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NP – 431

II Semester B.C.A. Examination, July/August 2024
(NEP)
COMPUTER SCIENCE
2.1 : Computer Architecture

Time : 2½ Hours
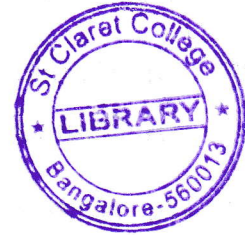
Max. Marks : 60

***Instruction** : Answer **all** the Parts.*

PART – A

I. Answer **any four** of the following :   (4×2=8)

1) Define bit and byte.

2) Give the BCD equivalent of the decimal number $69.27_{(10)}$.

3) List the basic computer registers with their functions.

4) Mention the steps involved in instruction cycle.

5) State any two characteristics of multiprocessor.

6) Define virtual memory.

PART – B

II. Answer **any four** of the following :   (4×5=20)

7) Define flip-flop. Explain the working of a JK flip-flop with a neat diagram.

8) Simplify $F(A, B, C, D) = \sum (0, 2, 3, 4, 6, 8, 10, 11, 12, 14)$ using K-map and draw a circuit diagram.

9) Explain different memory reference instructions.

10) Explain different addressing modes.

11) Explain three state (3-state) bus buffer.

12) Explain memory hierarchy in computer system.

P.T.O.

PART – C

III. Answer **any four** of the following :   (4×8=32)

13) a) Define decoder. Illustrate 3 to 8 line decoder.   5

b) Mention the differences between multiprocessor and multicomputer.   3

14) a) Define shift register. Explain shift register with parallel load with a neat diagram.   5

b) What is an integrated circuit ? Give its classification.   3

15) a) Explain instruction cycle with flow chart.   6

b) Write the reverse polish notation for the expression A * B + C * D.   2

16) Explain data manipulation instructions.   8

17) a) Explain DMA controller with a neat block diagram.   5

b) Compare CISC and RISC.   3

18) a) Write a note on cache memory.   4

b) Explain multithreaded architecture.   4

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