Complementry II DIGITAL ELECTRONICS

For BSc Computer Science Off Campus Stream

1. The number of levels in a digital signal is

1. One

2. **Two**

3. Four

4. Ten

2. In any flip-flop, when the Q output is 1, what is the state if the Q terminal?

1. **0**

2. 1

3. Either 1 or 0

3. The slow turning of a potentiometer is

1. Digital input

2. **Analog output**

3. Nature of output depends on voltage

4. It depends on resolution of the potentiometer

4. Which of the following can provide a digital signal?

1. Slow change in the value of a resistor

2. Sine wave

3. **Square wave**

4. Gradual turning of a potentiometer

5. The high voltage level of a digital signal in positive logic is

1. **1**

2. 0

3. Either 1 or 0

6. A device that converts from decimal to binary numbered is called

1. Decoder

2, **Encoder**

3. CPU

4. Converter

7. Decimal 15 in binary system can b e written as

1. **1111**

2. 1110

3. 1100

4. 1000

8. If 4 in binary system is 100 then 8 will be

1. 10

2. 100

3. 111

4. 1000

9. Binary 1010 in decimal system is equivalent to

1. 13

2. 19

3. **10**

4. 23

10. Binary 1111 when subtracted from binary 11111, the result in binary is

1. 111111

2. 1111

3. 1000

4. **10000**

11. Binary 1111 when added to binary 11111 is

1. **101110**

2. 10110

3. 10000

4. 100010

12. Binary 1000 multiplied by binary 1000 gives

1. 10000

2. 100000

3. **1000000**

4. 10000000

13. Which of the following is not valid in binary system?

1. 0x0=0

2. **0x1=1**

3. 1x1=1

4. All of the above

14. Which of the following represents the decimal form of binary 0.0111?

1. 0.1600

2. 0.2728

3. **0.4375**

4. 0.7964

15. Which of the following is decimal equivalent of the binary 1111111?

1. 67

2. 87

3. **127**

4. 167

16. The decimal equivalent of the binary number 10110.0101011101

1. 22.3408216500

2. 22.3408216750

3. 22.3408213125

4. **22.3408203125**

17. Which binary addition is incorrect?

1. 1001.1 + 1011.01 = 10100.11

2. 1000101 + 1000101 = 1001010

3. 0.1011 + 0.1101 = 1.1

4. **1011.01 + 1001.11 = 10111**

18. Which binary addition is incorrect?

1. 1101.1 + 1011.1 = 11001.0

2. 101101 + 1101101 = 1100011

3. 010011 + 0.1110 = 1.0001

4. **1100.011 + 1011.011 = 10111.100**

19. Which binary subtraction is incorrect?

1. 100101 − 100011 = 000000

2. 10000000 - 01000000 = 1000000

3. 10111110.1 − 101011.11 = 110010.11

4. **11111111 − 1111111 = 10000000**

20. Which of the following binary product is incorrect?

1. 1100 x 1010 = 1111000

2. 1.01 x10.1 = 11.001

3. 1100110 x 1000 = 1100110000

4. **None of the above**

21. Binary 1000 will be the result of which of the following

1. Binary 1000 − 100

2. Binary 1011 − 1111

3. **Binary 1111 − 111**

4. Binary 11111 – 1111

22. Which of the binary addition is incorrect?

1. 1001 + 1101 = 10110

2. 10101 + 10011 = 101000

3**. 11111 + 11111 = 100000**

4. 11111 + 10001 + 110000

23. Binary 101010 is equivalent to decimal number

1. 24

2. **42**

3. 44

4. 64

24. Decimal number 5436 when converted into 9's complement will become

1. 4356

2. 4653

3. **4563**

4. 4655

25. Decimal 1932 when converted into 10's complement will become

1. 8868

2. **8068**

3. 8608

4. 8806

26. Octal 16 is equal to decimal

1. 13

2. **14**

3. 15

4. 16

27. According to Boolean algebra, 1+ A+B+C is equal to

1. A+B+C

2. ABC

3. 1+ABC

4**. 1**

28. Which logic gate is similar to the function of two series switches?

1. **AND**

2. OR

3. NAND

4. All of the above

29. Which logic gate is similar to the function of two parallel switches?

1. AND

2. NAND

3. **OR**

4. NOR

30. Which logic function has the output law only when both inputs are high?

1. OR

2. NOR

3. AND

4. **NAND**

