

OCT_NOV_2024 WINTER EXAMINATION
12329 Bachelor of Computer Application(BCA) 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_____

[1]

P.T.O.

- 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. $A \cdot B = B + A$
 - C. $A \cdot (B \cdot C) = (A \cdot B) \cdot C$
 - D. $A \cdot B = B \cdot A$
- 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 [10]
diagram.
- Q3) What is Flip flops? Explain SR and D flip flop with necessary diagrams. [10]
- Q4) What is Karnaugh map (K' Map)? Why it is used? Explain with an example. [10]
- Q5) Explain Binary, Octal and Hexadecimal number system and with suitable examples [10]
number conversion from Decimal to Binary, Octal and Hexadecimal?
- 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]

[2]

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|----|---|-----|
| 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