No. of Printed Pages : 3

BICSE-001

B.Tech. – VIEP – COMPUTER SCIENCE AND ENGINEERING (BTCSVI)

Term-End Examination

00346

June, 2016

BICSE-001 : EMBEDDED SYSTEM

Time : 3 hours *Maximum Marks : 70*

Note : *Answer any* ***seven*** *questions. All questions carry equal marks.*

1. (a) Discuss the operation of interrupts controller in embedded system. 5

   (b) Explain the hardware and software timer units. Also compare their performances. 5

2. (a) How does ISA bus architecture differ from PCI bus architecture ? 5

   (b) Differentiate between micro-processor and micro-controller. 5

3. (a) Describe the hard real time and soft real time systems. Give an example of each system. Which one system is harder to design ? Justify your answer. *7*

(b) Enumerate the sequence of events that takes place in interrupt handling. *3*

4. Explain the embedded software development process. *10*

5. (a) List the features of P and V semaphores and how these are used as a resource key, as a counting semaphore and as a mutex. *7*

(b) Why do you need at least one timer device in an embedded system ? *3*

6. (a) Describe the scheduling algorithms of RTOS and explain the concept of Round Robin scheduling. *5*

(b) Discuss the role of RTOS in interrupt handling and task scheduling. *5*

7. (a) Explain the data transfer using direct memory access in embedded system. *5*

(b) Describe the features of USB and CAN buses. *5*

8. (a) Explain the architecture of a micro-processor. 5

(b) Write the steps taken by micro-controller on activation of interrupt. 5

9. (a) Why is shared memory process communication difficult ? 5

(b) Enumerate the tests needed in Real Time System. 5

10. Write short notes on the following :

(a) Flash Memory 5

(b) Hardware Partitioning 5