31. The decimal equivalent of the hexadecimal number E5 is

1. 279

2. **229**

3. 327

4. 227

32. The radix of a hexadecimal system is

1. 2

2. 3

3. **8**

4. 16

33. Which of the following register pairs can be directly stored in memory

1. BC

2. DE

3. **HL**

4. EF

34. The delay between successive bits for 9600 band rate is approximately 0.1 ms

1. **True**

2. False

3. Maybe

4. None of the above

35. How many inputs can be supplied to a logic gate with a fan in factor of four?

1. Two

2. Three

3. **Four**

4. Eight

36. Which circuit is used for a clock generator?

1. **A free running MV**

2. JK flip-flop

3. Either of A and B

4. Neither of A and B

37. How many flip-flop circuits are needed to divide by 16?

1. Two

2. **Four**

3. Eight

4. Sixteen

38. An index register in a digital computer is used for

1. **Address modification**

2. For indirect address

3. Storing one of the operands

4. Pointing to the stack address

39. An index register in digital computer is register to be used for

1. Performing arithmetic and logic operations

2. Temporary storage of result

3. Counting number of times a program is executed

4. **Address modification purpose**

40. A toggle operation is used

1. Without a flip-flop

2. **With a flip-flop**

3. With a gate circuit

4. With a flip-flop and a gate circuit

41. How many flip-flops are needed for a 4 bit counter?

1. Two

2. Three

3. Four

4. Six

42. Which of the following is used as a data selector?

1. Encoder

2. Decoder

3. **Multiplexer**

4. Demultiplexer

43. The op.amp is used in

1. A/D converters

2. D/A converters

3. **Shifts registers**

4. None of the above

44. DC forward voltage is needed to emit light in case of

1. **LED**

2. LCD

3. Both LED and LCD

4. Neither LED nor LCD

45. When all the seven segments of a display are energized, the number shown will be

1. 0

2. 1

2. 5

4. **8**

46. Which family of logic circuits uses field effect transistors?

1. TTL

2. **CMOS**

3. Both TTL and CMOS

4. Neither TTL nor CMOS

47. Which mode is there in extracting information from storage?

1. **Read mode**

2. Write mode

3. Read and write mode

4. Neither read nor write mode

48. Read and write capabilities are available in

1. **RAM**

2. ROM

3. Both RAM and ROM

4. Neither RAM nor ROM

49. Which of the following is a temporary memory?

1. **RAM**

2. ROM

3. Both

4. None

50. Which of the following changes analog voltage to binary data?

1. **A/D converter**

2. D/A converter

3. Both

4. None of the above

51. Which converter has a binary input?

1. A/D

2. **D/A**

3. None

52. Out of LCD and LED which display consumes the least power?

1**. LCD**

2. LED

3. Both consume same power

53. Which multi-vibrator can be used as a clock timer?

1**. Astable**

2. Bistable

3. Both

4. None of the above

54. When the input to a seven segment decoder is 0100, the number on display will be

1. 0

2. 2

3. **4**

4. 9

55. The decimal value for the BCD coded number 00010010 is

1. 6

2. 10

3. 12

4. **18**

56. Decimal 42 in XS-3 code is

1. 01010101

2. **01110101**

3. 01111001

4. 01010001

57. Decimal number 937 in gray code is written as

1. 110100100111

2. 100 100 100 100

3. 110 100 100 100

4. **111 111 111 111**

58. The segments of a seven-segment display are lettered to a

1. **Clockwise direction**

2. Counter clockwise direction

3. Either of A or B above

59. Current drawn when the number 8 is on an LED display is

1. 140 nA

2. 140 UA

3. **140 mA**

4. None of the above

60. The fan out of a 7400 NAND gate is

1. 2 TTL

2. 5 TTL

3. 8 TTL

4. **10 TTL**

61. Write the octal number that come after 7

1. 8

2. 6

3. A

4. **10**

62, What term is used to refer to the positional value of a digit?

