

2019

Part – II

COMPUTER SCIENCE

(Honours)

Paper – IV

Full Marks – 90

Time : 4 Hours

*The questions are of equal value for any group / half.*

*The figures in the right-hand margin indicate marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

**GROUP – A**

Answer any **two** of the following questions :

- |    |   |      |
|----|---|------|
|    |   | 15×2 |
| 1. | (a) Draw the timing diagram for the instruction MVI M,24H.                | 6    |
|    | (b) Write down the task of READY, HOLD & HLDA pin of 8085 microprocessor. | 6    |
|    | (c) What is co-processor ?  | 3    |

P.T.O.

2. (a) Define T-state, Machine cycle and instruction cycle. 6
- (b) Convert the following instruction :
- $$X = \frac{A+B}{C-(D \times E)}$$
- into zero address instruction ,one address and two address instruction. 6
- (c) What is the difference between combinational ALU and sequential ALU. 3
3. (a) Write a delay routine for 1 sec delay. 5
- (b) What is MOT (Machine - OP Table) and POT(Pseudo Table)? 4
- (c) What is loader ? What are the functions of loader? 2+4
4. (a) What are the different cache write operations? 5
- (b) Write down the pass 1 algorithm for macro processor? 5
- (c) Write the wilke's micro programmed control unit? 5

### GROUP - B

Answer any **five** questions : 8x5

5. (a) Define seek time and latency time. 2+2

- (b) What is tri-state buffer ? What is its application ? 2+2
6. (a) What are the differences between RISC and CISC architecture ? 4
- (b) What is bus arbitration ? 2
- (c) What is PSW ? 2
7. (a) What is the difference between Hardwired and microprogrammed control unit ? 4
- (b) Write an assembly language program to transfer 10 bytes of data stored from d200H to d209H into C400H to C409H. 4
8. Write an assembly language program to multiply 09H × 24H 8
9. Design a 8085 based microprocessor based system to interface memory of two 2k RAM and four 1k ROM and specify each block of memory. 8
10. (a) Write down the control word for BSR mode and I/O mode of 8255A. 4
- (b) Design the separate read write instruction signal for memory and I/O ? 4
11. (a) What is the difference between linkage editor and linking loader ? 4

(b) Describe the function of first pass of assembler. 4

12. Describe the set associative mapping of cache memory in details of tag, word etc. 8

### GROUP – C

Answer any **five** questions : 4×5

13. Write down the steps of CALL instruction of 8085 MP. 4

14. Write down the steps of micro operations for fetch cycle. 4

15. Write a short note on 'Relocating Loader'. 4

16. Why microprocessor is so called micro ? Justify. 4

17. Write down the six control signals of 8255A chip. 4

18. What is the difference between 'compile and go loader' and 'assembles' ? 4

19. What is the function of the following instructions: SHLD 2400H, RAL. 4

20. Design a 4 bit carry look - ahead adder. 4

[Internal Assesment : 10]