

**Code No: I6805/R16**

**M. Tech. I Semester Regular/Supple Examinations, Jan/Feb-2018**

**EMBEDDED C**

**Common to VLSI&ES (68)/ES&VLSI (48)/VLSID &ES (77)/ES &VLSID (81)**

**Embedded Systems (55)**

**Time: 3 Hours**

**Max. Marks: 60**

*Answer any FIVE Questions  
All Questions Carry Equal Marks*

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| 1. a | Draw the pin diagram of Atmel 8051 microcontroller and explain the function of each pin in detail                              | 6M |
| b    | List out the Futures of embedded C along with its applications   | 6M |
| 2. a | Draw the on-chip memory RAM organization of 8051 microcontroller and explain its operation                                     | 6M |
| b    | Explain the different terms in power consumption of 8051 microcontroller<br>(i)Normal mode (ii)Ideal mode (iii)Power down mode | 6M |
| 3. a | Write an embedded code for Reading and writing bits from port 1 to port 2 along with flowchart and algorithm                   | 6M |
| b    | What is Pull-up resistor? Explain the importance of Pull-up resistor concept in microcontroller                                | 6M |
| 4. a | What is Switch De-bounce? Explain the concept of Dealing with Switch bounce with one example                                   | 6M |
| b    | Explain the comparison of simple and generic version of reading switches of a microcontroller in detail                        | 6M |
| 5. a | Draw the schematic representation of Port Header and explain its operation along with C code                                   | 6M |
| b    | Write an Restructuring Code for Goat counting and explain its operation  | 6M |
| 6. a | Draw the high-level schematic view of a simple autopilot system and explain its operation                                      | 6M |
| b    | Draw and Explain the following special function registers in detail<br>(i)TCON (ii)TMOD  | 6M |
| 7. a | What is delay? Explain the procedure for creating a portable hardware delay along with embedded C code                         | 6M |
| b    | Write short notes on need for Timeout mechanisms in detail   | 6M |
| 8. a | Draw the architecture of main control panel for the alarm system and explain its operation                                     | 6M |
| b    | Explain the different states in software architecture of intruder alarm system in detail                                       | 6M |