



Sanjay Ghodawat University, Kolhapur

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

2018-19

EXM/P/09/01

Year and Program: 2018-19
F.Y. M. Tech.

School of Technology

Department of Electronics Engineering

Course Code: EES505

Course Title: Advanced
Embedded Systems

Semester – I

Day and Date: ~~Monday~~
21/12/2018 *Friday*

End Semester Examination
(ESE)

Time: *10:00 to 1:00 pm*
Max Marks: 100

Instructions:

- 1) All main questions are compulsory.
- 2) Assume suitable data wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Draw diagrams wherever necessary.

Q.1	Solve any Three	Marks	Bloom's Level	CO
a)	List out different types of Embedded Systems? With a neat diagram describe the components of Embedded Systems	06	L ₁	CO1
b)	Briefly explain embedded system's design metrics.	06	L ₂	CO1
c)	Describe the features of Timer module in LPC2148 and mention SFRs associated with it.	06	L ₃	CO2
d)	Write an embedded C program to blink 8 LEDs connected P0.0 to P0.7	06	L ₁	CO2
Q.2	Solve the following questions			
a)	Draw and explain functional block diagram of MSP430G2553	08	L ₂	CO3
OR				
a)	Draw Timer_A module of MSP430G2553. Explain TACTL register.	08	L ₂	CO3
b)	Write a program to convert analog input connected P1.1 to its digital equivalent using ADC10 module of MSP430G2553. Turn on the LED connected to P1.0, if ADC10 output exceeds 25% of its maximum value	08	L ₃	CO4
OR				
b)	Write a program for sensing a key/push button using interrupt. An LED should turn on to indicate key press. Key is connected to P1.3 and LED is connected to P1.6	08	L ₃	CO4

Q.3 Solve any Two				
a)	With simplified block diagram explain key characteristics of the Cortex-M0+ processor.	08	L ₂	CO1
b)	Brief the Advantages and applications of the ARM Cortex-M0 and Cortex-M0+ Processors	08	L ₁	CO2
c)	Explain different exception types on the Cortex-M0 and Cortex-M0+ Processors	08	L ₂	CO3
Q.4 Solve any Two				
a)	Draw and explain PSoC 42x7-BL4xx family block diagram. List its key features.	08	L ₁	CO5
b)	Explain different chip operational modes and power modes of PSoC4	08	L ₂	CO5
c)	Draw and explain working of WDT in PSoC4	08	L ₂	CO5
Q.5 Solve any Two				
a)	With neat sketches explain features and working of UART protocol with respect PSoC4	08	L ₂	CO6
b)	Draw UBD block diagram and explain its features	08	L ₂	CO6
c)	With neat sketches explain any two working modes of TCPWM protocol with respect PSoC4	08	L ₃	CO6
Q.6 Solve any Three				
a)	With neat diagrams explain SPI Protocol	06	L ₂	CO6
b)	List out and explain different Low Power Modes in MSP430	06	L ₂	CO3
c)	Draw and explain BLE architecture	06	L ₁	CO6
d)	Explain different functional modes and power modes of BLESS	06	L ₂	CO6
