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Question Paper Code: BES001



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

M.Tech I Semester End Examinations (Regular) - February, 2017

Regulation: IARE-R16

EMBEDDED C

(Common to Computer Science and Engineering|Embedded Systems)

Time: 3 Hours

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

UNIT – I

1. (a) Discuss the classifications of embedded system? Elaborate the process of developing embedded software. [7M]
- (b) Write an embedded code for the following [7M]
 - i. Simple super loop demonstration.
 - ii. Simple central heating system.
2. (a) Define an embedded system? List out the features of 8051 microcontroller and draw the pin diagram of 8051 microcontroller. [7M]
- (b) Explain about memory organization in 8051. [7M]

UNIT – II

3. (a) Write a simple program for counting the number of times that a switch is pressed and released. [7M]
- (b) Describe the need for pull up resistors in switches. [7M]
4. (a) Develop an embedded C program in order to perform bitwise operations on specified data. [7M]
- (b) List out the bitwise operators in C? Develop an embedded C program for super loop application which copies the values from port1 to port2. [7M]

UNIT – III

5. Develop an embedded C program for the following using 8051 microcontroller. [14M]
 - i. Project header (main.h)
 - ii. Port header (port.h)
6. (a) Illustrate the process of goat-counting using switches concept/ develop an embedded C program for restructuring the goat counting? [7M]
- (b) Discuss briefly the classification of programming languages into different generations. [7M]

UNIT – IV

7. (a) Explain the creation of hardware delays using Timer 0 and Timer 1. [7M]
- (b) Develop an embedded C program for creating hardware delay. [7M]
8. (a) Discuss for not using the Timer2. Explain the need for timeout mechanism. [7M]
- (b) Develop an embedded C program for testing loop timeouts. [7M]

UNIT – V

9. (a) Write an embedded C program for the intruder alarm system in project header file and port header file. [7M]
- (b) Explain the operation of a main control panel for the alarm system. [7M]
10. Write an embedded C program for the intruder alarm system in project header file and port header file. [14M]