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UTTARANCHAL UNIVERSITY, DEHRADUN
UTTARANCHAL SCHOOL OF COMPUTING SCIENCES
MID TERM EXAMINATION
EVEN SEMESTER 2023-24

BCA | 2ndSemester

FUNDAMENTAL OF COMPUTER ORGNAIZATION | BCA – C205

Time: **1:15 Hour** Max. Marks: **30**

Note: All questions are compulsory.

Q.1- Answer the following questions.(1 x 6 = 6 Marks)

Multiple Choice Questions

a) Which of the following operations is/are performed by the ALU? (CO-5, BL-1)

a. Data Manipulation b. Exponential
c. Square Root d. All of the above

b) Subtraction in computers is carried out by (CO-5, BL-1)

a. 1's complement b. 2's complement
c. 3's complement d. 9's complement

c) In which of the following form the computer stores its data in memory?(CO-3, BL-2)

a. Hexadecimal form b. Octal form
c. Binary form d. Decimal form

d) _____ are an example of the combinational circuit?(CO-3, BL-2)

a. Shift Registers b. Multiplexers
c. Counters d. Flip Flops

e) For which of the following gates the output is zero when one or more inputs are zero?(CO-3, BL-2)

a. OR b. NOR
c. NOT d. AND

f) Convert the binary equivalent 10101 to its decimal equivalent. (CO-3, BL-2)

a. 21 b. 12
c. 22 d. 31

Q.2-Write short note on any two (up to 70 words) **(2 x 3 = 6 Marks)**

a) Explain AND and OR Gate with truth table and block diagram. (CO-2, BL-3)

b) Explain the difference between Hardwired and Microprogrammed Control Units.(CO-3, BL-4)

c) Solve $(6AC)_{16} = (?)_{10}$ (CO-2, BL-3)

Q.3-Attempt any one of the following(1 x 6 = 6 Marks)

a) Explain 3X8 Decoder with a block diagram, truth table and logic diagram. (CO-2, BL-3)

OR

b) Evaluate the Boolean function in SOP form and draw a logic diagram. (CO-3, BL-4)

$$F(A,B,C,D) = \Sigma m(4,5,7,12,14,15) + \Sigma d(3,8,10)$$

Q.4-Attempt any oneof the following.(1 x 6 = 6 Marks)

a) Explain Full Adder with a block diagram, truth table and logic diagram. (CO- 4, BL-4)

OR

b) Explain all types of Addressing Modes. CO- 4, BL-4)

Q.5- Attempt any one of the following. (1 x 6 = 6 Marks)

a) Explain Instruction Cycle with flow chart, and micro operations. (CO- 4, BL-4)

OR

b) Evaluate the Boolean function in SOP and POS form and draw a logic diagram. (CO-3BL4)

$$F(A,B,C,D) = \Sigma m(1,3,5,7,9) + \Sigma d(6,12,13)$$