T.S - ECET - ECE - 2015 PAPER - SET - D

1. Which of the following draws minimum power from source
   (1) PMMC (2) electronic voltmeter
   (3) electrostatic voltmeter (4) moving iron voltmeter
2. What is dimensionless parameter of the second-order characteristic equation
   (1) damping ratio (2) accuracy
   (3) efficiency ratio (4) transfer function ratio
3. A diac is turned on by
   (1) anode current (2) gate current
   (3) gate voltage (4) breakover voltage
4. A transduction principle which is used primarily in optical sensors
   (1) photoconductive transduction (2) photovoltaic transduction
   (3) electomagnetic transduction (4) piezoelectric transduction
5. A feedback control system in which the controlled variable is mechanical position
   (1) closed-loop feedback control system (2) open-loop feedback control system
   (3) servomechanism (4) gyrosecope
6. Fleming's left hand rule is applied to an electric motor to find out
   (1) direction of rotor rotation (2) polarity of induced electromotive force
   (3) direction of induced electromotive force (4) direction of magnetic field
7. The advantage of a sysnchronous motor in addition to its constant speed is
   (1) high power factor (2) better efficiency
   (3) low cost (4) low power factor
8. A circuit breaker is
   (1) power factor correcting device (2) a device to neutralize the effect of transients
   (3) a waveform correcting device (4) a current interrupting device
9. What is the purpose of a commutator in an electric motor
   (1) to change the direction of the current twice in each revolution
   (2) to change the direction of the current once in each revolution
   (3) to transfer the current from the power source to the coil
   (4) to transfer the current from the coil to the power source

SREE ACADEMY

10. In case, the field of a syncronous motor is under excited, the power factor will be

(1) leading (2) lagging

(3) zero (4) unity

11. Boosters are basically

(1) inductors (2) capacitors

(3) transformers (4) synchronous motors

12. In DSBSC system modulation index is 80%, then how much power can be saved

(1) 12.5% (2) 25%

(3) 75.76% (4) 50

13. If the transmission bandwidth of FM is doubled, then the SNR is

(1) improved doubled (2) improved four - fold

(3) unaffected (4) halved

14. In super heterodyne receiver, Intermediate frequency (IF) is 455 kHz, if it is tuned to 1200 kHz, the image frequency will be

(1) 1655 kHz (2) 2110 kHz

(3) 745 kHz (4) 1055 kHz

15. In generation of modulated signal, a varactor diode can be used for

(1) FM generation (2) PM generation

(3) AM generation (4) PCM generation

16. In PCM, bit duration is defined as

(1) sampling period by number of bits (2) number of bits by sampling period

(3) sampling period x number of bits (4) 2(sampling period x number of bits)

17. Which one of the following modulation schemes gives maximum probability of error

(1) ASK (2) DPSK

(3) FSK (4) PSK

18. AM-SC stands for

(1) amplitude modulated-suppressed carrier (2) amplitude modulated-single carrier

(3) amplitude modulated-synchronous carrier (4) amplitude modulated-self carrier

19. Which type of multiple access method performed in GSM cellular system

(1) only FDMA (2) FDMA and TDMA

(3) CDMA (4) SDMA

20. Bandwidth of each channel is GSM is

(1) 200 kHz (2) 400 kHz

(3) 150 kHz (4) 300 kHz

21. If fm is bandwidth of message signal, the bandwidth for AM is
(1) fm (2) 2fm
(3) 0.5 fm (4) 3fm

22. A radio antenna with two dipole antennas aligned at right angles to each other is
(1) turnstile antenna (2) log periodic antenna
(3) yagi-uda antenna (4) folded dipole antenna

23. A rectangular metal waveguide filled with a dielectric of relative permittivity $\varepsilon_r = 4$, has the inside dimensions 3 × 1.2 cm, the cut off frequency for the dominant mode is
(1) 5 GHz (2) 2.5 GHz
(3) 10 GHz (4) 7.5 GHz

24. The velocity of electonmagnetic wave in a good conductor is
(1) very high (2) equal to speed of light
(3) very low (4) moderate

25. A plane wave is characterized by $\vec{E} = (0.5\hat{x}e^{/x/2})e^{j}(\omega t - \beta z)$ the wave is
(1) linearly polarized (2) circularly polarized
(3) elliptically polarized (4) un polarized

26. A plane electromagnetic wave travels in dielectric medium of relative permittivity 9. Relative to free space, the velocity of propagation in the dielectric is
(1) increased by factor of 9 (2) increased by a factor of 3
(3) unchanged (4) reduced by a factor of 3

