1129

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.   Attempt the following:-

   a) Which is the default boot-loader for the Arduino Uno?

   b) Name the two basic functions of the Arduino IDE.

   c) In which language Arduino software was written?

   d) What is the IDE toolbar of Arduino?

   e) What are the three important parts of Arduino?

   f) What are the functions of time in Arduino?

   g) Explain the configuration of 8-bit AVR timer.

   h) Name two open source RTOS.

   i) Differentiate RTOS vs. OS.

   j) Explain the various Mobile OS?   (10x1)

UNIT – I

II.   Draw and explain the basic architecture of the Atmega- 8 controller used in Arduino.   (10)

III. Name and compare the various operating systems used for embedded systems.
                                                                          (10)

IV.   Explain in details the configuration of the 16-bit timer and counter for ATMEGA8 controller.   (10)

UNIT – II

V.   Write the code to interface the matrix keypad with Arduino and also display the key pressed on it using the proper interfacing diagram.   (10)

VI.   Explain the various functional blocks of the home automation system using RF control.   (10)

VII. Write a program and interfacing diagram to build the gesture control Robot using the accelerometer.   (10)

x-x-x