

# POKHARA UNIVERSITY

Level: Bachelor  
Programme: BE  
Course: Embedded System

Semester: Fall

Year : 2015  
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) Explain the components of embedded system hardware 7  
b) Explain with an example how to optimize custom single purpose processors. 8
2. a) Explain in brief about combinational and sequential logic? 7  
b) Define Target and Development processor. Explain three ways to test the program intended for Embedded System. - 8
3. a) What is Memory Hierarchy. Explain the write ability and Storage performance of Memory devices 7  
b) Sketch the internal design of 8X4 ROM Memory. Explain different types of ROM. 8
4. a) Why DMA is used? Explain in detail. 8  
b) Describe wireless communication protocols used in embedded system. 7
5. a) List three ways in which an RTOS handles the ISRs in a multitasking environment. 9  
b) Write down the truth table and VHDL code for 3 bit counter. 6
6. a) Write an assembly language program based on 8051 to display the number of bottles filled with milk by a bottlers company. Also show the Connection Diagram. 7  
b) Write a VHDL code for octal to binary encoder. 8
7. Write short notes on: (Any two) 2x5
  - a) Direct mapping
  - b) Cross-Compiler
  - c) Task, task states and task Scheduling