27. The electric field due to dipole is inversely proportional to
(1) r (2) r^2
(3) r^3 (4) 1/r

28. The unit of poynting vector P = E × H is
(1) watts (2) watts/m
(3) watts/m^2 (4) watts/m^3

29. Intrinsic propagation constant of medium is
(1) $\sqrt{j\omega\mu(\sigma + j\omega\varepsilon)}$ (2) $\sqrt{j\omega\mu / (\sigma + j\omega\mu)}$
(3) $\sqrt{j\omega\varepsilon(\sigma + j\omega\mu)}$ (4) $\sqrt{j\omega\mu / (\sigma + j\omega\varepsilon)}$

30. Geostationary satellites follow
(1) gircular path (2) elliptical path
(3) inclined path (4) cycloidal path

31. To separate channels in a frequency division multiplex receiver, the circuit blocks necessary are
(1) logic gates (2) band pass filters
(3) integrators (4) low pass filters

SREE ACADEMY

32. Radar detection is limited to line of sight because of

(1) curvature of the earth
(2) no reflections by the ionosphere
(3) long wavelength
(4) short wavelengths

33. A darar receives an echo from a target 20 microseconds after sending the signal. The approximate range of the target is

(1) 300 m
(2) 3000 m
(3) 600 m
(4) 6000 m

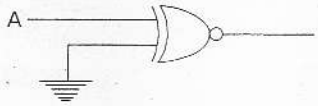
34. A dynamic RAM consists of

(1) 6 transistors
(2) 1 transistor & 1 capacitor
(3) 2 transistors & 2 capacitors
(4) 4 capacitors

35. 2's complement of binary number 0101 is

(1) 1011
(2) 1111
(3) 1101
(4) 1110

36. For the gate in the given figure, the output will be



(1) 1
(2) 0
(3) A
(4) $\bar{A}$

37. The number of digits in octal system is

(1) 7
(2) 8
(3) 6
(4) 9

38. The basic storage element in a digital system is

(1) flip-flop
(2) counter
(3) multiplexer
(4) encoder

39. A full adder can be made out of

(1) two half adders
(2) two half adders and a OR gate
(3) two half adders and a NOT gate
(4) three half adders

40. A counter type A/D converter contains a 4-bit binary ladder and a counter driven by a 2 MHz clock. Then conversion time

(1) 8 μ sec
(2) 10 μ sec
(3) 2 μ sec
(4) 7.5 μ sec

41. ECL has high switching speed because the transistors are

(1) switching between cutoff and saturation regions
(2) switching between cutoff and active regions
(3) switching between active and saturation regions
(4) switching between cutoff and reverse active regions

SSBE ACADEMY

42. If all the LEDs in seven segment display are turned on, the number displayed is
(1) 1 (2) 0
(3) 8 (4) 4

43. If memory chip size is 256 × 1 - bits, the number of chips required to make 1 k byte memory is
(1) 8 (2) 12
(3) 24 (4) 32

44. A 3-bit up-down counter can count from
(1) 000 to 111 (2) 111 to 000
(3) 000 to 111 and also from 111 to 000 (4) 000 to 010 and also from 010 to 000

45. In a D-type latch enable (EN) = 1 and D = 1, the otuput is
(1) 1 (2) 0
(3) don't care (4) tristate

46. In priority interrupt controller (PIC-8259), the register that stores all the interrupt requests in it in order to serve them one by one on priority basis is
(1) interrupt request register (2) in-service register
(3) priority resolver (4) interrupt mask register

47. Registers, which are visible to users and used in programming, are known as
(1) program counter (2) general purpose registers
(3) stack pointer (4) flags

48. Which one of the following devices represents direct memory access controller
(1) intel 8085 (2) intel 8086
(3) intel 8257 (4) intel 8255

49. intel 8086 microprocessor consists____number of control flag bits
(1) 6 (2) 3
(3) 9 (4) 16

50. Which of the following is not a data copy/transfer instruction
(1) MOV (2) PUSH
(3) DAS (4) POP

51. Which of the following instruction is not valid
(1) MOVAX, BX (2) MOV DS, 5000H
(3) MOV AX, 5000H (4) PUSH AX

52. At the end of interrupt service routine, the instuction should be
(1) END (2) ENDS
(3) IRET (4) INTR

53. The BSF (Bit scan forward) instruction scans the operand in the order
(1) from left to right (2) from right to left
(3) from upper nibble (4) from lower nibble

54. The pentium III has the operating frequencies as

(1) 300 MHz, 350 MHz, 400 MHz
(2) 400 MHz, 450 MHz, 500 MHz
(3) 350 MHx, 400 MHz, 450 MHz
(4) 450 MHz, 500 MHz, 550 MHz

