Total No. of Questions : 10]

SEAT No. :

P1482

[Total No. of Pages : 2

[5460]-158
T.E. (E&TC)
EMBEDDED PROCESSOR
(2012 Pattern) (304191) (Semester - II)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

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

Q1) a) With the help of diagram explain different clocks used in ARM 7. **[6]**

b) Explain IODIR and PINSEL Registers of LPC2148. **[4]**

OR

Q2) a) Explain following instructions. **[6]**

i) SUBLT r1, r4, #3

ii) CMPNE r4, r5

iii) ADDEQ r7, r6

b) Draw and explain format of GPSR register of ARM7. **[4]**

Q3) a) Draw interfacing diagram and write an embedded 'C' program to flash 8 LEDs connected at P1.15 to P1.31 of LPC 2148. **[6]**

b) Draw interfacing diagram to interface 4x4 matrix keypad with LPC 2148. **[4]**

OR

Q4) a) Draw interfacing diagram and write an embedded 'C' program to display string 'SPPU-PUNE' on 16*2 LCD. **[6]**

b) With the help of interfacing diagram explain SD card interfacing with LPC 2148. **[4]**

Q5) a) Compare ARM CORTEX A, CORTEX M, CORTEX R processors. **[8]**

b) Explain need of operating system in developing complex applications in embedded system. **[8]**

OR

P.T.O.

Q6) a) Explain CMSIS standard. **[8]**

b) Explain thread and handler modes of Cortex M3. **[8]**

Q7) a) State feature of LPC 1768. **[8]**

b) Interface DC motor with LPC 1768 and write a 'C' program to control speed of DC motor with 70% duty cycle. **[8]**

OR

Q8) a) Draw & explain block diagram of LPC 1768. **[8]**

b) Interface RGB LED to LPC 1768 & Write a 'C' Program to display only red and blue colour with some delay. **[8]**

Q9) a) Explain USB communication. **[9]**

b) Explain Ethernet based communication. **[9]**

OR

Q10)a) Explain CAN protocol in details. **[9]**

b) Explain PIN connects black of LPC 1768 & registers associated with this block. **[9]**