POKHARA UNIVERSITY

Level: Bachelor | Semester: Fall | Year : 2014
Programme: BE | Full Marks: 100
Course: Embedded Systems | Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.
Attempt all the questions.

1.	a)	What is an embedded system? Explain the classification of embedded system in detail.	2+5
	b)	Explain the importance of the following processors in embedded systems: i. Digital signal processor ii. ASSP.	4+4
2.	a)	Why single purpose processor is required when general purpose processors can execute a variety of programs and are readily available? Give reasons.	7
	b)	How does a programmer view a microprocessor-based embedded system? What are his/her concerns?	8
3.	a)	Briefly define each of the following: mask-programmed ROM, PROM, EPROM, EEPROM, flash EEPROM.	9
	b)	Define Cache mapping. Explain set-associative mapping with figure.	1+5
4.	a)	Explain the difference between port-based I/O and bus-based I/O. Also explain the benefits that an interrupt address table has over fixed and vectored interrupt methods.	4+4
	b)	What are task states? Describe task scheduling.	2+5
5.	a)	Differentiate between clock communication and task synchronization. Also explain Interrupt processing.	4+4
	b)	Discuss the instruction set of intel 8051 family microcontroller.	7
6.	a)	Write a VHDL program for 4-bit Full adder circuit.	7
	b)	Discuss the various styles of modeling used in architecture body of	8

hardware description in VHDL.

7. Write short notes on: (**Any two**) 2×5

   a) Daisy-chain Arbitration.

   b) Cross compiler and Debugger.

   c) Memory write and Storage Permanence.