

Total No. of Questions : 10]

SEAT No. :

P1482

[5460]-158

[Total No. of Pages : 2

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 block of LPC 1768 & registers associated with this block. [9]