1. **Weight**

2. Radix

3. Decimal

4. Multiplier

63. Monolithic technology is widely used in the manufacture of

1. Antenna

2. Transistors

3. **Integrated circuits**

4. All of the above

64. What is the output of a NOT gate when its input C=0

1. F=0

2. **F=1**

3. F=01

4. F=10

65. The maximum propagation value in case of 7400 NAND gate is

1. 1 second

2. 20 milli-seconds

3. **Less than 20 nano-seconds**

4. Less than 20 pico-seconds

66. The voltage needed for a TTL IC power supply is

1. **5 V dc**

2. 10 V dc

3. 2 V dc

4. 20 V dc

67. A minterm is

1. The minimum term in a Boolean function

2. A prime implicant

3. Always smaller than a maxterm

4. **A square on a karnaugh map**

68. The _____is ultraviolet light erasable and electrically programmable

1. ROM

2. RAM

3. PROM

4. **EPROM**

69. Which of the following is used extensively where lowest power consumption is necessary?

1. **CMOS**

2. NMOS

3. PMOS

4. Any of the above

70. Which statement about the central processing unit is correct?

1. The running programme is stored in the CPU

2**. The instruction just being processed is stored in the CPU**

3. The CPU is a part of the peripherals

4. The CPU is also known as microprocessor

71. Micro-processors find applications in

1. Pocket calculator

2. Scientific instruments

3. Medical equipment

4. **All of the above**

72. Micro-processors were introduced in the year

1. 1951

2. 1961

3. **1971**

4. 1981

73. Once the information is placed into a read-only memory

1. It can be modified easily

2. It is continuously modified

3. **It cannot be modified easily**

4. None of the above

74. Flag bits in arithmetic unit provide

1. **Status type information**

2. Repeatability

3. Facility for rechecks

4. All of the above

75. In LIFO

1. **Only the top of the slack is immediately accessible**

2. Only the top of the slack is never accessible

3. Only the first in is accessible

4. Only the first is in not accessible

76. A micro-computer has a 64 K memory. What is the hexadecimal notation for the first memory location?

1. **0000**

2. FFFF

3. 0FFF

4. 3FFF

77. Which of the following is the most widely used bipolar family

1. DTL

2. **TTL**

3. ECL

4. All of the above

78. The fastest logic family used in high speed applications is

1. DTL

2. TTL

3. **ECL**

79. MOS family that dominates the LSI field is

1. PMOS

2**. NMOS**

3. CMOS

4. None of the above

80. MOS family used extensively where lowest power consumption is necessary is

1. PMOS

2. NMOS

3**. CMOS**

81. A charge coupled device has

1. **Low cost per bit**

2. High cost per bit

3. Low density

4. None of the above

82. In magnetic film memory, the memory element consists of

1. Plated wires

2. Super conductive material

3. **Nickel iron alloy**

4. Dopped aluminium

83. EAROM memory is

1. Magnetically alterable

2. **Electrically alterable**

3. Either A or B

4. None of the above

84. A secondary memory is

1. Always volatile

2. Always costlier than primary memory

3. **Always slower than primary memory**

4. None of the above

85. A state during which nothing happens is known as

1. LDA

2. **Nop**

3. MAR

4. OP code

86. The mnemonics used in writing a program is called

1. **Assembly language**

2. Fetch cycle

3. Micro instruction

4. Object program

87. A fetch cycle is the

1. **First part of the instruction cycle**

2. Last part of the instruction cycle

3. Intermediate part of the instruction cycle

4. Auxiliary part of the instruction cycle

88. SAP-I has _____ T states, period during which register contents change

1. Two

2. Four

3. **Six**

4. Eight

89. In micro-processors like 8080 and 8085, the _____ cycle may have from one to five machine cycle

1. Micro-instruction

2. Source program

3. **Instruction**

4. Fetch cycle

90. The timer is a presettable 24-bit counter that counts TIMER IN pulses. The number that is preset in the timer is called

1. **The terminal count**

2. The ON count

3. The reset

4. The ON pulse

91. In 8355, The ROM is organized as _____words of 8 bits each

1. 2000

2. **2048**

3. 4048

4. 8355

92. When a bit is O in a DDR, it makes the corresponding port pin an _____. On the other hand, a 1 bit programs a _____ pin

1. Output, input

2. Output, output

3. Input, input

4. **Input, output**

93. Status register in the 8156 contains information about

1. The timer

2. The ports

3. **Both A and B**

4. None of the above

94. Status register in the 8156 is read with

1. **IN 20 H**

2. OUT 20 H

3. Either A or B

4. None of the above

95. A pair of 2114s can store _____ words of _____ bits each

1. 2114, 8

2. **1024, 8**

3. 4228, 16

4. 2114, 16

96. The contents of the command register are 23 H, then port C

1. **Is an input port**

2. Is an output port

3. Both input as well as output port

4. None of the above

97. What is the number of non-zero states for a 16 bit binary D/a converter?

1. 65,536

2. 10,000

3. 9,999

4. **65,535**

98. What is the percent resolution of a 12 bit BCD D/A converter?

1. 0.0244%

2. 0.02442%

3. 0.1%

4. 0**.1001%**

99. What do contents of a stack pointer specify?

1. Address of the bottom of stack

2. **Address of the top of stack**

3. Contents of the bottom of stack

4. Contents of the top of stack

100. Which byte of an instruction is loaded into IR register?

1. **First**

2. Last

3. None of these

4. A and B