

**B. Tech 7th Semester Examination**  
**Computer Architecture & Organization (NS)**

EC-411(d)

**Time : 3 Hours**

**Max. Marks : 100**

*The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.*

**Note :** Attempt five questions in all, selecting one question from each of sections A, B, C, D and Question 9 of Section E is compulsory. All questions carry equal marks.

**SECTION - A**

1. Discuss in brief the history of development of computers. (20)
2. (a) Describe the basic format used to represent the floating point numbers.
- (b) Convert the decimal 1000.11 into binary, octal and hexadecimal codes.
- (c) Convert Hexadecimal FEA 9.2E into binary, octal and decimal system.
- (d) Convert octal 654.72 into binary, decimal & hexadecimal systems. (20)

**SECTION - B**

3. (a) 
$$\left. \begin{array}{l} x = 1001.101 \\ y = 1101.111 \end{array} \right\} \text{both in binary}$$
using 2's complement method  
find  $x-y$  and  $y-x$ . (10)
- (b) Explain Booth's Algorithm (for binary multiplication) using example. (10)

4. Why the study of addressing modes is important? List the various addressing modes and explain each of them with example and also discuss their applications. (20)

**SECTION - C**

5. What is the role of control unit in a computer? What do you mean by microprogrammed control unit? Discuss the comparison of microprogrammed control unit and hardwired controlled unit. (20)
6. Write notes on:
  - (a) Paging and Segmentation
  - (b) Cache memory. (20)

**SECTION - D**

7. List the various I/O data transfer techniques and discuss them alongwith their merits and demerits. (20)
8. Mention the various mass storage computer devices. Discuss the principal of operation of how data is stored and how it is read in these devices. Compare the feature of these devices. (20)

**SECTION - E (Compulsory)**

9. Explain the followings:
  - (a) Use of RS 232.
  - (b) Difference between hardware and software interrupts.
  - (c) What do you mean by fragmentation?
  - (d) What is special about flash memory?
  - (e) How negative numbers are accounted in computer?
  - (f) Associative law of algebra.
  - (g) Error in floating point representation.
  - (h) What is the significance/importance of instruction format?
  - (i) What do you understand by pseudo-operations?
  - (j) Role of traps. (10×2=20)