Name: **Enrolment No:**	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2019

Program/course: B. Tech (CSE + CLT) **Semester : VII**
Subject: Embedded Systems **Max. Marks : 100**
Code : CSEG 417 **Duration : 3 Hrs**
Instructions: All questions are compulsory. This question paper contains 11 questions.

SECTION A

S. No.		Marks	CO
Q 1	Analyze the difference between Volatile and Non Volatile Memory.	**4**	**CO1, CO2**
Q 2	Why do we have different kinds of Microcontroller?	**4**	**CO1, CO2**
Q 3	How to solve the issues of a Bus fight and Localized Brownout situation?	**4**	**CO2**
Q 4	What are the specification in designing the Embedded Systems?	**4**	**CO2**
Q 5	What is an Interrupt? Define the kinds of Interrupts with their respective usages.	**4**	**CO3**
	SECTION B		
Q 6	What are the attributes of an embedded system, and why we need embedded system when we have a general purpose Computer?	**10**	**CO1, CO2**
Q 7	What is more important in an embedded system, Task or RTOS?	**10**	**CO4**
Q 8	What are the differences between round robin and round robin with interrupts in the system optimization for embedded software?	**10**	**CO3**
Q 9	Why Memory management is not required in an Embedded System? OR Analyze the use of Polling vs Interrupt.	**10**	**CO3**
	SECTION-C		
Q 10	How much time will be required for a code to run on a 500MHz 8 bit Microcontroller for sorting 20 random 2-digit numbers? Explain with the timing diagram. OR Explain in detail the design issues and techniques in embedded system development.	**20**	**CO2, CO5**
Q 11	Design a system which monitors the water level of the tank and automatically switches on the pump motor when ever tank is empty. The motor is switched off automatically when container or overhead tank is full. The main principle used in this project is "water conducts electricity".	**20**	**CO1, CO2, CO3, CO4, CO5**