

**M. C. A. First Semester P. G. D. C. S.
First Semester Examination**

COMPUTER ORGANIZATION

Paper - 1 CS 1/1 MCA 1

Time : Three Hours] [Max. Marks : 80

- N. B. :** (1) Due credit will be given to neatness and adequate dimensions.
(2) Assume suitable data wherever necessary.
(3) Illustrate your answer wherever necessary with the help of neat sketches.
(4) Use pen of Blue/Black ink/refill only for writing the answer book.

1. (a) Explain evolution of computers with generations. 7
(b) Explain stored program computer architecture with the help of diagram. 7

OR

2. (a) What are the functional units and components in computer organisation ? 7
(b) Explain with the help of diagram, the concept of program development tool. 7

3. (a) Give the difference between packed decimal and unpacked decimal. 6

(b) Draw the following diagram :—

(1) Combinational logic circuit based ALU.

(2) Sequential logic circuit based ALU. 7

OR

4. (a) Explain how computers represent data internally. 4

(b) Perform addition operation on given binary number.

(1) 1 0 0 0 1 1 0 (2) 1 1 1 0 1 1 1

+ 0 0 1 1 1 1 1 + 1 1 1 0 1 1 1

4

(c) Subtract given number by using 2's complement method.

(1) 1 0 0 0 1 (2) 0 1 1 1 0 0

- 0 0 0 1 1 - 0 1 0 1 0 1

5

5. (a) Explain in brief the concept of RISC and CISC. 6

(b) What is processor organisation ? Explain G. P. R. based organisation and stack based organisation. 8

OR

6. (a) What are the addressing techniques ? Explain. 7

(b) Explain in brief the concept of fetch and decoding unit. 7

7. (a) Explain instruction set design influence on pipelining. 7

(b) Explain in brief the concept of Pentium processor. 6

OR

8. (a) Explain instruction Pipeline and Pipeline performance. 7

(b) Explain the following terms :—

(a) Simple Addressing Mode.

(b) Complex Addressing Mode. 6

9. (a) What is memory hierarchy ? Explain levels in the hierarchy. 6

(b) What are semiconductor ROM ? Also, Write down the concept of PROM, EPROM and EEPROM. 7

OR

10. (a) Explain with diagram memory chip organization. 7

(b) What is tag array and data array ? Explain. 6

11. (a) Explain different mapping function and address translation. 7

(b) Explain bus arbitration with different methods. 6

OR

12. (a) What are the input devices ? Explain in brief the working of any one input device. 7

(b) Explain Video Display unit and Flat Pannel display. 6