QP-3258

Seat No.

Total No. of Pages : 3

OCT_NOV_2024 WINTER EXAMINATION

12329 Bachelor of Computer Application(BCAsci) NEP 2.0

Sub. Name: Computer Architecture

Sub. Code: 109808

Day and Date: FEBRUARY ,17-02-2025 **Total Marks: 60**

Time: 10:30 AM To 12:30 PM

Instructions: 1. Figures to the right indicate full marks

Special Inst.: 1) Que.No.1 and Que. No. 7 are compulsory.
2) Attempt any THREE questions from Que. No.2 to Que. No. 6.

Q1) Solve following MCQ. **[10]**

i. Convert binary to octal: (110110001010)2
   A. (5512)8
   B. (6612)8
   C. (4532)8
   D. (4130)8

ii. The decimal equivalent of the binary number (1011.011)2 is
   A. (11.175)10
   B. (11.375)10
   C. (10.123)10
   D. (9.23)10

iii. The gates required to build a half adder are____
   A. EX_OR Gate And AND Gate
   B. EX-OR Gate And OR Gate
   C. EX-NOR Gate And AND Gate
   D. EX-OR Gate And NOR Gate

iv. 2's complement of binary number 0101 is .....
   A. 1101
   B. 1111
   C. 1011
   D. 1110

v. In boolean algebra, the OR operation is performed by which properties?
   A. Associative Properties
   B. Commutative Properties
   C. Distributive Properties
   D. All Of Above

vi. 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

vii. Which of the examples below expresses the commutative law of multiplication?
A. A + B = B + A
B. A • B = B + A
C. A • (B • C) = (A • B) • C
D. A • B = B • A

viii. Why do we use gray codes?
A. To count the no of bits changes
B. To rotate a shaft
C. Error correction
D. Error Detection

ix. Whose operations are more faster among the following?
A. Combinational circuits
B. Sequential circuits
C. Latches
D. Flip-flops

x. Which memory has largest storage capacity among all?
A. Auxiliary memory
B. RAM
C. Associative memory
D. Cache memory

Q2) What are logic gates? Explain different logic gates with their truth tables and diagram. [10]

Q3) What is Flip flops? ,Explain SR and D flip flop with necessary diagrams. [10]

Q4) What is Kaurnaugh map (K' Map)? Why it is used? Explain with an example. [10]

Q5) Explain Binary, Octal and Hexadecimal number system and with suitable examples number conversion from Decimal to Binary, Octal and Hexadecimal? [10]

Q6) Describe in brief Memory Hierarchy of Memory organization in detail. [10]

Q7) Write short note (Any Four out of Six) [20]

a. SOP and POS [5]

b. Decoders and Encoder [5]

c. Half Adder and Full Adder [5]

d. Program Counter and Accumulator registers [5]

e. DeMorgan Laws [5]

f. Shift registers [5]

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -
This Question Paper may be distributed for following Subjects as common code.
सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (12329) Bachelor Of Computer Application (NEP2.0) (109808) Computer Architecture Part 1 SEM 1