BEL Placement Paper 3

Technical-Electronics

1. The register is a
   1. Simplified unit of a subtractor
   2. Cascaded group of the flip-flop
   3. Binary ripple counter
   4. Data selector

2. The energy of the photo electron depends upon the following factor
   1. Intensity of incident radiation
   2. Quality of the photocathode
   3. Frequency of incident radiation
   4. Type of the incident light source

3. Hall effect is used to determine
   1. Magnetic flux
   2. Current density
   3. Type of semiconductor material
   4. All of the above

4. Which one of the following is the thermistor
   1. Semiconductor device
   2. Microwave device
   3. Platinum resistance thermometer
   4. Thermo-couple device
5. Silicon is having direct band gap
   1. True
   2. False
   3. No gap
   4. None of these
6. Boron is doped in silicon to form
   1. P-type
   2. N-type
   3. Intrinsic
   4. None of these
7. The concentration of impurity in doped silicon semiconductor per atom is
   1. 1018 b. 1022 c.108 d.10-22
8. Conduction in P-type semiconductor is due to
   1. Movement of hole
   2. Movement of electron
   3. Movement of atoms
   4. Movement of electron-hole pair
9. Slope of electrical conductivity Vs temperature in semiconductor is

1. Positive
2. Negative
3. Linear
4. No effect

10. Volt equivalent of temperature of silicon at room temperature (300 deg K) is
1. 0.7V b. 1.1V c. 0.026V d. 16V

11. Carbon is not used as semiconductor because
1. It does not belong to silicon group
2. It is a good conductor
3. It is not a conductor
4. Band gap is very high

12. In forward bias of P-N junction depletion region
1. Increases
2. Decreases
3. Remains the same
4. Breaks down

13. Knee voltage in diode stands for
1. Reverse break down voltage
2. Saturation voltage
3. Threshold of current conduction
4. Peak inverse voltage

14. An ideal semiconductor diode for an AC input acts like
1. Unidirectional switch
2. Bidirectional switch
3. Cuts off AC part
4. Power booster

15. Reverse saturation current in P-N junction diode is due to
1. Hole conduction
2. Electron conduction
3. Minority carrier conduction
4. Majority carrier conduction

16. In the zener diode the break down in the reverse characteristic current is due to
1. Electrons
2. Hole
3. Electron hole pair
4. Crystal ions

17. The percentage of voltage regulation is defined as
1. V no load – V load r100 / V load
2. V load – V no load r100 / V load
3. V load – V no load r100 / V no load
4. V no load r100 / V load

18. Filtering is effected by shunting the load with a
1. Capacitor
2. Resistor
3. Inductor
4. None of these

19. Without applying the biasing voltage the transistor current would be
1. Maximum
2. Minimum

3. No change
4. Zero
20. In the transistor the doping at the emitter is much larger than the base results in
1. Emitter current entirely of holes
2. Emitter current entirely of electrons
3. Base current is due to electron-hole pair
4. Emitter does contribute carrier which can reach collector
21. The largest current carrying component in P-N-P transistor is
1. Electrons
2. Holes
3. Electron hole pair
4. Silicon atoms
22. The circuit shown in the figure represents
1. Rectifier
2. Clamping circuit
3. Clipping circuit
4. Low pass filter

23. Clamping circuit is used for
1. AC to DC conversion
2. Biasing
3. Limiting the amplitude
4. Wave shaping
24. For ideal clipping circuit one should use a diode with cut-in voltage
1. 0.7V b.1.1V c. 0V d. 0.2V
25. The ratio of peak inverse voltage of full wave and half wave rectifier is
1. 1 b. 2 c. 1/2 d. 1/4
26. Which of the following transistor configuration is a power amplifier
1. Common emitter
2. Common base
3. Common collector
4. All of the above
27. In a active mode of a transistor, collector conduction takes place due to
1. Majority carrier
2. Minority carrier
3. Common collector
4. All of the above
28. Common emitter configuration is used for a
1. Current amplification
2. Voltage amplification
3. Current and voltage amplification
4. Charge amplification
29. The transistor configuration where input is emitter and output is collector is called:
1. Common emitter
2. Common base common collector
3. Voltage follower(current gain)
30. Beta of a transistor is given by
1. Ib/Ic b. Ic/Ib c. Ib/Ie d. Ic/Ie
31. Germanium transistor is preferred over silicon transistor in the following application

