

(Please write your Exam Roll No.)

Exam Roll No. 01414202012

END TERM EXAMINATION

THIRD SEMESTER [BCA] DECEMBER 2013

Paper Code: BCA203

Subject: Computer Architecture
(Batch: 2011 onwards)

Time : 3 Hours

Maximum Marks :75

Note: Attempt any five questions including Q.no.1 which is compulsory.
Select one question from each unit.

- 1 a) List sixteen logic microoperations with its Boolean function. 5
b) Draw the flowchart for interrupt cycle. 5
c) Discuss the space-time diagram for a four-segment pipeline. 5
d) Discuss the basic components of a memory management unit. 5
e) List the sequence of microoperations for implementing ISZ instruction. 5
- UNIT-I**
- 2 a) Discuss the circuit associated with design of AC register and list all the statements that change the content of AC. 6
b) Design a 4-bit combinational circuit decremter using four full-adder circuits. 6.5
3 a) Draw three Basic computer Instruction formats, with proper opcode combinations. 6.5
b) Explain how interrupt cycle is a hardware implementation of a BSA operation. 6
- UNIT-II**
- 4 a) W.r.t addressing modes discuss direct address mode, indirect address mode and relative address mode. 6
b) Draw the block diagram of bus organization for register set of CPU along with the control word. 6.5
5 a) Determine the number of clock cycles that it takes to process 200 tasks in a six-segment pipeline. 6
b) Compare Vector processing with pipeline processing. 6.5
- UNIT-III**
- 6 a) Discuss the flowchart for Add and subtract operations 6
b) Describe divide operation with the help of flowchart. 6.5
7 a) Draw one stage of the daisy-chain priority arrangement and explain its working. 6.5
b) Discuss source-initiated and destination-initiated transfer using handshaking method for asynchronous data transfer. 6
- UNIT-IV**
- 8 What is the principle of locality of reference? Discuss the following 12.5
i) Cache memory
ii) Mapping methods
9 Discuss the following w.r.t Main memory
i) Memory address map 6
ii) RAM & ROM chips 6.5

CLA RA
CLE RA
CHA RA
CMO B
INC Z
DEC C
TR. SEA S
SZA S
SZE Z
HLT
