

S.E. CMPN SEM III C-Scheme June 2026

Time: 3 Hours

Marks: 80

- N:B: 1. All questions are compulsory.
2. Figures to the right indicate full marks.

11/06/26

Q.1

- a) Convert 05
- 456 in to binary
 - $(CDA)_{16}$ in to DECIMAL
 - $(351)_8$ in to Decimal
 - 129 in to BCD
 - 64 in to Gray Code
- b) Create a truth table for the following logical Expression $y = A \text{ AND } (B \text{ OR } C)$ 05
- c) Explain D & T flip flop 05
- d) Differentiate between Hardwired and Micro programmed Control unit 05

Q.2

- a) List out the basic and universal logic gates with the symbol, truth table, output expression 05
- b) What do you mean by BCD? Perform $792 + 128$ using BCD addition 05
- c) Explain the various Addressing Modes 10

Q.3

- a) List the various methods to design the Hardwired control unit and explain any one 05
- b) Explain the Micro instruction format 05
- c) Explain Flynn's Classification 10

Q.4

- a) Draw the Flow chart for Restoring division algorithm and perform $6 \div 2$ 10
- b) Draw the Flowchart for the Booth's Algorithm for signed integer multiplication and Perform the multiplication between 5 and 3 using this Algorithm 10

Q.5

- a) Represent -3.5 using single & double precision format of IEEE 754 standards. 10
- b) Explain the various Bus arbitration methods. 10

Q.6

- Write Short notes on 20
- Cache Coherence
 - PCI bus
 - Instruction Pipelining and its hazards
 - Memory Characteristics
