Hall Ticket No | | | | | | | | | | | Question Paper Code: AEC010

INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Four Year B.Tech V Semester End Examinations (Regular) - November, 2018

Regulation: IARE – R16

COMPUTER ORGANIZATION

Time: 3 Hours **(ECE)** **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

UNIT – I

1. (a) Explain the basic operational concepts of computer organization. **[7M]**
   (b) What are the various types of instructions used to perform operations on data and provide computational capabilities for the computer? Explain briefly. **[7M]**

2. (a) Explain in detail the CPU organization. **[7M]**
   (b) List out the various types of addressing modes and explain any five addressing modes with example. **[7M]**

UNIT – II

3. (a) Describe pipeline. Illustrate four stage instruction pipeline with a neat sketch. **[7M]**
   (b) Apply booth's algorithm for multiplying the below numbers Multiplicand = 10101 and multiplier = 001110. **[7M]**

4. (a) Why we are using Robertson algorithm and explain briefly about Robertson algorithm. **[7M]**
   (b) Draw and explain the flow chart for arithmetic addition & subtraction algorithm. **[7M]**

UNIT – III

5. (a) Explain the concepts on Nano Programming in detail. **[7M]**
   (b) Describe the characteristics of super scalar processing. **[7M]**

6. (a) Briefly explain about design of control unit. **[7M]**
   (b) Briefly explain about various types of conflicts occur in instruction pipeline. **[7M]**

UNIT – IV

7. (a) Write a note on **[7M]**
      i. Optical Memories
      ii. Multilevel Memories
   (b) Describe in detail the different mapping methods in cache memory? **[7M]**

8. (a) What is an auxiliary memory? Write about magnetic disks. **[7M]**

   (b) Draw the neat sketch of memory hierarchy and explain the need of cache memory. **[7M]**

UNIT – V

9. (a) What are multiprocessors? Write the characteristics of multiprocessors. **[7M]**

   (b) Explain in detail about DMA driven data transfer technique. **[7M]**

10. (a) Write a note on: **[7M]**

   i. RISC and CISC processors

   ii. Vector processor

   (b) Explain in detail about handshaking for asynchronous data transfer and what is the four different data transfer conventions involved in handshaking methods. **[7M]**

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