

Time: 3 Hours

Subject: Computer Organization and Microprocessor

Max. Marks: 70

Note: (i) First question is compulsory and answer any four questions from the remaining six questions. Each questions carries 14 Marks.
(ii) Answer to each question must be written at one place only and in the same order as they occur in the question paper.
(iii) Missing data, if any, may be suitably assumed.

1. a) Differentiate Computer Organization and Computer architecture.
b) What is programmed I/O?
c) Draw memory hierarchy.
d) What is the word length of 8086, data bus size of 8086 and address bus size of 8086?
e) Explain 8257 DMA controller features.
f) Explain JMP and JNC instructions of 8086 microprocessor.
g) What are the applications of RS-232?
2. a) Explain addressing modes with a numerical example covering all addressing modes.
b) Depict significance of Status bits C,S,Z,V with a neat diagram and also with an example.
3. a) Differentiate Isolated I/O vs Memory mapped I/O with a neat table.
b) Draw IOP-CPU-IOP communication.
4. a) Draw main memory using ROM chips and their address map.
b) Draw working of cache memory with an example.
5. a) Draw pin diagram of 8086 microprocessor and briefly explain address and data pins.
b) Explain usage and purpose of Segment registers of 8086 CS, DS, SS, ES along with an example 8086 program how we use them in programs.
6. a) Explain 8255 ports and also operating modes.
b) Explain 8253 operational modes.
7. a) Explain 8086 instructions MOV, PUSHA, OUTS, DEC, IMUL, NOT, SHR, with an example.
b) Write an 8086 program for sorting of five 8 bit numbers in ascending order, along with its expected inputs and outputs.