1. High frequency
2. High power
3. Low voltage
4. Power rectification

32. SCR is based on the principle of
1. Voltage regeneration
2. Current regeneration
3. Power regeneration
4. Power rectification

33. The number of clock pulses arriving at the digital counter input, should be in the form of
1. Decimal
2. Binary
3. Octal
4. Hexadecimal

34. In which of the counter the clock input is common to all flip flops
1. Asynchronous counter
2. Synchronous counter
3. Decade counter
4. Down counter

35. Multiplexer helps in which of the following
1. Repetition of similar circuit construction
2. Selecting all the signal at the output at the same time
3. Prevention of constructing similar circuits
4. Increase in the constructional costs due to repetition circuits

36. Full adder for two inputs can be developed with the help of
1. Two half adder on OR gate
2. One half adder and two OR gate
3. An EXOR gate and AND gate
4. Two AND gates and an OR gate

37. The important use of gray code is for a
1. Ripple counter
2. Full adder
3. Encoder
4. Decoder

38. In which of the code only one bit changes at each time
1. BCD
2. Aiken code
3. Excess 3 code
4. Gray code

39. In Johnson code for N bits, the maximum number can be formed is given by an expression
1. 2.N b. 2N c. 2N – 2N d. None of these

40. The active mode of transistor operation is used in log circuits because of its
1. Non linearity
2. Linearity
3. Switching nature
4. High speed

41. Intermediate frequency in television receiver is
1. 26-46 MHz
2. 1.6-2.3 MHz

3. 455-KHz
4. None of these
42. At absolute temperature, a silicon crystal acts like an insulator because
1. Electrons cannot move through a crystal
2. Electrons are tightly held by other atoms
3. Electrons can break away only by supplying energy
4. All of the above
43. Extrinsic semiconductor is
1. Doped with impurities
2. Exists in the pure state
3. N-type only
4. Only P-type
44. The process of extracting the audio information from the modulated envelope is called
1. Modulation
2. Detection
3. Transmission
4. Oscillation
45. Selectivity of a radio receiver is defined as
1. Ability to reproduce the original frequencies
2. Ability to eliminate wanted frequencies
3. Ability to reject unwanted frequencies
4. Ability to pick up the weak signal
46. Digital counter cannot be used as
1. Clock
2. Timer
3. Event counter
4. Multiplier
47. Distortion in the amplifier is due to
1. Non linearity of the device
2. Inductance presents in the circuits
3. Capacitance
4. Stray effect
48. The purpose of RF amplifier tuning in the radio receiver is
1. To reject all the frequencies
2. To select all the frequencies
3. Only to select required frequencies & amplification
4. To vary the band width
49. The intermediate frequency used in the radio receiver is
1. 455KHz b. 1.6 MHz c. 20 MHz d. 60 MHz
50. The purpose of using tuned circuit between stages in the radio receiver is
1. To increase the selectivity
2. To increase the sensitivity
3. To increase both selectivity and sensitivity
4. To get the detector output
51. In an amplifier, the frequency characteristic may be divided into how many regions
1. Two b. Three c. Four d. Zero
52. Op.amp. has high input impedance because
1. High band width
2. Differential amplifier

