Total No. of Questions : 10]

SEAT No. :

P3990

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[4959]-1142
B.E.(I T)
REAL TIME & EMBEDDED SYSTEMS
(2012 Course) (Semester-II)(End Sem)(Elective-IV)(414464B)

Time :2½Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answer Q1 or Q2,Q3or Q4, Q5 or Q6 , Q 7 orQ 8, Q 9 or Q10.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data if necessary.***

Q1) a) Discuss the advntages and disadvantages of top-down and bottom-up design process in embedded system design. **[6]**

b) Explain Myrinet with suitable Myrinet network diagram. **[4]**

OR

Q2) a) Draw & explain general architecture of embedded system & explain components in it. **[6]**

b) What are main features of CAN2.0 bus standards **[4]**

Q3) a) List the key features of SHARC processor and discuss the targeted application areas for this processor. **[6]**

b) Explain the structure of 12C bus, Draw state transition diagram for 12C bus master. **[4]**

OR

Q4) a) Discuss various modes of operation of ARM processor with respect to their operational usability. **[6]**

b) Calculate a message delay for 12C bus operating at 400 kilobits per second. The data size of the message is 14 bytes. **[4]**

Q5) a) Use RMS scheduler for scheduling a periodic task set of T1(2, 4)& T2(4, 8). Perform schedulability check & comment on whether given task set is schedulable & schedule produced is feasible. **[10]**

b) Give the classification of the scheduling algorithms, compare and contrast static vs.dynamic algorithms with examples. **[8]**

OR

P.T.O.

Q6) a) Use EDF scheduler for scheduling a periodic task set of T1(1, 3, 3)&T2 (4,6,6). Perform schedulability check & comment on whether given task set is schedulable & schedule produced is feasible. **[10]**

b) Give the structure of cyclic scheduler. Discuss the advantages and disadvantages of cyclic scheduler. **[8]**

Q7) a) State & explain prority inversion problem with appropriate example & name protocols used to remove this problem. **[8]**

b) What is resource reclaiming? State needs of resource reclaiming algorithm. **[8]**

OR

Q8) a) With appropriate example prove that priority ceiling protocol avoids deadlock. **[8]**

b) State algorithms for combined scheduling of periodic & aperiodic tasks & Compare them. **[8]**

Q9) a) State & explain features & characteristics of Real time operating system (RTOS). **[8]**

b) Explain in detail any one commercial RTOS. **[8]**

OR

Q10) a) State & explain, features & characteristics of Real Time Databases. **[8]**

b) Explain in detail any one commerical Real Time Database. **[8]**