Registration No. : | | | | | | | | | | |

Total number of printed pages – 3

B. Tech

PCEL 4303

Sixth Semester Back Examination – 2015

MICROPROCESSOR AND MICROCONTROLLER

BRANCH (S) : CSE, EEE, ELECTRICAL

QUESTION CODE : M 132

Full Marks – 70

Time : 3 Hours

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*Answer Question No. **1** which is compulsory and any **five** from the rest.*

The figures in the right-hand margin indicate marks.

1. Answer the following questions : 2×10

(a) What is the function of READY and ALE pin in 8085 microprocessor ?

(b) Differentiate between TRAP and INTR interrupts.

(c) What is the importance of segmentation in microprocessor system.?

(d) Mention six salient features of 8051 microcontroller.

(e) How many machine cycles involved in the instruction PUSH r_p ?

(f) What is physical and linear address in 80386 microprocessor ?

(g) What is a word ? What is its size for 8086 microprocessor ?

(h) Calculate the physical address for the given segmented address = 23A4h and offset address = 4950h.

P.T.O.

(i) Write the difference between stack pointer and program counter.

(j) What do you mean by WAIT state and HALT state ?

2. (a) What is addressing mode ? Explain 8051 microcontroller addressing modes. 5

(b) Enumerate and explain all the registers involved in 8051 microcontroller. 5

3. (a) What is an Interrupt Service Routine program ? With example explain its importance in the Microprocessor systems. 5

(b) Explain the instructions involved for 8085 interrupts. 5

4. (a) Draw the timing diagram of memory read bus cycle with two wait states. 5

(b) Explain 80386 virtual mode operation. 5

5. (a) What is the difference between 8086 minimum and maximum mode and what are the functions of $\overline{DEN}$, $M/\overline{IO}$ and $DT/\overline{R}$ signals ? 5

(b) What is a string ? Write a program to transfer 5 bytes data from one set of memory to another set of memory. 5

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6. (a) Explain stack operation of the following program : 5

```
LXI SP, 8765H
PUSH B
PUSH D
POP PSW
```

(b) Explain 8255 PPI BSR mode definition format. What is the control word to set PC2 and PC5 ? 5

7. (a) Describe the flag register of 8086 microprocessor. How it different from the flag register of 8085 microprocessor ? 5

(b) Explain 8257 DMA operation with suitable block diagram. 5

8. Write short notes on any **two** : 5×2

(a) 2764 EPROM

(b) 8086 pipeline architecture

(c) 8051 unchipped RAM

(d) 8251 USART.

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