

**Government College of Engineering, Aurangabad**  
(An Autonomous Institute of Government of Maharashtra)  
**B.E. (Computer Science and Engineering) Examination**  
End Semester Examination Nov/Dec 2016  
**CS 243: MICROPROCESSOR AND INTERFACING**

Time: Three Hours

11 8 NOV 2016

Max Marks: 60

*“Verify the Course Code and check whether you have got the correct question paper”*

*N.B:-*

- 1. All questions are compulsory*
- 2. Figures to the right indicate full marks*
- 3. Assume suitable data if necessary and state it clearly*
- 4. Use of non-programmable calculator is allowed*

**Q1. Attempt any two** (12)

- i) Convert the following decimal number into hexadecimal number  
1) 95.5 2) 675.625
- ii) What do you understand by logic gate? Discuss the various types of gates. Why NAND gate is called digital building block.
- iii) Write a short note on  
1) Multiplexer 2) Demultiplexer

**Q2. Attempt any two** (12)

- i) Calculate physical address for address byte CS, DS and SS. i) CS:1111H  
ii) DS:3333H iii) SS:2526H iv) IP:1232H v) DI:0020H vi) SP:1100H
- ii) What do you mean by pipelined architecture? How is it implemented in 8086?
- iii) Write an assembly language program for arithmetic operation (using procedure).

**Q3. Attempt any two** (12)

- i) Draw and discuss the read and write cycle timing diagrams of 8086 in minimum mode.
- ii) With appropriate pin diagrams explain the maximum mode operations of 8086.
- iii) What is clock generator? Draw and discuss its labeled pin diagram.

**Q4. Attempt all** (12)

- i) How would you describe block transfers and DMA? Explain in detail.
- ii) Interface two 4k × 8 EPROMS and two 4k × 8 RAM chips with 8086.

**Q5. Attempt all** (12)

- i) Explain the importance of 8259 interrupt controller and explain how it handles the interrupt.
- ii) Write an assembly language program to demonstrate Mode 0 operation of 8255 by interfacing 8086.