(6 pages) **Reg. No. :** .....

Code No. : 10428 **Sub. Code : JNCN 4 A**

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2018.

Fourth Semester

Computer Application

Non Major Elective — INTRODUCTION TO COMPUTER ARCHITECTURE

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which format is usually used to store data?
   (a) BCD (b) Decimal
   (c) Hexa decimal (d) Octal

2. ———— bus structure is usually used to connect I/O devices.
   (a) Single (b) Multiple
   (c) Star (d) RAM

3. In computers, subtraction is generally carried out by
   (a) 1's complement (b) 10's complement
   (c) 2's complement (d) BCD

4. The sign following by the string of digits is called is ————
   (a) Significant (b) Determinant
   (c) Mantissa (d) Exponent

5. The circuit used to store one bit of data is known as
   (a) Register (b) Encoder
   (c) Decoder (d) Flip flop

6. In a system, which has 8 registers the register id is ———— long.
   (a) 2 bit (b) 3 bit
   (c) 4 bit (d) 8 bit

7. Which memory allows the address space to be larger than the memory space?
   (a) cache memory (b) main memory
   (c) virtual memory (d) auxiliary memory

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8. Cache memory enhances ————————

(a) memory capacity

(b) memory access time

(c) secondary storage capacity

(d) secondary storage access time

9. The logic expression for AND gate is ————————

(a) $X = A + B$

(b) $X = A * B$

(c) $X = \overline{A} + B$

(d) $X = \overline{A} * B$

10. The logic gate that will have high or '1' at its output when any one (or more) of its inputs is high is $a(n)$————————

(a) OR gate

(b) AND gate

(c) NOR gate

(d) NOT Operation

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Discuss about basic operational concepts of computers.

Or

(b) Explain Bus structures.

12. (a) Explain the design of simple adder.

Or

(b) Illustrate addition and subtraction of signed numbers.

13. (a) Explain about register set.

Or

(b) Discuss control logic unit.

14. (a) Explain about semiconductor RAMs.

Or

(b) Discuss cache memories.

15. (a) Explain stack operations.

Or

(b) Explain AND and NOT gates.

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PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain memory and basic I/O operations.

Or

(b) Explain instruction and instruction sequencing.

17. (a) Explain multiplication of positive integers with an example.

Or

(b) Explain integer division.

18. (a) Describe arithmetic and logic unit.

Or

(b) What is addressing modes? Explain in detail.

19. (a) Explain the basic concepts of memory system and virtual memory.

Or

(b) Discuss secondary storage.

20. (a) Explain NAND and NOR gates.

Or

(b) Explain OR gates and queue operation.

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