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Uni. Roll No.

Program: B.Tech. (Batch 2018)

Semester: 4th

Name of Subject: Computer Architecture and Microprocessor

Subject Code: PCIT-108

Paper ID: 16237

Time Allowed: 03 Hours**Max. Marks: 60****NOTE:**

1. Parts A and B are compulsory
2. Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
3. Any missing data may be assumed appropriately

Part – A**[Marks: 02 each]**

1.

- a. What is an instruction code?
- b. Explain the role of control unit in memory.
- c. Define pipelining with suitable example.
- d. Differentiate software and hardware interrupt.
- e. Mention what are the basic components of a Microprocessor.
- f. Determine the number of clock cycles that it takes to process 200 tasks in a 6-segment pipeline.

Part – B**[Marks: 04 each]**

2. Differentiate Direct Addressing and Indirect Addressing.
3. Illustrate applications of Microprocessor.
4. Compare Hardwired and Microprogrammed Control Unit.
5. Explain Status bit Register conditions in detail.
6. Non pipelined system takes 130ns to process an instruction. A program of 1000 instructions is executed in non-pipelined system. Then same program is processed with processor with 5 segment pipelines with clock cycle of 30 ns/stage. Determine speed up ratio of pipeline.
7. Explain Reduced Instruction Set Computer (RISC) and Complex Instruction Set Computer (CISC).

Part – C

[Marks: 12 each]

8. Explain different types of mapping processes
OR

Draw and explain microcontroller- 8051 architecture.

9. Explain various Addressing modes with suitable example of each.
OR

Demonstrate the flowchart of Instruction Pipeline.
