

**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**End Semester Examination, April/May 2018**

**Course: Microprocessor and Embedded Systems**

**Semester: VI**

**Program: B.Tech-CSE + All IBM Courses**

**Time: 03 hrs.**

**Max. Marks: 100**

**Instructions: All Questions are mandatory.**

**SECTION A**

S. No.		Marks	CO
Q 1	What are the characteristics of Embedded System? Explain them?	5	CO1
Q 2	Explain memory structures of RAM and ROM and How to interface these memories in 8085?	5	CO2
Q 3	How timer and counter are different in 8051? Use TMOD, TCON SRF and write a program to glow LED for one second?	5	CO2
Q 4	Why Semaphore Wait and Semaphore Give are used in critical section? How is semaphore different from others IPC's?	5	CO3

**SECTION B**

Q 5	Explain in details about priority inversion, priority inheritance and priority ceiling? Explain them with diagram?	10	CO4
Q 6	Explain all the objects of IPC mechanism in details?	10	CO4 CO5
Q 7	Draw the Block diagram of ARM? What are the uses of local bus, AMBA bus and VPB bus?	10	CO3 CO5
Q 8	A. Exploit the Memory Hierarchy used in embedded systems? How memory transfers from one location to other? B. Write 8085 assembly language program to perform following conversion using 8085 instruction set: ASCII to Decimal Conversion?	5 5	CO5 CO2

**SECTION-C**

Q 9	Design an elevator, which has the following conditions: A. Building having 10 floors. B. Elevators has two motors, one for opening the door and other for moving up and down.	10 10	CO1 CO2
Q 10	Q9 continuation A. Seven segment display to show 0-10 floors B. Green LED and Red LED has to display the status of elevator 6M With the following condition design and write the code/algorithm?	10 10	CO3