

Examination May-2014**Computer Organization and Assembly Language****MCA103**

Paper ID-B0130

3 hours

Max Marks : 100

Note:

- 1) Attempt one question from each section
- 2) Section E is compulsory

Section A

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|---|--|----|
| 1 | (a) Explain formats of various types of instructions(Memory-Reference, Register-Reference and I/O) | 15 |
| | (b) Compare RISC and CISC processors. | 5 |
| 2 | (a) Explain Von-Neumann architecture. | 6 |
| | (b) Compare Computer Organization and Computer Architecture with example. | 4 |
| | (c) What do you mean by Interrupt? Also explain different types of it. | 10 |

Section B

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|---|--|----|
| 3 | (a) What is the difference between pipelining and parallelism? Show that k-stage pipelined processor has k-times speed up as compared to non-pipelined system. | 10 |
| | (b) Explain interleaved memory with low order and high order interleaving. | 10 |
| 4 | (a) What do you mean by initialization of DMA controller? How it works? Explain with suitable block diagram. | 10 |
| | (b) Explain Flynn's classification of parallel processing. | 10 |

Section C

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|---|---|----|
| 5 | (a) Explain cache memory mapping techniques with example. | 10 |
| | (b) What is virtual memory? Also explain role of paging and segmentation to virtual memory. | 10 |
| 6 | (a) A block set-Associative cache consists of 64-Blocks divided in 4 block sets. The main memory contains 4096 blocks, each consisting of 128 words of 16-bit length. | 10 |
| | i) How many bits are there in Main Memory? | |
| | ii) How many bits are there in each of TAG, SET and WORD fields? | |
| | (b) Explain Main Memory- Memory Address Map. | 10 |

Section D

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|---|---|----|
| 7 | (a) Explain 8085 Microprocessor with neat and clean block diagram. | 15 |
| | (b) Explain characteristics of Multiprocessors. | 5 |
| 8 | (a) Write an assembly language program for counting vowels in a string. | 10 |
| | (b) Explain different program control instructions of 8085. | 10 |

Section E

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|---|---|---|
| 9 | (a) Define Computer Architecture. | 2 |
| | (b) What is the purpose of Stack pointer? | 2 |
| | (c) Define MDR. | 2 |
| | (d) What do you mean by Asynchronous data transfer? | 2 |
| | (e) Distinguish between synchronous and asynchronous data transfer. | 2 |
| | (f) What is the purpose of Timing and Control unit? | 2 |
| | (g) Explain I/O interface. | 2 |
| | (h) Note on Page Replacement. | 2 |
| | (i) What do you mean by common Bus? | 2 |
| | (j) Note on Assembly language. | 2 |

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