Total No. of Questions : 10]

SEAT No. : ____

P103

[Total No. of Pages : 2

[5871]-606
B.E. (E&TC)
EMBEDDED SYSTEM & RTOS
(2015 Pattern) (Semester - I) (Elective - I)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8. Q.9 or Q.10.***
2) ***Neat diagrams must be drawn whenever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data, if necessary.***

Q1) a) Explain the following design metrics of an embedded system'? Time-to-prototype, Time-to-market, Maintainability. **[5]**

b) Explain Waterfall model? State the merits and demerits **[5]**

OR

Q2) a) What are different categories of embedded system? List & define main characteristics of embedded system. **[5]**

b) Explain different type of RTOS? How it is differs from GPOS **[5]**

Q3) a) Draw and explain µcos-II Kernel structure **[5]**

b) Explain real time scheduling algorithm. **[5]**

OR

Q***4)*** a) Explain following functions : **[5]**

i) OSMboxPend ()

ii) OSMboxPost ()

b) What is Priority Inversion explain with an example? **[5]**

OR

P.T.O.

Q5) a) Explain and four features of Cortex Architecture with advantages. **[8]**

b) Draw and interfacing diagram of Seven Segment display with LPC 1768. Write a program or algorithm for same. **[8]**

OR

Q6) a) Explain how interrupt structure of Cortex is different from ARM7 **[8]**

b) Explain various power saving modes of LPC 1 768 **[8]**

OR

Q7) a) Explain the Linux Kernel construction in detail. **[9]**

b) What is need of a device driver? Explain any 3 types of device driver in detail. **[9]**

OR

Q8) a) How to build a Linux kernel image explain in detail. **[9]**

b) Write a short note on following : **[9]**

i) Redboot

ii) LIBC

iii) Busybox

Q9) a) What is Arduino Uno ATmega328? Explain standard libraries in Arduino. **[8]**

b) Draw an interfacing diagram of 4 LEDs with Arduino board. And write a program to blink them alternately. **[8]**

OR

Q10)a) With the help of case study explain application development with Arduino board. **[8]**

b) Explain and 4 functions with respect to Arduino programming. **[8]**

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