POKHARA UNIVERSITY

Level: Bachelor   Semester: Fall   Year   : 2017
Programme: BE   Full Marks: 100
Course: Real Time System   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 Real Time System? Explain the significance of the studying Real Time System.   8
   b) Explain the common misconceptions of Real Time System with suitable examples.   7
2. a) Compare and contrast Procedural and Structural Real Time design techniques.   8
   b) Define Polled Loop. Explain the Foreground and Background systems.   7
3. a) Explain the Fixed Priority Scheduling and Dynamic Priority Scheduling with examples.   8
   b) Explain the Critical Region and Semaphore.   7
4. a) Compare and contrast Priority Inversion and Priority Ceiling Protocol.   7
   b) Explain the response time analysis for fixed period systems.   8
5. a) Verify the schedulability under RM and construct the schedule of the following task set: 7

τ_i	e_i	ρ_i
τ_1	3	7
τ_2	5	16
τ_3	3	15

   b) Define the Reliability. Explain the characteristics of Reliable Software System.   8
6. a) Explain the N-Version Programming with suitable examples.   8
   b) Explain the Real Time POSIX signals.   7
7. Write short notes on: (**Any two**)   2×5
   a) Deadline
   b) Context Switching
   c) Clocks & Timer