

Registration No. :

Total number of printed pages – 2

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MCA
MCC 202

Second Semester Regular Examination – 2015

COMPUTER ORGANISATION AND SYSTEM ARCHITECTURE

BRANCH : MCA bputonline.com

QUESTION CODE : J 220

Full Marks – 70

Time : 3 Hours

Answer Question No. 1 which is compulsory and any five from the rest.

The figures in the right-hand margin indicate marks.

1. Answer the following questions : bputonline.com 2×10
- (a) What are the functional units of a computer ?
 - (b) What do you mean by asynchronous data transfer ?
 - (c) What is the advantage of assembly language ? How is it different from high level language ?
 - (d) Differentiate between word addressing and byte addressing.
 - (e) What is the difference between memory access time and memory cycle time ?
 - (f) What are the two attractive features of Booth algorithm ?
 - (g) What are the difference between physical address space and logical address space ?
 - (h) Briefly explain the floating point representation with an example.
 - (i) What do you mean by buffered write through system ?
 - (j) What do you mean by memory interleaving ? Write some advantage of memory interleaving.
2. (a) What is the benefit of using a multiple bus architecture compared to single bus architecture ? 5
- (b) Describe briefly with example about three address, two address, and one address instruction. 5

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3. (a) What are the addressing modes available ? Explain with example. 5
- (b) Write the Booth's algorithm and multiply 01101 by 11010 using the Booth algorithm. bputonline.com 5
4. What do you mean by mapping function ? Explain different types of mapping function in case of cache memory. 10
5. (a) Explain the difference between hardwired control and micro programmed control. Is it possible to have a hardwired control associated with a control memory ? 5
- (b) A computer main memory is addressable by 16 bit address. The cache has 128 blocks of 16 words each. Calculate the main memory address bits (i.e. word bit, block bit and tag bit) 5
6. (a) Describe different types of techniques used to handle multiple interrupts. bputonline.com 5
- (b) Differentiate memory mapped I/O and I/O mapped I/O. 5
7. (a) Describe array processing. How vector processing is differ from array processing. 5
- (b) Consider the paging system main memory with 3 pages. The execution of program requires a reference string 3, 2, 1, 3, 5, 2, 3, 2, 1. Show the sequence of pages assigned to main memory for execution of program using FIFO and Optimal page replacement algorithm. Find the page fault rate in both techniques. 5
8. Write short notes on any two of the following : 5×2
- (a) Standard I/O interface
 - (b) Flynn's Classification
 - (c) Virtual memory
 - (d) Associative memory.

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