Total No. of Questions : 6]

SEAT No. :

P5149

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B.E./Insem - 555

B.E. (E & TC) (Semester - I)

Embedded Systems & RTOS

(2012 Pattern) (Elective -I)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates:

1) ***Answer Q.1 or Q.2, Q.3 or Q.4, Q5 or Q.6.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Assume suitable data if necessary.***

Q1) a) Explain following design metrics: **[5]**

i) NRE cost

ii) Time to Market

iii) Power

b) Explain system development spiral model with diagram. **[5]**

OR

Q2) a) What are different types of embedded processor technology? Explain their merits and demerits of them. **[5]**

b) Explain system development V shape model with diagram **[5]**

Q3) a) Explain different states of task with services as an example. **[6]**

b) Explain with example why mutual exclusion is necessary while using shared resources. **[4]**

OR

Q4) a) Explain how priority inversion occurs with example of three tasks diagram. **[6]**

b) What is difference between preemptive kernel & Non Preemptive Kernel. **[4]**

P.T.O.

Q5) a) What is difference between functions OSSEMPend() and OSSEMAccept(). Which one of these functions is used in ISR and why? **[4]**

b) Explain following functions in RTOS **[6]**

i) OSINIT()

ii) OSSTART()

OR

Q6) a) Explain with block diagram use of memory management and queue functions for data acquisition system. **[6]**

b) Explain following function **[4]**

i) OSQPost()

ii) OSQPend()