Registration no:

8th Semester Regular / Back Examination 2016-17
EMBEDDED SYSTEM DEVELOPMENT
BRANCH(S): CSE, IT, ITE
Time: 3 Hours
Max Marks: 70
Q.CODE: Z149
Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1   **Answer the following questions:**   (2 x 10)

   a) What is the primary goal of Real-Time Operating System?

   b) Explain PLD.

   c) Explain Mailbox.

   d) What do you mean by Superscalar?

   e) Explain Watchdog Timer.

   f) How does the RTOS know which semaphore protects which data?

   g) What is NVRAM?

   h) What do you mean by release time and response time of a real time task?

   i) Why Embedded System is called as Real-Time?

   j) What are the features of Event?

Q2 **a)** Explain LCD Controller with example.   **(5)**

   b) Explain with diagram how a Tool Chain Works.   **(5)**

Q3 **a)** Explain Reentrancy. How to decide a function is Reentrant or not?   **(5)**

   b) Explain Hard Real-Time Scheduling.   **(5)**

Q4   What is Semaphore? Explain how the execution can be done in RTOS   **(10)**
      by using Semaphores.

Q5 a) Discuss Stepper Motor controller with Hardware diagram and Pseudo-code to control the motor. **(5)**

b) What is Task? Explain the different states. **(5)**

Q6 a) Explain briefly Cross-Compilers. **(5)**

b) Differentiate Soft and Hard Real-Time Operating System. **(5)**

Q7 a) Explain briefly about Instruction Set Simulators. **(5)**

b) Discuss how the shared Data can be protected? **(5)**

Q8 **Write short notes on any two from the following.** **(5 x 2)**

a) ISR

b) Flash

c) OTP ROM

d) UART