

Yashwantrao Chavan College of Science, Karad

Question Bank

Digital Integrated circuits (Electronics Paper- II)

Q.1) Select correct alternatives in following .

(1) ASCII is a..... bit code.

- a) 8 b) 7
c) 16 d) 32

2) The BCD code equivalent of decimal 28 is.....

- a) 11100 b) 00101000 c) 11101 d) 1111

3) IC 7404 contains inverters.....

- a) 7 b) 4
c) 6 4) 8

4) The Boolean addition is provided bygate.

- a) AND b) NOT
c) NAND d) OR

5) In K-Map..... eliminates 3 variables.

- a) 1 b) 2
c) 3 d) 4

6) The half adder adds..... bits at a time.

- a) 1 b) 2
c) 3 d) 4

7) The radix of Hexadecimal number system is.....

- a) 2 b) 4
c) 16 4) 1

8) Multiplexer is also known as a

- a) Encoder b) data selector
c) Decoder d) data manipulator

9) A full adder logic circuit will have _____

- a) Two inputs and one output
b) Three inputs and three outputs
c) Two inputs and two outputs
d) Three inputs and two outputs

10) Which of the following are known as universal gates?

a) **NAND & NOR**

b) AND & OR

c) XOR & OR

d) EX-NOR & XOR

11) The gates required to build a half adder are _____

a) EX-OR gate and NOR gate

b) EX-OR gate and OR gate

c) **EX-OR gate and AND gate**

d) EX-NOR gate and AND gate

12) The basic logic gate whose output is the complement of the input is the _____

a) OR gate

b) AND gate

c) **INVERTER gate**

d) XOR gate

13) Perform binary addition: $101101 + 011011$

= ? a) 011010

b) 1010100

c) 101110

d) **1001000**

14) 1's complement of 1011101 is _____

a) 0101110

b) 1001101

c) **0100010**

d) 1100101

15) 2's complement of 11001011 is _____

a) 01010111

b) 11010100

c) **00110101**

d) 11100010

16) The radix of Decimal number system is.....

a) 2

b) 4

c) 16

d) 10

17) The Full adder adds..... bits at a time.

a) 1

b) 2

c) 3

d) 4

18) Multiplexer means

a) Many into one

b) one into many

b) one to more

d) none of

these 19) De-Multiplexer means

.....

a) Many into one

b) one into many

b) one to more

d) none of these

20) In hexadecimal no. system how many characters are used.....

- a) 2 b) 4 c) 5 d) 6
- 21) The radix of Decimal number system is.....
- a) 2 b) 8 c) 16 4) 10
- 22) 1 Nibble means.....bits.
- a) 2 b) 3 c) 4 d) 8
- 23) The NOT logic gate IC is.....
- a) 7404 b) 7402 3) 7408 4) 7400

- 24) The logic gate that provides high output for same inputs_____
- a) NOT
b) X-NOR
c) AND
d) XOR
- 25) K-map is used for _____
- a) logic minimization
b) expression maximization
c) summing of parity bits
d) logic gate creation

Write Long answer in following

- 1) Explain Hexadecimal number system with suitable example.
- 2) State and prove Demorgan's first and second theorems.
- 3) What the neat diagram explain working of full Adder in details.
- 4) With logic diagram and truth table explain the working of 4:1 line Multiplexer
- 5) Explain Octal number system with suitable example.
- 6) Explain Universal Building Block using NOR and NAND Gate.
- 7) With logic diagram and truth table explain the working of 8:1 line Multiplexer.
- 8) With logic diagram and truth table explain the working of 1:8 line De-Multiplexer.
- 9) What the neat diagram explain working of full Subtractor in details.
- 10) With logic diagram and truth table explain the working of 1:16 line De-Multiplexer.

Write Short answer in following

- 1) Explain 2 to 4 line decoder
- 2) Perform the following conversions:
 - a. 1) $(78)_{10}$ decimal to binary 2) $(1011.11)_2$ binary to decimal
 - b. 3) $(175)_{10}$ decimal to octal no 4) $(10001100)_2$ binary to hexadecimal no.
- 3) Explain 1's and 2's complement of binary number? Give examples
- 4) Explain OR Gate using symbol and truth table in detailed.
- 5) Explain how to draw K-Map for 2 variables.
- 6) Explain 1's and 2's complement of binary number? Give examples
- 7) Write short note on Binary no.system.
- 8) What is univarsal gate? How the basic gate obtained using NAND Gate?
- 9) Construct K-Map for OR Gate.
- 10) Explain the working of Half Adder.
- 11) Explain the working of Half subtractor.
- 12) Explain EX- OR Gate in details.
- 13) Write notes on BCD Code.
- 14) Explain OR Gate in details.
- 15) Write the Arithmetic Rule Addition ,Substraction, Multiplication.

- 16) Explain 4 to 1 Demultiplexer in details.
- 17) Explain full adder.
- 18) Write Boolean Algebra Rule.
- 19) Explain NOT Gate using symbol and truth table in detailed.
- 20) Explain full subtractor.