

Exam.Code:0929
Sub. Code: 6596

2063

B.E. (Electronics and Communication Engineering)
Fifth Semester
EC-506: Advanced Microcontrollers and Applications

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Explain the following:-

- a) While creating a sketch in Arduino IDE different file extensions are used with source code Explain
 - i.) .h
 - ii) .cpp
 - iii) .pde
- b) Explain reactive environment and time constrains in microcontroller
- c) Concept of code efficiency
- d) TIFR and TCCR2
- e) Bootloader and JTAG (5x2)

UNIT - I

- II. In Embedded System, reactive environment and time constrains play vital role why? Further, explain the application specific characteristic of an embedded system. (10)
- III. Write a program to count up from 00 to FF and send the count to port B. Use call subroutine for sending the data to Port B and another one for time delay. Put a time delay of 5ms between each issuing of data to port B. (10)
- IV. How 1 MIPS per Mhz is achieved in AVR for corresponding unique results, functions per cost, functions per clocks, and functions per power-unit. (10)

UNIT - II

- V. In order to enhance the compatibility of Arduino Uno various shields are attached. You are required to design home automation system using a shield that can control appliances at far end (within a locality). (10)

P.T.O.

(2)

- VI. Interface 16x2 LCD with Arduino Uno board and write a programme to display "HELLO." on it. (10)
- VII. Explain the functional block diagram of accelerometer based gesture control robot using Arduino board. (10)

x-x-x