

FACULTY OF INFORMATICS**B.E. 4/4 (I.T.) II – Semester (Main) Examination, May / June 2015****Subject: Embedded Systems****Time: 3 Hours****Max.Marks: 75****Note: Answer all questions from Part A. Answer any five questions from Part B.****PART – A (25 Marks)**

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| 1 | Why microcontroller has chosen for embedded system? | 2 |
| 2 | Explain the sample of requirement form | 3 |
| 3 | Draw the bit configuration of any one special function register | 2 |
| 4 | Differentiate XCH and XCHD instructions. | 2 |
| 5 | What is an interrupt? Mention different interrupts of 8051 based on their priority? | 3 |
| 6 | Explain priority inversion | 3 |
| 7 | Compare and contrast message queues and pipes | 2 |
| 8 | List out the laboratory tools that are used in embedded system | 3 |
| 9 | What are the data types does the SHARC support? | 2 |
| 10 | Explain bus protocols. | 3 |

PART – B (5x10 = 50 Marks)

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| 11 a) | Discuss the challenges and difficulties in the design of embedded computing system. | 5 |
| b) | Give the bit configuration of any three Special Function Registers. | 5 |
| 12 a) | Illustrate the addressing modes of 8051 microcontroller. | 5 |
| b) | Write a program to add two 16-bit numbers. The numbers are 3CE7H and 3B8DH. Place the sum in R7 and R6; R6 should have the lower byte. | 5 |
| 13 a) | Assume that register A has packed BCD. Write a program to convert ASCII to packed BCD. | 5 |
| b) | Explain different display devices. | 5 |
| 14 a) | What is a shared data problem? How to solve it? | 5 |
| b) | What are the standard features of time functions and events in RTOS. | 5 |
| 15 a) | Discuss soft real-time and hard real-time systems. | 5 |
| b) | Give the procedure to get the embedded software into target system. | 5 |
| 16 a) | Explain two modes of Logic Analyzers. | 5 |
| b) | Give the advantages of Logic Analyzers over emulators. | 5 |
| 17 | Compare and contrast: | |
| a) | ARM processor Vs SHARC processor | 5 |
| b) | CAN bus Vs 12C bus | 5 |