

Total No. of Questions : 10]

SEAT No. :

P3619

[Total No. of Pages : 2

[4959] - 1105
B.E. (Electronics Engineering)
Embedded Systems and RTOS (Elective - I)
(2012 Course) (Semester - I)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:-

- 1) *Figures to the right indicate full marks*
- 2) *Assume suitable data, if necessary*
- 3) *Neat diagrams must be drawn wherever necessary*
- 4) *Use of non programmable electronic pocket calculators is allowed*

Q1) a) Define the context Switching. What are the steps involved in $\mu\text{cos} - \text{II}$ context switching? **[5]**

b) Explain priority inversion problem and solution for the same. **[5]**

OR

Q2) a) Define embedded systems. Explain Different Categories of Embedded System application areas. **[5]**

b) Define & Explain interrupt, interrupt latency time, interrupt response time, and interrupt recovery time. **[5]**

Q3) a) Explain different stages of the embedded development process in waterfall model. **[5]**

b) Explain various processor technologies in design of embedded processors. **[5]**

OR

Q4) a) Explain & describe TCB data structure in $\mu\text{C}/\text{OS} - \text{II}$. **[5]**

b) Draw and explain the $\mu\text{cos} - \text{II}$ Architecture. **[5]**

Q5) a) What are $\mu\text{C}/\text{OS} - \text{II}$ event flag services? **[8]**

b) Explain the OS services functions of Semaphore management. **[8]**

P.T.O.

OR

- Q6)** a) Draw and explain the ECB of Mutex [8]
b) What is relationship between tasks, ISRs & a semaphore in μ C/OS-II? [8]

- Q7)** a) Draw & Explain the data structure of Memory control Block. [8]
b) Explain the message box and queue kernel objects for interprocess communication in μ cos – II [8]

OR

- Q8)** a) Explain steps involved in Porting μ cos – II [8]
b) Explain Memory management in μ cos – II RTOS [8]

- Q9)** a) Explain the steps to build a Linux system [8]
b) Explain the BIOS and the role of boot loader in embedded Linux [10]

OR

- Q10)** a) Explain the concept of loadable device driver for Linux kernel [8]
b) Explain the tools required to build a Linux system [10]

