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BIEL-025

B.Tech. – VIEP – ELECTRONICS AND COMMUNICATION ENGINEERING (BTECVI)

00568 **Term-End Examination**

June, 2018

BIEL-025 : ADVANCED MICROPROCESSOR ARCHITECTURE

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any* ***seven*** *questions. All questions carry equal marks. Use of scientific calculator is permitted.*

1. Discuss the steps involved in designing a computer system. State the factors on which the cost of a computer system depends. *7+3=10*

2. (a) Which are the special function registers found in CPU ? State their functions. *5*

(b) What is Micro-operation ? Explain different types of micro-operations used for writing RTL with an example. *5*

3. (a) What is Pipelining ? With a specific example prove that pipeline executes faster than a non-pipeline system. *2+5*

(b) State the difficulties in implementing pipelines. *3*

4. (a) What is Instruction level Parallelism ? Give the Flynn's classification and an example of each. *5*

(b) What is Dynamic Scheduling ? State its uses. *5*

5. What is Cache memory ? Why is mapping required between cache memory and main memory ? Discuss different types of mapping used along with their advantages and limitations. *10*

6. (a) What is memory consistency ? Discuss. *5*

(b) State the advantages of shared memory architecture over centralized memory architecture. *5*

7. Briefly explain the salient features of CISC Processor and VLIW Architecture. *5+5*

8. Differentiate between : 5+5

(a) Micro-programmed control unit and Hard wired control unit.

(b) IO mapped IO and Memory mapped IO.

9. (a) What is the role of address sequencer in a Micro-programmed control unit ? How is it achieved ? 5

(b) Draw a circuit to implement ashr, ashl, cil and cir micro-operations on a register of 4-bits. 5

10. Write short notes on the following : 5+5

(a) Multi-Bus Architecture

(b) Symbolic Processors