



NP – 317

II Semester B.C.A. Examination, August/September 2023

(NEP Scheme)

COMPUTER SCIENCE

2.1 : Computer Architecture

Time : 2½ Hours

Max. Marks : 60

Instruction : Answer *all* the Sections.

SECTION – A

I. Answer **any four** questions. **Each** question carries **2** marks. (4×2=8)

- 1) Define computer architecture. Mention different types of computer architecture.
- 2) Write a Gray code for decimal number 1 to 10.
- 3) What is register ? Define different types of computer register.
- 4) Differentiate between CISC and RISC.
- 5) Draw a logic diagram for 4-bit arithmetic circuit.
- 6) Define different types of semi conductor memories.

SECTION – B

II. Answer **any four** questions. **Each** question carries **5** marks. (4×5=20)

- 7) Simplify $F(W, X, Y, Z) = \sum (0, 1, 2, 4, 5, 6, 8, 9, 12, 13, 14)$ using K-Map and draw a circuit diagram for the same.
- 8) Define shift register. Explain shift register with parallel load along with a neat diagram.
- 9) Briefly explain common bus system of basic computer with a neat diagram.
- 10) Write a short note on :
Programmed I/O.
- 11) Explain different types of CPU organization.
- 12) Explain memory hierarchy in computer system.

P.T.O.



SECTION – C

III. Answer **any four** questions. **Each** question carries **8** marks. (4×8=32)

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| 13) i) Explain decoder with neat diagram. | 4 |
| ii) Define flipflop. Illustrate working of JK-flipflops. | 4 |
| 14) Explain sequential circuit, logic diagram, state table and state diagram with example. | 8 |
| 15) Draw the flow chart for basic computer operation. | 8 |
| 16) Explain different types of addressing mode. | 8 |
| 17) i) Explain DMA controller. | 4 |
| ii) Compare RISC and CISC processors. | 4 |
| 18) i) Explain memory mapped I/O. | 4 |
| ii) Write a note on virtual memory. | 4 |
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