**[4959] - 1085**

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

**Embedded Systems & Rtos**

**(2012 Course) (Elective - I)**

*Time :3 Hours]* *[Max. Marks :70*

*Instructions to the candidates:-*
1) *Neat diagrams must be drawn wherever necessary.*
2) *Figures to the right indicate full marks.*
3) *Assume suitable data, if necessary.*

*Q1)* a) Explain the following design metrics : **[4]**

     i) Power

     ii) Size

     b) With the help of block diagram, explain the architecture of embedded system. **[6]**

**OR**

*Q2)* a) Explain the spiral model. **[6]**

     b) Explain the Foreground | Back ground systems with reference to RTOS**[4]**

*Q3)* a) Explain any two scheduling algorithms. **[6]**

     b) Explain the context switching. **[4]**

**OR**

*Q4)* a) Write a program in embedded C to implement mail box. **[7]**

     b) Explain any two task related functions. **[3]**

*Q5)* a) Explain the embedded Linux development environment with a block diagram. **[8]**

     b) Explain the memory storage considerations for embedded Linux system.**[8]**

*P.T.O.*

*Q6)* a) Explain the steps to execute any C program on embedded system development board. (ARM 9). **[8]**

b) Explain the Binary utilities. **[8]**

*Q7)* a) Explain various file systems used in Embedded Linux. **[8]**

b) Explain the device driver concept used in embedded Linux. **[8]**

OR

*Q8)* a) What is universal boot loader? Explain. **[8]**

b) What are boot loader challenges? **[8]**

*Q9)* a) Explain the embedded software development tools. **[8]**

b) Explain mobile phone with suitable block diagram and state its software requirements. **[10]**

OR

*Q10)* a) Explain the issues in hardware - software design. **[8]**

b) Explain the different lab tools required for embedded system design.**[10]**

♦♦♦♦