



BOARD QUESTION PAPER: MARCH 2025

Computer Science Paper - II

Time: 3 Hours

Max. Marks: 50

Instructions:

- i. All questions are compulsory.
- ii. Figures to the right indicate full marks.
- iii. Draw a neat and labelled diagram whenever necessary.
- iv. Use of any type of calculator is not allowed.
- v. Comments are must in assembly language programs.

1. (A) Select the correct alternative and rewrite the following:
 - (a) The arithmetic instruction which affect only carry flag is _____. (1)
 - (i) DAD
 - (ii) ADD
 - (iii) ADC
 - (iv) SBB
 - (b) _____ is not a vector interrupt. (1)
 - (i) TRAP
 - (ii) JHT INTR
 - (iii) RST 7.5
 - (iv) RST 6.5
 - (c) In 8051 size of internal ROM is _____. (1)
 - (i) 4 K bytes
 - (ii) 2 K bytes
 - (iii) 8 K bytes
 - (iv) 16 K byte
 - (d) The conversion from digital to analog and vice versa is done by _____. (1)
 - (i) Repeater
 - (ii) Hub
 - (iii) Router
 - (iv) MODEM
- (B) Answer **any two**: (6)
 - (a) What is Micro-processor? Give at least two examples of 8-bits and 16-bits Micro-processor.
 - (b) Explain direct and immediate addressing mode of 8085 Micro-processor with examples.
 - (c) Explain contention and token passing access method in brief.
2. (A) Answer **any two**: (6)
 - (a) Explain organization of ALU with simple block diagram.
 - (b) Explain the following instruction of 8085 Micro-processor:
 - (i) LDAX D
 - (ii) XCHG
 - (iii) RAR (Consider cy = 0)
 - (c) Define Network Topology. Explain BUS and RING Topologies with diagram.
- (B) Answer **any one**: (4)
 - (a) Explain the following registers in 8085 Micro-processor:
 - (i) Accumulator
 - (ii) Program Counter
 - (iii) Decoder
 - (iv) General purpose register
 - (b) Explain the advantages of the following features of Pentium Processor:
 - (i) Dual pipe lining
 - (ii) On chip cache
 - (iii) Branch prediction
 - (iv) 64-bits data bus



3. (A) Answer **any two**: (6)
- (a) What are the primary function of a Micro-processor? (Any Three)
 - (b) Explain the functions of following pins of 8085 Micro-processor:
 - (i) $IO/\overline{M}$
 - (ii) HLDA
 - (iii) READY
 - (c) Define Micro-controller. State any four advantages of Micro-controller over Micro-Processor based system.
- (B) Answer **any one**: (4)
- (a) Explain the memory register mapping for 8051 Micro-controller with neat diagram.
 - (b) What is Protocol? Explain the concept of TCP/IP protocol.
4. (A) Answer **any two**: (6)
- (a) What is Interrupt? Explain Maskable and Non-maskable Interrupts.
 - (b) Accumulator contain data ABH ad register D contains the data 09H. What will be the contents of the accumulator after execution of each of the following instruction independently:
 - (i) XRA D
 - (ii) ADD D
 - (iii) ORI 55H
 - (c) Explain Fibre-optic Cables in details with diagram.
- (B) Answer **any one**: (4)
- (a) What is Flag Register? Enlist different flags provided by 8085 Micro-processor and explain with suitable examples.
 - (b) Explain the following characteristics of transmission media:
 - (i) Bandwidth
 - (ii) Band Usage
 - (iii) Alternation
 - (iv) E.M.I.
5. Answer **any two**: (10)
- (a) A block of data stored in memory location from 2600 H to 2609 H. Write Assembly Language Program to transfer the data block in reverse order starting from memory location 2700 H.
 - (b) A block of data stored in memory location 3001 H and length of the block is stored at 3000H. Write Assembly Language Program to count the data BBH appeared in the given block. Store the count of the memory location at 3100H.
 - (c) Write an Assembly Language Program to find out 2's complements of five numbers which are stored in memory locations starting from 4100 H and stored the result in memory location starting from 4200 H.

OR

5. Answer **any two**: (10)
- (a) A 8-bit number stored in memory location BABA H. Write an Assembly Language Program to add each bit of the given 8-bit number and store the result at memory location FAFA H.
 - (b) Write an Assembly Language Program to divide Hexa decimal number stored in the memory location 5000 H by Hexa decimal number stored in memory location 5001 H. Store the quotient at 5002 H and remainder at 5003 H.
 - (c) Write an Assembly Language Program to generate the Fibonacci number upto 5 terms. (Fibonacci terms 00H, 01H, 01H, 02H, 03H)