Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

EI/IC-703(New) (GS)

B.E. VII Semester

Examination, December 2017

Grading System (GS)

Introduction to Microcontrollers for Embedded Systems

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions out of eight.
ii) All questions carry equal marks.

1. a) Compare CISC and RISC design philosophy.
   b) Explain the addressing modes of ARM7 processor.

2. a) What is embedded system? Discuss various components of embedded system.
   b) With neat diagram explain the internal RAM organisation.

3. a) Write an assembly language program to accept 8 bit number from port 1. Check whether the number is equal to 09H, if it is equal add 03H to it and send it to port 0 otherwise complement the number and send it to port 2.
   b) Explain the interrupts and interrupt vector table briefly.

4. a) What is PWM? Explain duty cycle formulation and discuss the advantages and disadvantages of PWM.
   b) Explain the general types of pulse width modulation.
   c) What is Real time clock? Explain RTC for implementing a software timer.

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5. a) Explain UART serial port communication briefly.
   b) Discuss the features of TIVA based embedded system.

6. a) Differentiate between asynchronous and synchronous interfaces.
   b) Discuss the features and uses of sensor hub booster pack.

7. a) What is IOT? How IOT works? Explain IOT as network of networks? Discuss its applications.
   b) Explain the various wireless protocols and its applications.

8. Write short notes on the following :
   a) Zigbee
   b) DMA
   c) GPIO
   d) SPI protocol

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