16U532 (Pages: 2) Name: ……..

Reg. No……

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2018

(CUCBCSS-UG)

CC15U BCS5 B08 - COMPUTER ORGANIZATION AND ARCHITECTURE

(Computer Science – Core Course)

(2015 - Admission onwards)

Time: Three Hours Maximum: 80 Marks

Part A

Answer ***all*** questions. Each question carries 1 mark.

1. Mention the lowest level in the memory hierarchy.
2. Convert the expression A* B + C * D to reverse polish notation.
3. What is the purpose of addressing mode technique?
4. What characteristic of RAM makes it not suitable for permanent storage?
5. Write any two registers of the processor that are connected to memory bus.
6. Explain one byte instruction.
7. Define hit ratio.
8. Write down the expression for speedup factor in a pipelined architecture?
9. Define effective address.
10. Which data structure is best supported using indirect addressing mode?

(10 x 1 = 10 Marks)

Part B

Answer ***all*** questions. Each question carries 2 marks.

11. Define MAR.
12. Mention the advantages of cache memory.
13. How floating point numbers are represented in memory?
14. What are the advantages of pipelining?
15. Draw the flowchart for source initiated transfer using handshaking?

(5 x 2 = 10 Marks)

Part C

Answer any ***five*** questions. Each question carries 4 marks.

16. Explain the bus structure of CPU.
17. Write note on I/O processors.
18. Explain Booth algorithm for multiplication.
19. What is cache coherence?
20. What is associative memory? Explain the block diagram of associative memory.

21. Differentiate CISC and RISC.

22. Explain the modes of transfer.

23. Write a note on pipeline hazards.

(5 x 4 = 20 Marks)

Part D

Answer any ***five*** questions. Each question carries 8 marks.

24. Explain DMA controller in detail.

25. Draw a flowchart for the division of floating point number.

26. Explain addressing modes.

27. Discuss about asynchronous data transfer.

28. Explain hardwired and microprogrammed control unit.

29. Draw the space-time diagram of a four-segment pipeline and explain.

30. Explain virtual memory in detail.

31. Write short notes on:

    (a) Memory reference instructions.

    (b) Auxiliary memory.

    (c) MESI protocol.

(5 x 8 = 40 Marks)

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