (B) Triggered

(C) Sine wave (D) Amplifier

42. In a MOSFET substrate is internally shorted to :

(A) Drain (B) Gate

(C) Base (D) Source

43. The ultra-sonic flaw detector working in the frequency range of :

(A) 0.8 MHz to 2.5 MHz (B) 20 Hz to 20 KHz

(C) 2 GHz to 10 GHz (D) 30 KHz to 300 KHz

44. The basic memory element in sequential circuit is :

(A) Amplifier (B) Rectifier

(C) Flip flop (D) Modulator

45. LVDT :

(A) Converts linear motion into electrical signal

(B) Helps measuring temperature

(C) Translates electrical signals in linear motion

(D) Can be used to sense angular displacement

46. Detector is used in :

(A) Transmitter only (B) Modulator

(C) Receiver and transmitter (D) Receiver only

47. A full adder can add ———— binary digits at a time.

(A) 2 (B) 3

(C) 4 (D) 5

48. Multiplexer is logic which has :

(A) No. of data I/P and no. of O/P (B) Only one data I/P and one O/P

(C) No. of data I/P and only one O/P (D) Only one data I/P and no. of O/P

49. The important advantage of LCD is :

(A) High power consumption (B) Low power consumption

(C) Brightness (D) Easy to mount

50. For the display of digit '3' in a 7 segment display unit, the lit segment are :

(A) f, g, b, c, a
(B) f, a, b, c, d
(C) f, e, b, c, g
(D) a, b, c, d, g

51. ELCB work on the principle of :

(A) Over load current
(B) Short circuit current
(C) Residual current
(D) Neutral current

52. In a induction motor AC is applied to :

(A) Stator
(B) Stator and rotor
(C) Rotor
(D) None of the above

53. A snubber circuit usually consists ———— with the device.

(A) RC series circuit connected in series
(B) RC parallel connected in parallel
(C) RC parallel circuit connected in series
(D) RC series circuit connected in parallel

54. In the oil circuit breaker insulating oil is used for :

(A) Lubrication
(B) Avoiding rust
(C) Easy path flow of current
(D) Arc extinction

55. The electric of petrol gauge works on the principle of ———— effect.

(A) Electro chemical
(B) Electro magnetic
(C) Electro-mechanical
(D) Piezo-electric

56. An essential part of a pneumatic system is :

(A) Water receiver
(B) Magnet
(C) Air receiver
(D) Solar energy

57. Interrupt control in 8085 microprocessor have ———— input.

(A) 2
(B) 5
(C) 7
(D) 3

58. In electronic sewing ———— heating is used.

(A) Induction (B) Dielectric

(C) Conductive (D) Emission

59. ———— is used in induction heating.

(A) AC current (B) DC current

(C) Saw tooth current (D) Eddy current

60. In the SMPS regulator is accompanied by :

(A) Duty cycle control (B) Regulator IC

(C) Zener (D) Stabilisor

61. To start an automobile engine ———— motor is commonly used.

(A) Induction motor (B) AC motor

(C) Single phase AC series motor (D) DC series motor

62. The normal value of O/P voltage of servo controlled stabilizer is :

(A) 180-210 (B) 210-240

(C) 190-220 (D) 180-230

63. Thermo couple is formed by joining :

(A) Two similar metal (B) Two dissimilar metal

(C) Semi-conductors (D) Insulators

64. In a CRO the input signal is applied to :

(A) Vertical amplifier (B) Horizontal amplifier

(C) Saw tooth Oscillator (D) All the above

65. TRIACs can be considered as a combination of :

(A) Two Transistor (B) Two Diode

(C) Two SCR (D) One Diode and One SCR

66. Chopper can be used in future electric auto mobile for :

(A) Speed control only (B) Breaking only

(C) Speed control and Breaking (D) None of these

67. Sampler is used in process of :

(A) Converting digital signals to analog signals

(B) Amplify digital signal

(C) Controlling digital signal

(D) Converting analog signal to digital signal

68. The main advantage of PCM over analog modulation is :

(A) Simplex operation (B) Noise immunity

(C) Reduced bandwidth (D) None of these

69. Schokley diode has ———— layer and ———— terminal.

(A) 3, 2 (B) 4, 3

(C) 4, 2 (D) 2, 2

70. Most common way of PLC programming :

(A) Ladder Diagram (B) C++

(C) Java (D) Pascal

71. In a PID controller has ———— function.

(A) Proportional, Integral, Derivative

(B) Proportional, Inverter and detector

(C) Proportional, Inverter, differentiator

(D) Propagation, Integration, detection

72. The length of dipole antenna is :

(A) 152/f (B) 137/f

(C) 143/f (D) 130/f

73. In microprocessor "MVI" Instruction is given in ———— addressing.

(A) Direct (B) Register

(C) Immediate (D) Implicit

74. Intrinsic stand of ratio of UJT is :

(A) $R_{b1} * R_{b2}/R_{b1} + R_{b2}$ (B) $R_{b1}/R_{b1} + R_{b2}$

(C) $R_{b2}/R_{b1} + R_{b2}$ (D) $R_{b1} + R_{b2}/R_{b1} * R_{b2}$

75. Range extension of ammeter requires ———— with milliameter.

(A) A shunt resistor
(B) A series resistor
(C) Series multiplier
(D) None of these

