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B.E. SEMESTER VI (REGULAR) EXAMINATION 2015

SUBJECT CODE: EE-603 **SUBJECT NAME: Microcontrollers and their Applications**

DATE: 4/5/2015 **TIME: 10:30 am to 1:30 pm** **TOTAL MARKS: 70**

Instructions:

1. **Answer each section in separate Answer sheet.**
2. **Use of Scientific Calculator is permitted.**
3. **All questions are compulsory.**
4. **Indicate clearly, the options you attempted along with its respective question number.**
5. **Use the last page of main supplementary for rough work.**

Section 1

Q:1 **(All Compulsory)**

(A) Explain different types of semiconductor memory. 5

(B) Write the program using assembly language program/embedded C to put data in memory Locations 40H to 44H and add them (stored in Memory Locations 40H to 44H). 5

(C) The number A6h is placed somewhere in external RAM between locations 100h and 0200h. Find the address of that location and put that address in R6 (LSB) and R7 (MSB). 5

OR

(C) Explain: Editor, Assembler, Compiler and linker. 5

Q:2 **Answer the following Questions**

(A) Draw the pin diagram of ADC0804 and give the function of each pin. 5

(B) Explain Bit Level Boolean Operation with control register address. 5

OR

(A) Draw the pin diagram of ADC0848 and give the function of each pin. 5

(B) Explain ADC and DAC interfacing. 5

Q:3 **Answer the following Questions**

(A) Explain Generating a sine wave using DAC with C code. 5

(B) Explain LCD Interfacing with 8051 microcontroller 5

OR

(A) Explain PWM generation using 8051 microcontroller. 5

(B) Explain How the speed and direction of DC motor can be controlled using microcontroller. 5

Section 2

Q:4 **(All Compulsory)**

(A) Write the difference between Microprocessor and Microcontroller 5

(B) Draw and Explain the block diagram of 8051 microcontroller. 5

(C) Explain Following Data types: 5

unsigned char, signed int, sbit, bit, sfr

OR

(C) Explain Jump, Call and Subroutine, Call and Return instruction of 8051 microcontroller. 5

Q:5 **Answer the following Questions**

(A) Explain TCON and TMOD special function register. 5

(B) Draw and Explain structure of P0 and P1 ports in 8051 microcontroller. 5

OR

(A) How serial data transmission can be done using SCON and SBUF 5

(B) Give difference between RISC and CISC. 5

Q:6 **Answer the following Questions**

(A) State and Explain the major reasons for writing microcontroller program in C instead of assembly language. 5

(B) Explain the different types of Interrupts available with 8051 microcontroller. 5

OR

(A) Explain Harvard Architecture. 5

(B) Give Bit format of PSW in 8051 microcontroller. Explain bit significance of each bit. 5

***** All the Best *****