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| |  |  |  | | --- | --- | --- | | 13CS2202 | - | COMPUTER ORGANIZATION | | | | | | | | |
|  |  | |  | | | | |
| Hours / Week | : | 4 | |  | Sessional Marks | : | 40 |
| Credits | : | 4 | |  | End Examination Marks | : | 60 |

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| **UNIT – I** |
| **Basic Structure Of Computers**: Computer Types, Functional unit, Basic operational concepts, Bus structures, Software, Performance, multiprocessors and multi computers.  **Machine Instructions And Programs**: Numbers, Arithmetic Operations and Characters, Memory Locations and addresses, Memory Operations, Instructions and Instruction Sequencing, Addressing Modes, Basic I/O Operations, Subroutines, Additional Instructions |
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| **UNIT – II** |
| **Memory System:** Memory Hierarchy, Basic Concepts, Semiconductor RAM Memories, Read Only Memories, Speed, Size, and Cost, Cache Memories-Mapping Functions, Replacement Algorithms, Performance Considerations, Secondary Storage, RAID. |
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| **UNIT – III** |
| **Computer Arithmetic**: Addition and subtraction, multiplication Algorithms, Division Algorithms-Restoring and Non Restoring, Floating – point Arithmetic operations. Decimal Arithmetic unit, Decimal Arithmetic operations. |
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| **UNIT – IV** |
| **Basic Processing Unit**: Fundamental concepts, Single and multiple bus organization, Hardwired control, Micro-programmed control.  **I/O Organization**: Accessing IO Devices, Interrupts, DMA, Interface Circuits, Standard I/O Interfaces-PCI, SCSI, USB. |
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| **UNIT – V** |
| **Pipelining**: Basic concepts, Data hazards, Instruction hazards, Influence on instruction sets, Data path and Control considerations, super scalar operations, performance Considerations. |
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| TEXT BOOKS |
| 1. Computer Organization – Carl Hamacher, Zvonko G. Vranesic, Safwat G. Zaky 2. Computer Systems Architecture – M.Moris Mano, 3rd Edition, Pearson/PHI |
|  |
| REFERENCE BOOKS |
| 1. Computer Organization and Architecture– William Stallings, 7th Edition. 2. Computer Organization and Desing– P Paul Chowdary, 2rd Edition. 3. Computer Systems Design and Architecture – Vincent P and Harry F Jordan, 2nd Edition. |
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