76. Communication circuit that transmit data in both direction at the same time are operating in :

(A) Simplex mode
(B) Asynchronous mode
(C) A half-duplex mode
(D) Full duplex mode

77. Which of the following memories must be refreshed periodically?

(A) DRAM
(B) EPROM
(C) ROM
(D) EEPROM

78. Which is not an internet browser?

(A) Netscape
(B) Safari
(C) Bing
(D) Opera

79. An XOR gate produces an output only when its two inputs are :

(A) High
(B) Low
(C) Same
(D) Different

80. 8051 is ———— microcontroller.

(A) Low power TTL 16 Bit
(B) High power CMOS 16 Bit
(C) Low power ECL 8 Bit
(D) Low power CMOS 8 Bit

81. The architect of Modern Cochin harbour :

(A) Maccaulay
(B) Robert Bristo
(C) Sakthanthmpuran
(D) Divan Karunakara Menon

82. Which Indian mountain range has a triangular shape?

(A) Himalayas
(B) Western ghats
(C) Eastsern ghats
(D) Satpura

83. The president of America during First World war :

(A) George Washington
(B) Trueman
(C) Roosewelt
(D) Woodrow Wilson

84. Malabar goes to the hands of the British after the treaty of :

(A) Sreerangapatanam treaty (B) Treaty of salbai

(C) Treaty of Madras (D) Treaty of Mangalore

85. Correct chronological order of dynasties :

(A) Slave, Khilji, Tuglaqs, Lodi (B) Khilji, Tuglaqs, Lodi, Slave

(C) Lodi, Tuglaqs, Slave, Khilji (D) Slave, Lodi, Khilji, Tuglaqs

86. The Malayalam University in Kerala situated in :

(A) Kopttayam (B) Kannur

(C) Palakkad (D) Malapuram

87. The irrigation project in kerala which supplies drinking water to Coimbatore city?

(A) Kanjirapuzha project (B) Siruvani project

(C) Chittur Puzha project (D) Aliyar project

88. The year related with temple entry proclamation :

(A) 1835 (B) 1866

(C) 1836 (D) 1936

89. The Education plan in which "Operation Black Board" is the part :

(A) Secondary Education Commission (B) Indian Education Commission

(C) New Education Policy (D) Sarv Siksha Abhiyan

90. The state where the city of Kanishkapuram situated :

(A) Kashmir (B) Punjab

(C) Bihar (D) Orissa

91. The person who was known as the "Father of Indian Nationalism" :

(A) Balagangadhara Tilak (B) Dadabai Naoroji

(C) Sardar Patel (D) Mahatma Gandhi

92. The first sculpture city in Kerala :

(A) Thrissur (B) Ernakulam

(C) Thiruvananthpuram (D) Kozhikode

93. The Chairman of state re-organaisation committee :

(A) Fazal Ali
(B) Sardarvallabai Patel
(C) V.P. Menon
(D) Jawaharlal Nehru

94. The person who measures first the circumference of the earth :

(A) Kepplar
(B) Galileo
(C) Aryabhatta
(D) Erathosthenes

95. Name the planetary wind :

(A) Monsoon winds
(B) Land and Sea breeze
(C) Westerlies
(D) Local winds

96. Name the coast line between Goa and Gujarat :

(A) Kokan coast
(B) Coromandal coast
(C) Malabar coast
(D) Carnatic coast

97. The district where the National Institute of Technology is situated :

(A) Thiruvananthapuram
(B) Ernakulam
(C) Kannur
(D) Kozhikode

98. The Redha cult temple is the speciality of the architecture of :

(A) Pandyas
(B) Pallavas
(C) Chalukyas
(D) Cholas

99. A Danish settlement in India :

(A) Piplis
(B) Chinsura
(C) Serampur
(D) Cambay

100. A freedom fighter from Kerala who has accompanied with Gandhiji in his Dandi March :

(A) Sankarji
(B) K. Kelappan
(C) P. Krishnapillai
(D) Moidhu Moulavi