Seat No: _____ **Enrollment No: _____**

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

M.Tech. Winter 2018 - 19 Examination

Semester: 1 **Date: 10/12/2018**
Subject Code: 203212101 **Time: 10:30 am to 1:00 pm**
Subject Name: Real Time Embedded System Design **Total Marks: 60**

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 A) Explain Real-Time Operating System and its important functions. **(05)**

B) What do you mean by embedded system? Discuss the various components of embedded System design. **(05)**

C) Explain the memory accelerator module in LPC2148. **(05)**

Q.2 **Answer the following questions**. (Attempt any three) (Each five marks) **(15)**

A) Compare cooperative and preemptive scheduling.

B) Explain the CAN bus arbitration with Bit timing.

C) Name the various types of memories used in an embedded system and explain in brief the functions assigned to them.

D) Discuss various data types used in C.

Q.3 A) Explain with necessary sketch, interfacing the LED with LPC2148 and write C language program to ON and OFF the LED continuously. **(07)**

B) Compare microprocessor, microcontroller, DSP and ASSP. **(08)**

OR

B) Give the detail of kernel functions in an OS. **(08)**

Q.4 A) Discuss the basic block diagram of architectural model of ARM Controller. **(07)**

OR

A) Draw circuit diagram to interface unipolar stepper motor with ARM7. Write program to rotate motor in clockwise direction. **(07)**

B) Explain the operation of Phase Locked Loop in LPC2148. How can you set the required CPU clock frequency? **(08)**