55. In following options, which interrupt has highest priority

(1) INTR
(2) INTA
(3) RST 6.5
(4) TRAP

56. There is a compression technique that can be used for sound fields. It is known as

(1) jpeg
(2) mpeg
(3) MP3
(4) GIF

57. Digital images are displayed as a discrete set of

(1) values
(2) numbers
(3) frequencies
(4) intensities

58. The process of converting discrete values into digital values is known as

(1) sampling
(2) filtering
(3) quantizing
(4) anti - aliasing

59. In colour TV receiver, varactor diode is used for

(1) detection
(2) rectification
(3) tuning
(4) switching

60. Following file formats, which format does not support a video file

(1) MP4
(2) AVI
(3) mkv
(4) dll

61. Number of intensity levels in 8-bit image is

(1) 64
(2) 256
(3) 512
(4) 3

62. Data is transmitted using light through a _____ cable

(1) twisted pairs
(2) co-axial
(3) microwave guide
(4) optical - fiber

63. Address size of IP V6 protocol is

(1) 16-bit
(2) 48-bit
(3) 128-bit
(4) 256-bit

64. Where does the repeater reside in OSI model

(1) physical layer
(2) data link layer
(3) network layer
(4) transport layer

65. In the following options which is not a browser

(1) google chrome
(2) internet explorer
(3) mozilla firefox
(4) internet firewall

SPEED ACADEMY

66. Which WLAN IEEE specification allows up to 54 Mbps at 2.4 GHz
(1) IEEE 802. 11G
(2) IEEE 802.11A
(3) IEEE 802.11N
(4) IEEE 802.11B

67. If a network consists of dozens of switches, then how many root bridges wouild have in that network
(1) 4
(2) 1
(3) 2
(4) 6

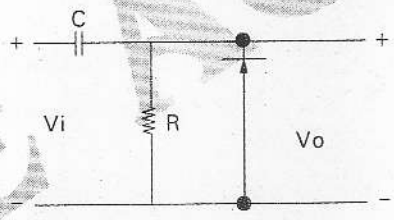
68. WWW stands for
(1) world wide web
(2) world window web
(3) window website writer
(4) web web web

69. Which protocol does ping use
(1) TCP
(2) ARP
(3) ICMP
(4) bootp

70. MOSFET is an acronym for
(1) metal - on - silicon field effect transistor
(2) metal - on - semiconductor field effect transistor
(3) metal - oxide - silicon field effect transistor
(4) metal - oxide - semiconductor field effect transistor

71. The forward voltage across a conducting silicon diode is about
(1) 0.3 V
(2) 0.7 V
(3) 1.7 V
(4) 0.5 V

72. The circuit shown in given figure is



(1) positive clamper
(2) negative clamper
(3) positive clipper
(4) negative peak clipper

73. The mean value of half wave rectified sine wave is
(1) $0.707I_m$
(2) $0.66I_m$
(3) $0.5I_m$
(4) $0.318I_m$

74. Peak inverse voltage (PIV) of each diode in bridge rectifier is
(1) V_m
(2) $2V_m$
(3) $0.5\ V_m$
(4) $3V_m$

SREE ACADEMY

75. In zener diode, increasing doping level leads

(1) to increase the zener potential
(2) to decrease the zener potential
(3) zener potential remains constant
(4) zener potential independent of doping

76. In the following devices which has metal-semiconductor junction

(1) zener diode
(2) bipolar junction transistor (BJT)
(3) schottky barrier diode
(4) light emitting diode (LED)

77. BJT acts as an amplifier in

(1) cutoff region
(2) saturation region
(3) active region
(4) reverse active region

78. Common base configuration has

(1) high voltage gain
(2) low output resistance
(3) high input resistance
(4) high current gain

79. CMRR stands for

(1) common mode rejection ratio
(2) common mode reverse ratio
(3) current modified regulated resistance
(4) common mode regulator ratios

80. A schmitt trigger is

(1) a comparator with only one trigger point
(2) a comparator with two trigger points
(3) a comparator with two trigger points
(4) a comparator with three trigger points

81. IC 555 timmer has _____ number of pins

(1) 5
(2) 7
(3) 6
(4) 8

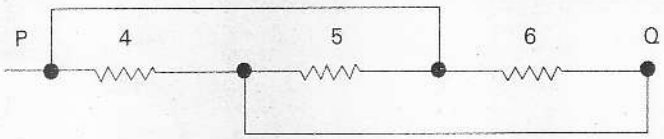
82. KVL is applicable

(1) to a closed loop circuit
(2) to a open loop circuit
(3) at node level
(4) at super nodel level

83. An ideal voltage source should have

(1) high input resistance
(2) low input resistance
(3) moderate input resistance
(4) zero input resistance

84. What is the equivalent resistance between P and Q nodes



(1) 2.22 Ω
(2) 1.62 Ω
(3) 8.22 Ω
(4) 6 Ω

SHREE ACADEMY

85. Thevenin's theorem replaces a complicated circuit facing a load by an
(1) ideal voltage source and parallel resistor
(2) ideal current source and parallel resistor
(3) ideal voltage source and series resistor
(4) ideal current source and series resistor

