2071
Bachelor of Computer Application
Second Semester
BCA-16-202: Computer Organization

Time allowed: 3 Hours   Max. Marks: 65

NOTE: *Attempt* _five_ *questions in all, including Question No. IX (Unit-V) which is compulsory and selecting one question each from Unit I - IV.*

x-x-x

UNIT - I

I.   a) Explain the working of 8-to-3 line encoder with the help of logic symbol, logic diagram and truth table.

     b) What is register? Discuss various types of registers.   (6,7)

II.   a) Multiply (-14) and (-8) using Booth's algorithm.

     b) Discuss addition and subtraction for sign magnitude numbers.   (6,7)

UNIT - II

III.   a) What are addressing modes? Discuss direct and indirect addressing modes.

     b) Design Arithmetic, Logic and Shift (ALU) unit with 8 arithmetic, 4 logic and 2 shift micro-operations.   (5,8)

IV.   What are interrupts? Discuss its types and interrupt cycle with the help of flowchart.
                                                                           (13)

UNIT - III

V.   a) What is Associative memory? Explain its working with the help of diagram.

     b) Discuss the working of virtual memory.   (8,5)

VI.   a) What are pseudo instructions? Explain the features of assembly language.
     b) Write assembly language program to perform multiplication using subroutine.
                                                                           (5,8)

UNIT - IV

VII.   Discuss various physical components of a computer and its inspection and diagnostics on PC.   (13)

VIII.   a) What is motherboard? List and explain various components attached on a motherboard.

     b) What is an Expansion card? Explain any three expansion cards.   (5,8)

P.T.O.

UNIT - V

IX. Attempt the following:-

a) Define Flip flops. (2)

b) What is virus? Discuss its types. (2)

c) What are various types of memory? (2)

d) What is strobe based and handshake based communication? (2)

e) Discus cache memory and its mapping techniques. (2)

f) Discus internal and external cards. (2)

g) What is floating point representation? (1)

x-x-x