

Registration No. :

--	--	--	--	--	--	--	--	--	--

Total number of printed pages – 2

B. Tech  
FECE 6401

**Seventh Semester Examination – 2013**

**COMPUTER SYSTEM ARCHITECTURE**

**BRANCH : IEE, ETC, EC, AEIE**

**QUESTION CODE : C-167**

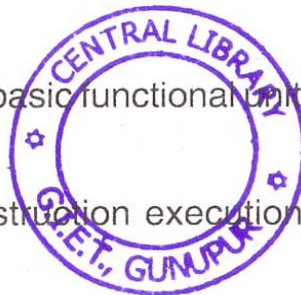
**Full Marks – 70**

**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. Write short notes on the following : 2 × 10
  - (a) Big-endian representation
  - (b) Subroutine
  - (c) Memory-mapped I/O
  - (d) Emulation
  - (e) Microinstruction
  - (f) Virtual Memory
  - (g) Paging
  - (h) Program Controlled I/O
  - (i) CISC
  - (j) Secondary Storage.
  
2. (a) With a suitable diagram discuss the basic functional units of a Computer. 5  
(b) With a suitable diagram explain instruction execution and straight-line sequencing. 5
  
3. (a) Write the truth table and design the logic circuit of a full-adder. 5



P.T.O.

- (b) What are carry generate ( $G_i$ ) and carry propagate ( $P_i$ ) functions. Explain the carry of each stages of a 4-stage adder. 5
4. What do you understand by addressing modes ? Discuss with suitable examples five different addressing modes that you know. 10
5. (a) Design and explain the circuit arrangement of binary division 5  
(b) Explain a 4-bit example as it would be processed by the circuit in (a) above. 5
6. (a) Discuss the double precision IEEE standard floating-point format to represent decimal 123.5. 5  
(b) Write the Add/ Subtract, Multiply and Divide rules on floating-point numbers. 5
7. (a) Explain the execution of the complete instruction ADD (R3),R1. 5  
(b) With a suitable block diagram discuss hardwired control unit, separating the decoding and encoding functions. 5
8. Answer the following questions : 2.5×4
- (a) Discuss direct-mapped cache with a suitable diagram.
- (b) With a suitable diagram explain set-associative mapped cache with two blocks per set
- (c) Representation of negative numbers
- (d) Memory Management requirements.

