

**Goa Vidyaprasarak Mandal's
Gopal Govind Poy Raiturcar College of Commerce and Economics
Farmagudi, Ponda-Goa.**

B.C.A. (Semester - I) Examination – October 2013

COMPUTER ORGANIZATION AND ARCHITECTURE

Duration : 2 hours

Marks : 50

Instructions : A.) *All the questions are compulsory.*
B.) *Draw neat diagrams with pencil wherever required.*

1. State whether the following statements are True or False. (1mk x 5 = 5 mks)
 - a) Program Counter holds the signal of the next instruction to be fetched.
 - b) Control bus portion of the system bus provides signals to the control unit.
 - c) USE16 in Assembly language is to use 16 bit program memory.
 - d) int 21h is used for interrupt in the Assembly language.
 - e) MAR is connected to the data lines of the system bus.

2. Answer the following. (1mk x 5 = 5 mks)
 - a) What is a semiconductor memory ?
 - b) What is InfiniBand ?
 - c) What is an Instruction set ?
 - d) What are the types of Operand ?
 - e) What is a Loop Buffer ?

- II.
 1. Explain the Immediate Addressing. (2 mks)
 2. Perform the following conversions. (1.5 mk x 2 = 3 mks)
 - i. $(10001011)_2 = (X)_{10}$
 - ii. $(85)_{10} = (X)_2$
 3. Explain the Von Neumann Architecture with the diagram. (5 mks)

- III. 1. Explain the main Internal Structural components of a computer. (2 mks)
2. Explain the Read and Write mechanisms of Magnetic disk. (3 mks)
3. Explain the Typical Cache organization with the diagram. (5 mks)
- IV. 1. Perform the following operations. (1mk x 2 = 2 mks)
i. $(+3) + (+4)$
ii. $(+2) + (-7)$
2. Explain the Programmed I/O technique. (3 mks)
3. Explain the three categories of external devices and draw the block diagram of External device. (5 mks)
- V. 1. Explain the Program Status Word. (2 mks)
2. Explain the 8086 Instruction Set with examples. (3 mks)
3. Explain the CPU with Internal Bus with a diagram. (5 mks)
