



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  $F(W, X, Y, Z) = \Sigma(0, 1, 2, 4, 5, 6, 8, 9, 12, 13, 14)$  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)
- 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  
 $A'X \quad A'X + BX$
- 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

## SECTION - B