POKHARA UNIVERSITY

Level: Bachelor
Programme: BE
Course: Embedded System

Semester: Fall

Year : 2016
Full Marks: 100
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) Define Embedded System? Explain the different characteristics of Embedded System. Give few application areas. 7
   b) Design a synchronous sequential machine that produces output 1 when input sequence is 1011 using JK flip – flop. 8
2. a) Design a custom single – purpose processor to calculate GCD between two integers. 8
   b) Explain general purpose processor design with a suitable diagram. 7
3. a) Design 4KX8ROMs using 1KX8 ROMs.(1K=1024 words) 7
   b) What is arbitration? Explain the steps used in Daisy - Chain arbitration with a block diagram. 8
4. a) Describe the major functions of real – time kernel. 8
   b) Explain Vectored Interrupt with a neat diagram. 7
5. a) Define Debugger, Downloader and Cross – Assembler. 7
   b) Write an assembly level program for 8051 to transfer a word "POKHARA" stored in ROM starting at location 250H to RAM starting at locations 50H onward. 8
6. a) Explain different modeling styles in VHDL. 7
   b) Write a VHDL code which results an output '1' when a sequence "1101" is detected else an output results a '0'. 8
7. Write short notes on: (**Any two**) 2×5
   a) DMA
   b) Clocking communication and Task synchronization
   c) Combinational logic