UG EVEN SEMESTER (CBCS) EXAMINATION, SEPTEMBER - 2021

COMPUTER SCIENCE

2nd Semester

COURSE NO. MCSCC - 203

(Computer System Organisation and Architecture)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

(Answer any five questions, taking one from each unit)

UNIT - I

1. What are different micro-operations? Discuss each of them? 14

2. Draw and discuss the working of Arithmetic logic shift unit. 14

UNIT - II

3. a) What is stack? Discuss about resister and memory stack. 7

   b) Discuss about different instruction formats. 7

4. Give difference between data transfer and data manipulation instruction. Discuss about shift instructions. 14

UNIT - III

5. a) Why should the sign of the remainder after a division be same as the sign of the dividend. 7

   b) Design an array multiplier that multiplies two 4-digit numbers. Use AND gates and binary address. 7

6. a) Show that there can be no mantissa overflow after a multiplication operation. 6

   b) Discuss the Booth multiplication algorithm. 8

UNIT - IV

7. Give the detailed picture of memory hierarchy. 14

8. Describe briefly the following: 4+4+4+2
   a) Cache memory
   b) Virtual memory.
   c) Auxiliary memory.
   d) Cache Hit.

UNIT - V

9. Discuss about Direct Memory Access(DMA) and also about DMA controller. 14

10. a) What is meant by Handshaking? Explain. 7

    b) What are the different issues behind serial communication? Explain. 7

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