Registration No. : | | | | | | | | | | |

Total number of printed pages – 2

B. TECH

PECS 5408

Eighth Semester Regular Examination – 2015

EMBEDDED SYSTEM DEVELOPMENT

BRANCH (S) : CSE, IT

QUESTION CODE : J 166

Full Marks – 70

Time : 3 Hours

*Answer Question No. **1** which is compulsory and any **five** from the rest.*

The figures in the right-hand margin indicate marks.

1. Answer the following questions : 2×10

   (a) Define a system. How it is different from embedded system ?

   (b) What are the typical characteristics of an embedded system ?

   (c) What do you mean by SoC ?

   (d) Explain clock driven scheduling with example.

   (e) List the features of MISRA C for embedded programming.

   (f) Explain the role of actuator in embedded system design.

   (g) What do you meant by gatecounts ?

   (h) List different mechanism used for testing embedded system.

   (i) Explain state chart with an example.

   (j) How CAN bus different from data bus and address bus ?

2. (a) Describe the architecture of a typical micro controller with a neat diagram. 5

   (b) Explain the basic processors and hardware units in the embedded system. 5

P.T.O.

3. (a) Explain the Embedded System on Chip (SoC) with example. 5

(b) How task scheduling is achieved in real time operating system ? Explain with an example. 5

4. List the charetaristics of hybrid scheduler. How it is different from event driven scheduler ? 10

5. (a) Explain state transition diagram of RTOS. 5

(b) Explain the scheduler in which RTOS insert into the list and the ready task for sequential execution in a co-operative round robin model. 5

6. (a) With a neat diagram explain the microkernel based systems with example. 5

(b) Explain the mechanism of flash memory. Differentiate between SRAM and DRAM. 5

7. (a) Briefly explain the development life cycle of embedded system. 5

(b) What are the requirement of partitioning hardware and software in developing embedded application ? 5

8. Write shortnotes on : 5x2

(a) POSIX-RT

(b) VHDL.