3. Current source at input end
4. Common collector configuration
53. Gain of an OP amp. In inverting mode is –Rf / Rn provided, the OP.amp. has
1. Low output impedance
2. Low input bias current
3. High CMRR
4. High open loop gain
54. Slew rate of an OP.amp.is
1. Change of O/p voltage with time
2. Propagation speed
3. Input RC time constant
4. Off set voltage drift
55. Instrumentation OP.amp. is used in application where
1. Two instrument are to be interfaced
2. Input is very low level signal
3. DC signals are involved
4. Differential signals are involved
56. An OP.amp. integrater will be
1. Capacitor at input
2. Diode at input
3. Diode feed back
4. Capacitor feed back
57. A logarithmic amplifier will have
1. Inductor feed back
2. Diode feed back
3. Resistance feed back
4. Thermistor feed back
58. OP.amp. can be converted into capacitor by
1. Increasing bandwidth
2. Removing feed back
3. Increasing input impedance
4. Positive feed back
59. Comparators are used as
1. Switching device
2. Linear amplifiers
3. Power amplifiers
4. High speed amplifiers
60. Typical output impedance of 741 OP amps. is
1. 0.5 W b. 1 K W c. 1 W d. 75 W
61. Typical unity gain bandwidth of 741 OP amps. is
1. 10 MHz b. 100 KHz c. 1 MHz d. 1.5 MHz
62. OP.amp. wein bridge oscillator works when the over all gain is
1. 180 b. 3 c. 1.2 d. 125
63. Important part in a electronic voltage regulator is
1. Error amplifier
2. External pass transistor
3. Reference voltage diode
4. All the above
64. To generate a triangular wave form from a square wave

1. Differentiator is used
2. Integrator is used
3. Logarithmic amplifier is used
4. Clipping circuit is used

65. For multiplying two analog signals which one of the following is used
1. Comparator
2. Hall effect device
3. Gunn diode
4. Tunnel diode

66. Which of the following device is used as an electronic memory element
1. Astable multivibrator
2. Monostable multivibrator
3. Magnetic tape
4. None of these

67. Phase sensitive detector in lock-in-amplifier is used
1. To increase the sensitivity of an instrument
2. To limit the bandwidth
3. To increase the dynamic range of the signal
4. To increase the input impedance

68. In television transmission video signal is
1. Frequency modulated
2. Amplitude modulated
3. Phase modulated
4. delta modulated

69. The Boolean function XYZ + YZ + XZ, after simplification gives
1. X b. Y c. Z d. X+Y+Z

70. Extremely low power dissipation and low cost per gate can be achieved in
1. MOS ICs
2. CMOS ICs
3. TTL ICs
4. ECL ICs

71. Which of the following digital IC families can give maximum fan-out
1. ECL b. PMOS c. HTL d. CMOS

72. A punched card has
1. 22 rows, 90 columns
2. 12 rows, 80 columns
3. 12 rows, 2 columns
4. 8 rows, 128 columns

73. Which one of the following is a 16 bit microprocessor
1. Zilog 80
2. Intel 8085
3. Motorola 6800
4. Intel 8086

74. (0.3125)10 when converted to base 8 gives
1. (0.16)8 b. (0.26)8 c. (0.24)8 d. (0.124)8

