BIEL-025

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

Term-End Examination

ΟΟ439 December, 2017

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. (a) Discuss the ways to measure computer performance. *5*

   (b) Explain three speed-up techniques used in modern computers. *5*

2. (a) What is Deadlock ? Explain the methods to prevent/avoid a deadlock situation. *7*

   (b) What is a Vectored Interrupt ? State its advantage over non-vectored interrupt. *3*

3. (a) What are the different types of cache memory that are used in modern computers ? Explain. 5

   (b) Discuss the update policy used for updating main memory in a computer system having cache memory. 5

4. What is a Uniprocessor system ? Discuss the mechanisms that are used for parallel processing in a uniprocessor system. 2+8

5. (a) What is Virtual Memory ? Discuss the virtual to real page address translation process. 2+5

   (b) State the advantages of segmented memory. 3

6. What is the concept of vector processing ? Discuss the characteristics and methods for enhancing the capability of vector processing. 3+4+3

7. What is Dynamic Scheduling ? How is it used to overcome data hazards and in reducing branch penalties ? 3+7

8. (a) What is an Instruction Set ? What is meant by instruction set completeness ? 5

   (b) Discuss different types of buses used in a computer system. 5

9. (a) What is a Superscalar Processor ? Give its applications. *5*

(b) Briefly discuss the models of memory consistency. *5*

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

(a) VLIW Architecture

(b) Microprogrammed Control Unit