86. Which of the following is an active component
(1) resistor
(2) inductor
(3) transistor
(4) capacitor

87. Super position theorem is applicable to
(1) voltage only
(2) current and voltage
(3) power only
(4) voltage, current and power

88. The condition of resonance occurs if
(1) $X_L = X_C$
(2) $X_L > X_C$
(3) $X_L < X_C$
(4) $R = X_L + X_C$

89. If a circuit has 2kHz operational bandwiidth, with center frequency of 128 MHz, then Q value is
(1) 64000
(2) 128000
(3) 256000
(4) 32000

90. The upper cut-off frequency of a RC high pass circuit is
(1) zero
(2) $2\pi RC$
(3) $1/2\pi RC$
(4) infinity

91. If VSWR is 3, then the magnitude of relfection coefficient is
(1) 2
(2) 1/2
(3) 1/4
(4) 4

92. A transmission line is terminated by its characteristic impedance, then resultant input impedance is
(1) zero
(2) infinite
(3) doubled
(4) equal to characteristic impedance

93. If two 1μF capacitors are connected in parallel, then equivalent capacitance is
(1) 0.5μF
(2) 0.25μF
(3) 2μF
(4) 4μF

94. An ammeter of 0-25A range has a guaranteed accurancy of 1% of full scale reading. The current measured is 5A. Then limiting error is
(1) 2%
(2) 5%
(3) 3 %
(4) 4%

95. In a CRO which of the following is not a part of electron gun
(1) cathode
(2) grid
(3) accelerating anode
(4) X - Y plates

SREE ACADEMY

96. To have high Q factor of a coil, the wire should be

(1) long (2) thin

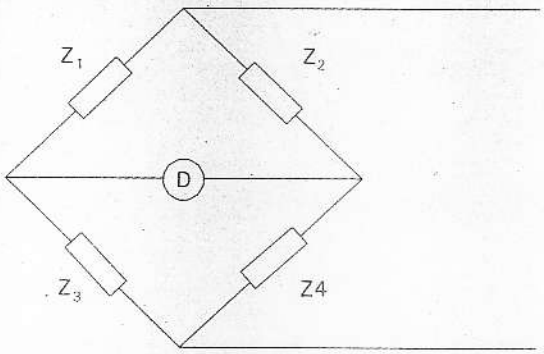
(3) thick (4) long and thin

97. The unit of voltmeter sensitivity is

(1) watt / volt (2) ampere / ohm

(3) ohm / volt (4) volt / ampere

98. In figure, $Z_1 = 200\angle 60^0\Omega$, $Z_2 = 400\angle -90^0\Omega$, $Z_3 = 300\angle 0^0$. Then Z_4 for bridge to be balanced is



(1) $150\angle 30^0\Omega$ (2) $600\angle -150^0\Omega$

(3) $150\angle 90^0\Omega$ (4) $250\angle -30^0\Omega$

99. LVDT is a

(1) pressure transducer (2) displacement transducer

(3) velocity transducer (4) acceleration transducer

100. The most serious problems in AC bridge measurement is

(1) eddy currents (2) leakage current

(3) residual magnetism (4) stray fields

SREE ACADEMY

KEY

1) 2	2) 1	3) 4	4) 1	5) 3	6) 1	7) 1	8) 4	9) 2	10) 2
11) 3	12) 3	13) 2	14) 2	15) 1	16) 1	17) 1	18) 1	19) 2	20) 1
21) 2	22) 1	23) 2	24) 3	25) 3	26) 4	27) 1	28) 3	29) 1	30) 1
31) 2	32) 1	33) 2	34) 2	35) 1	36) 4	37) 2	38) 1	39) 2	40) 1
41) 2	42) 3	43) 4	44) 3	45) 1	46) 1	47) 2	48) 3	49) 2	50) 3
51) 2	52) 3	53) 2	54) 4	55) 4	56) 3	57) 4	58) 3	59) 3	60) 4
61) 2	62) 4	63) 3	64) 1	65) 4	66) 1	67) 2	68) 1	69) 3	70) 4
71) 2	72) 1	73) 4	74) 1	75) 2	76) 3	77) 3	78) 1	79) 1	80) 2
81) 4	82) 1	83) 4	84) 2	85) 3	86) 3	87) 2	88) 1	89) 1	90) 4
91) 2	92) 4	93) 3	94) 2	95) 4	96) 3	97) 3	98) 2	99) 2	100) 4

SREE ACADEMY
ACADEMY ECET /POLYCET
DIPLOMA TUTIONS
Gaddiannaram X Road,
Dilsukhnagar,Hyderabad.
040-66662552/ 65552552
9885352552/ 8143352552