

BCA - 233 COMPUTER ARCHITECTURE

Maximum Marks: 100

External:

80

Minimum Pass Marks: 35

Internal:

20

Time: 3 hours

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

UNIT -I

Basic Computer Organisation and Design: Instruction Codes, Computer registers, Computer Instructions, Timing and Control, Instruction Cycle, Memory reference instructions, Input-Output and Interrupt, Design of Basic computer, Design of accumulator logic

UNIT -II

Register Transfer and Microoperations: Register Transfer Language (RTL), register transfer, Bus and Memory Transfers, Arithmetic Microoperations, Logic Microoperations, Shift Microoperations, Arithmetic Logic Shift Unit, Microprogrammed Control: Control memory; address sequencing, microprogram sequencer, Design of Control Unit

UNIT -III

Central Processing Unit: General registers Organization, Stack Organization, Instruction formats, Addressing Modes, Data Transfer and Manipulation, Program Control, Program Interrupt, RISC, CISC.

UNIT -IV

Memory Organization: Memory hierarchy, Auxiliary Memory, Associative Memory, Interleaved memory, Cache memory, Virtual Memory, Memory Management Hardware, Input Output Organization : Peripheral devices , Input-Output Interface, Asynchronous data transfer, Modes of Transfer, Priority Interrupt, Direct Memory Access(DMA),Input-Output Processor(IOP).

TEXT BOOKS

1. Computer System Architecture By. Moris Mano, Pearson Education
2. Computer Architecture and Organization By J.P. Hayes, Tata McGraw Hill

REFERENCE BOOKS:

1. W. Stallings, Computer Organisation and Architecture, 4th Edition, Pearson Education
2. Harry, Jordan, Computer Systems Design & Architecture, Edition, Addison Wesley
3. J.D. Carpinelli, Computer Systems Organization & Architecture, Addison Wesley.
4. P.V.S. Rao, "Computer System Architecture", PHI, 2009