

Registration No. :

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Total number of printed pages – 3

**B. Tech**  
**PCEL 4303**

**Sixth Semester Back Examination – 2015**  
**MICROPROCESSOR AND MICROCONTROLLER**  
**BRANCH (S) : CSE, EEE, ELECTRICAL**

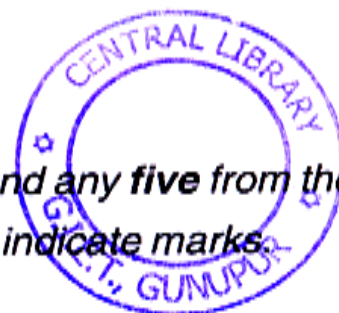
**QUESTION CODE : M 132**

**Full Marks – 70**

**Time : 3 Hours**

*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<sub>p</sub> ?
- (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  $\overline{DT}/R$  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
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.

