**SCHEME OF VALUATION (Set - 1)**

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| D:\VK\GIET LOGO.jpg | **GIET UNIVERSITY, GUNUPUR – 765022**  B. Tech (Fourth Semester – Regular) Examinations, April – 2021  **Computer Organization & Architecture** |

**PART – A: (Multiple Choice Questions)**

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| Q.1 | a. | For comparing the performance of a new system, the users will simply compare execution time of its  (ii) **Workloads** | **1** |
|  | b. | In CISC architecture most of the complex instructions are stored in  (iv) **Transistors** | **1** |
|  | c. | A multiprocessor operating system should perform  (iv) **all of the mentioned** | **1** |
|  | d. | If the control signals are generated by combinational logic, then they are generated by a type of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ controlled unit.  (iv) **Hardwired** | **1** |
|  | e. | MIMD stands for  (i) **Multiple instruction multiple data** | **1** |
|  | f. | Floating point representation is used to store  (iii) **Real integers** | **1** |
|  | g. | The result obtained on binary multiplication of 1010 \* 1100 is  (iv) **1111000** | **1** |
|  | h. | Write Through technique is used in which memory for updating the data  (iv) **Cache memory** | **1** |
|  | i. | The LRU provides very bad performance when it comes to \_\_\_\_\_\_\_\_\_  (i) **Blocks being accessed is sequential** | **1** |
|  | j. | In a data transfer operation involving SCSI BUS, the control is with  (iv) **Target Controller** | **1** |

**PART – B: (Short Answer Questions)**

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| Q.2 | a. | List the various functional units of a digital computer? | **2** |
|  | b. | What is an instruction set architecture in computer science? | **2** |
|  | c. | What happens when branch instruction comes in the program? | **2** |
|  | d. | List the different applications of parallel processing? | **2** |
|  | e. | What are the advantages of array processor? | **2** |
|  | f. | How is arithmetic performed in a computer? | **2** |
|  | g. | What rules are used in binary division? | **2** |
|  | h. | Why interfacing is needed for I/O devices? | **2** |
|  | i. | What do you mean by locality of reference? | **2** |
|  | j. | List the various types of interrupts. | **2** |

**PART – C: (Long Answer Questions)**

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| 3. | a. | Block Diagram 2 marks  Explanation of 4 functional units 1 mark each | **6** |
|  | b. | 4 characteristics of RISC and CISC processors 1 mark each | **4** |
|  |  | **OR** | |
|  | c. | Define Amdahl’s law 2 marks  How it improve the performance of computer 3 marks | **5** |
|  | d. | At least 5 advantages 1 mark each | **5** |
|  |  |  |  |
| 4. | a. | Principles of linear pipelining 2 marks  How these pipeline processors can be classified? 4 marks | **6** |
|  | b. | Define vector processing 1 marks  At least 3 characteristics 1 mark each | **4** |
|  |  | **OR** | |
|  | c. | Flynn’s computer classification schemes with the help of suitable diagrams | **7** |
|  | d. | At least 3 differences 1 mark each | **3** |
|  |  |  |  |
| 5. | a. | Explanation of Binary Addition and Subtraction 2.5 marks each | **5** |
|  | b. | Define full adder 1 marks  Explanation its working 2 marks  Circuit diagram 2 marks | **5** |
|  |  | **OR** | |
|  | c. | Explain the representation of floating point numbers with examples | **6** |
|  | d. | How can we speed up the multiplication process? | **4** |
|  |  |  |  |
| 6. | a. | Explain Direct mapping 2.5 marks  Associative mapping 2.5 marks | **5** |
|  | b. | Explain two techniques for memory management 2.5 marks each | **5** |
|  |  | **OR** | |
|  | c. | Definition 1 marks  Two page replacement algorithms 2.5 marks each | **6** |
|  | d. | Discuss data transfer using direct memory access technique | **4** |