



Total Pages : 3

B.Sc./6th Sem/COS/26(NEP)

2026

6th Semester Examination (CCFUP : NEP)

COMPUTER SCIENCE

Paper : MJ 13-T

(Single Core Major)

(Microprocessor)

Full Marks : 40

Time : Two Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

Answer any *five* questions : $2 \times 5 = 10$

1. What is the difference between microprocessor and microcontroller?
2. What are the four primary operations of a MPU?
3. How many memory locations can be addressed by a microprocessor with 14 address lines?
4. What is the function of the accumulator?
5. Specify the number of registers and memory cells required in a 128×4 memory chip?
6. Why is the data bus bi-directional?

P.T.O.

(2)

7. How does a microprocessor differentiate between opcode and data?
8. What do you mean by co-processor?

Group - B

Answer any *four* questions : $5 \times 4 = 20$

9. Draw the timing diagram for an Opcode Fetch machine cycle of 8085 microprocessor and mention all the signals including status signals.
10. Explain the flag registers of 8085 microprocessor.
11. Explain the functions of the following pins of 8085 microprocessor: READY, RESET, HOLD, HLDA, INTR.
12. Differentiate between memory-mapped I/O and I/O-mapped I/O.
13. What is the difference between Mode 0, Mode 1 and Mode 2 operations of 8255?
14. How does ALE signal demultiplex the $AD_0 - AD_7$ bus? Explain with diagram.

Group - C

Answer any *one* question : $10 \times 1 = 10$

15. Differentiate between partial and absolute address decoding. Give an example.

16. What is DMA? Which hardware pins are used for DMA control? Draw and explain the architecture of 8237 DMA controller. 2+2+6
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