

**GANPAT UNIVERSITY**  
**B. TECH SEM-V (IT) REGULAR EXAMINATION- NOV-DEC 2016**  
**2IT503: COMPUTER SYSTEM ARCHITECTURE**

TIME: 3 HRS

TOTAL MARKS: 60

**Instructions:** (1) This Question paper has two sections. Attempt each section in separate answer book.  
(2) Figures on right indicate marks.  
(3) Be precise and to the point in answering the descriptive questions.

**SECTION: I**

- Q.1 (A) Draw and explain diagram of 4-bit arithmetic circuit which can perform addition, subtraction, increment, decrement and transfer operations. (6)
- (B) What is the role of sequence counter (SC) in control unit? Explain with the help of its three inputs. (4)

**OR**

- Q.1 (A) List out any five memory reference instructions with their short symbolic description. (5)
- (B) Draw and explain common bus system for four registers using three-state buffer. Each register has 4 bits capacity. (5)

- Q.2 (A) Draw neat and clean flowchart of the instruction cycle including the interrupt cycle. (6)
- (B) Explain following terms. (4)
- I. Hardwired control unit
  - II. Effective address
  - III. FGO and FGI
  - IV. Control function

**OR**

- Q.2 (A) Draw and explain block diagram to show basic computer registers connected to a common bus. (6)
- (B) Explain following terms. (4)
- I. Microoperation
  - II. Microinstruction
  - III. Microprogram
  - IV. Microcode
- Q.3 (A) Draw and Explain figure for Selection of address for Control Memory. (6)
- (B) Explain BSA, ISZ instruction with proper example. (4)