Total No of Questions: [12] *SEAT NO. :* [ ]

[Total No. of Pages : *2*]

B.E. 2008 (E&TC)

Embedded Systems and RTOS

(Elective - I) (Semester - I)

Time: 3 Hours ***Max. Marks : 100***

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Use of Calculator is allowed.***
5) ***Assume Suitable data if necessary***

SECTION I

Q1) a) What is design metric? Explain the following design metrics. [10]
1.Power
2.Time to market
3.Safety
4.NRE cost

b) List feature of WinCE and explain its applications. [8]

OR

Q2) a) List features android framework. Why it is popular in mobile phones. [8]

b) Explain in detail CAN protocol and its applications. Also compare it with LIN and flexray protocol. [10]

Q3) a) Explain with suitable block diagram architecture of LPC2148. [8]

b) Draw interfacing diagram of LCD to LPC2148 and write C program to display "Hello" on LCD. [8]

OR

Q4) a) What are the limitations of 8-bit processor? How to overcome it. [8]

b) Explain interfacing of eight led bank to LPC 2148 with neat diagram. Also write an embedded c code to blink the leds. Comment on delay generation. [8]

Q5) a) What scheduler in RTOS? Explain any three scheduling algorithms. [8]

b) Compare traditional and embedded OS. [8]

OR

Q6) a) Explain function of semaphore in RTOS. [8]

b) Explain various states of tasks with suitable diagram. [8]

SECTION II

Q7) a) Explain linux architecture. [8]

b) What is device driver? Explain. [4]

c) Write a short note on flash file system. [4]

OR

Q8)	a)	Explain the role of following in embedded linux system 1.Redboot 2.Busybox	[8]
	b)	What is embedded linux? Explain development tools required for ARM/Linux Applications.	[8]
Q9)	a)	Explain spiral model for software development life cycle.	[8]
	b)	Compare features and IPCs of QNX and nucleus RTOS	[8]
		OR	
Q10)	a)	What is software development life cycle? Explain waterfall model.	[8]
	b)	Write and explain features of symbian OS.	[8]
Q11)	a)	Explain digital camera with suitable block diagram and state its hardware and software requirements.	[9]
	b)	Explain smart card system with its hardware and software requirements.	[9]
		OR	
Q12)	a)	Explain the features of processor, memory and I/o devices required for ECG machines.	[9]
	b)	Explain different tasks and IPCs for ATM machine.	[9]