Sanjay Ghodawat University, Kolhapur

2020-21

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EXM/P/09/00

Year and Program: TY, B.Tech	**School of Technology**	**Department: Electronics**
Course Code: ECE306	**Course Title: Embedded Systems**	**Semester : VI**
Day and Date: Wednesday,09.06.2021	**End Semester Examination**	**Time:2 Hrs. Max Marks:50**

Instructions: 1) All Questions are compulsory 2) Draw diagrams wherever necessary

		Marks	Bloom's Level	CO
Q.1	**Answer the following (any Two)**			
a)	Draw and explain ARM core data flow model.	8	L1	CO1
b)	Write the features of ADC module in LPC2148. List of all SFR's required for configuration.	8	L2	CO1
c)	A stepper motor is connected to p0.4-p0.7 of LPC2148. Write an Embedded C program to rotate the motor in clockwise direction. Mention how do you change the direction and speed of the motor.	8	L3	CO2
Q.2	**Answer the following (any two)**			
a)	Define Embedded System. Discuss Embedded System design metrics.	8	L1	CO1
b)	Design a subsystem to interface LCD to LPC2148 in 4-bit mode. Show assumed pin connections and configure accordingly. Write an Embedded C program to display "SGU Kolhapur" on LCD.	8	L4	CO2
c)	Design a subsystem to interface 4*4 matrix keyboard with LPC2148. Assume, draw and configure keypad matrix. Write an Embedded C program to identify pressed key.	8	L5	CO2
Q.3	**Answer the following (any two)**			
a)	Which communication protocol is preferred in Car and other automobiles? Explain the working and advantages of that protocol.	9	L4	CO3
b)	Explain with Pseudo code how semaphores protect shared data. With an example discuss about Priority Inversion.	9	L3	CO4
c)	Write a short note on following a) States of Taskb) Inter-task communication	9	L2	CO4

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