75. Excess – 3 code is a
1. Weighted code
2. Cyclic code
3. Error correcting code

4. Self complementing code
76. ASC II code is a
1. Error detecting code
2. Self correcting code
3. An alphanumeric code
4. A weighted code
77. Modulo – 2 addition is represented by
1. f = XY + XY
2. f = XY + XY
3. f = X + XY
4. f = XY + XZ + YZ
78. Which one of the following Boolean identities is correct?
1. XYZ + YZ + XZ = YZ + XZ
2. XYZ + YZ +XZ = XY + XZ
3. XY +XZ = XY + XZ + YZ
4. X + XY = XY
79. SN7410 IC is a
1. Quad 2 input NAND gate
2. Triple 3 input NAND gate
3. Dual M/S J-K flip flop
4. None of these
80. Intel 8085 microprocessor has two registers known as primary data pointers these are
1. Registers V & C
2. Registers D & E
3. Registers H & L
4. None of these
81. Intel 8080 microprocessor has an instruction set of 91 instructions. The op-code to implement the instruction set should be at least
1. 6 bit b. 7 bytes c. 7 bit d. 8 bit
82. A micro programmed computer can have the following memories in its control memory unit
1. Semiconductor ROM
2. Semiconductor RAM
3. Magnetic RAM
4. None of these
83. In digital circuits parallel operation is preferred because
1. It requires less memory
2. Circuitry is simple
3. It is faster than series operation
4. For None of these of the above reasons
84. SN 7401 IC is a
1. Quad 2 input NAND gate
2. Quad 2 input NAND gate with open collector output
3. Quad single input NAND gate with open collector output
4. None of these
85. What is the binary code of (26)?
1. 11001 b. 10001 c. 11010 d. 10100
86. The basic RS flip flops is
1. A bistable multivibrator
2. A monostable multivibrator

3. An astable multivibrator
4. None of these
87. The input impedance of an operational amplifier is
1. Very small
2. Zero
3. Very high but not infinite
4. Infinite
88. Sn 7411 is
1. OP.amp. monolithic and short circuit protection in-built
2. Two input NAND gate
3. Three input NAND gate with open collector output
4. None of these
89. The output voltage of an operational amplifier is
1. 90 deg out of phase from the input
2. 90 deg out of phase from the input
3. 45 deg out of phase from the input
4. 180deg out of phase from the input
90. The equivalent octal number of (492) is
1. 574 b. 547 c. 754 d. 758
91. The equivalent decimal number for gray code 1011 is
1. 14 b. 13 c. 41 d. 31
92. The output will be only if all inputs go to 1 in case of
1. OR gate b. AND gate c. NAND gate d. NOT gate
93. Which of the following circuits is known as half adder?
1. AND circuit
2. OR circuit
3. Exclusive OR circuit
4. None of these
94. Which of the following memories is used to store variable quantities of the data?
1. RAM b. ROM c. PROM d. EPROM
95. Large scale Integrated (LSI) circuits usually contain
1. Less than 10 gates
2. 10 to 100 gates
3. more than 100 gates
4. more than 1000 gates
96. The Boolean expression A + AB + B on simplification can be reduced to:
1. 0 b. 1 c. A + B d. A + B
97. For realizing a decade counter using flip-flops the minimum number of flip-flops required is
1. 4 b. 5 c. 6 d. 10
98. Which logic family is widely used in SSI & MSI applications?
1. ECL b. DTL c. TTL d. None of these
99. An amplitude modulation detector detects
1. The peak value of the modulation signal
2. The envelop of the modulation signal
3. The peak value of the carrier signal
4. The average value of the carrier signal
100. Microwave (MW) links are generally preferred to coaxial cable for TV transmission because:
1. They have less overall phase distortion

2. They are cheaper
3. Of their greater bandwidth
4. Of their relative immunity to impulse noise.

Answer

1. b

2. c

3. d

4. d

5. a

6. a

7. a

8. a

9. b

10. c

11. b

12. b

13. c

14. a

15. c

16. c

17. a

18. a

19. b

20. b

21. b

22. b

23. c

24. b

25. a

26. d

27. a

28. c

29. b

30. b

31. b

32. c

33. b

34. b

35. a

36. a

37. c

38. d

39. b

40. a

41. d

42. d

43. a

44. b

45. c

46. d

47. a

48. c

49. a

50. c

51. c

52. b

53. d

54. b

55. b

56. d

57. d

58. a

59. a

60. a

61. a

62. b

63. d

64. b

65. a

66. c

67. b

68. b

69. c

70. b

71. d

72. b

73. d

74. c

75. d

76. c

77. a

78. c

79. b

80. c

81. c

82. a

83. b

84. b

85. c

86. a

87. c

88. c

89. d

90. c

91. b

92. b

93. c

94. a

95. c

96. b

97. a

98. c

99. b

100. a