III B. Tech I Sem – Semester End Examinations – Supplementary - Jul 2022

**Subject Name: COMPUTER ORGANIZATION & OPERATING SYSTEM**

**Subject Code: 194GA05508**

**Name & Signature of the Examiner: Mr. M. Narasimhulu, Assistant Professor, CSE.**

**Scheme of Evaluation**

**SRIT R19**

**AY: 2021-22**

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| **PARTA**  **(Compulsory Question)**  **\*\*\*** | | | |
| **1 Answer the following: (10 X 02 = 20 Marks)** | | | |
| a) | Definition of Contempory Computer. | | 2M |
| b) | Step 1: Align Mantissa  Step 2: Add Two Numbers  Step 3: Normalize the result | | 2M |
| c) | Classification of Addressing modes like immediate, Direct, Indirect, Relative, Indexing etc. | | 2M |
| d) | The Most Comomly used in Instruction Fields are I, OPCODE, and Address of the Operand. | | 2M |
| e) | Specifing Serives like Program execution, I/O operations, File System manipulation, Communication, Error Detection, Resource Allocation, Protection. | | 2M |
| f) | * The primary goal of an Operating System is to provide a user-friendly and convenient environment. * The secondary goal of an Operating System is efficiency | | 2M |
| g) | A program under execution is known as process. | | 2M |
| h) | Deadlock is a situation where a set of processes are blocked because each process is holding a resource and waiting for another resource acquired by some other process. | | 2M |
| i) | A file is a named collection of related information that is recorded on secondary storage such as magnetic disks, magnetic tapes and optical disks. In general, a file is a sequence of bits, bytes, lines or records whose meaning is defined by the files creator and user. | | 2M |
| j) | Name of the file, identifier of the file, type of the file, location, size, protection and Time and Date are the Directory attributes. | | 2M |
| **PARTB**  **(Answer all five units, 5 X 10 = 50 Marks)** | | | |
| **UNIT1** | | | |
| 2 | a) | Functional Units of a Computer block diagram (2M)  Explanation of each functional unit of a computer (3M) | 5M |
|  | b) | Flow chart of Bhoot’s Algortihm (3M)  Explantion of Booths Algortihm by considering a suitable example. (2M) | 5M |
| **(OR)** | | | |
| 3 | a) | Draw the flow chart of division algorithm (3M)  Explain with a suitable example (2M) | 5M |
|  | b) | Any five differences between multicompure and multiprocessor . | 5M |
| **UNIT2** | | | |
| 4 | a) | Any Five diferrences between RISC & CISC | 5M |
|  | b) | Draw Instruction Cycle flow Chart diagram (3M)  Take an instruction as example and explain how Instruction executed. | 5M |
| **(OR)** | | | |
| 5 | a) | i) Direct Addressing mode description with example explantion (3M)  ii) Immediate Addressing Mode Description with suitable example explanation (2M) | 5M |
|  | b) | Stack Organinization expalnation with suitable diagram | 5M |
| **UNIT3** | | | |
| 6 | a) | Write brief information about the ability of the operating systems. | 5M |
|  | b) | Defintion of Sytem call.(2M)  A Scenario-based system call execution with a suitable diagram (3M) | 5M |
| **(OR)** | | | |
| 7 | a) | Explanation about the need of protection and secutirty in operating system | 5M |
|  | b) | Explantion about resource managemnet in operationg system. | 5M |
| **UNIT4** | | | |
| 8 | a) | Dead lock Avoidance explantion with a Baker’s Algorihm (2M)  Example of Banker’s Algorithm with knowning whether given sequnce of process request the resoures is safe or not. | 5M |
|  | b) | Explantion of any two process scheduling algoritms with suitable examples. | 5M |
| **(OR)** | | | |
| 9 | a) | Breif explanation about Inter process communications like shared-memory systems and Message-passing Systems. | 5M |
|  | b) | List page replacement algortihms (1M)  Explantion about one page replacement algorithms with suitable exampes. | 5M |
| **UNIT5** | | | |
| 10 | a) | There are three ways to access a file into a computer system: Sequential-Access, Direct Access, Index sequential Method (1M)  Explanation of each acess method(4M) | 5M |
|  | b) | There are three main disk space or file allocation methods. Contiguous Allocation. Linked Allocation. Indexed Allocation. (1M)  Explantion of each allocation method (4M) | 5M |
| **(OR)** | | | |
| 11 | a) | Explantion of SCAN and FCFS disk scheduling algorithms with an example. (3M + 2M) | 5M |
|  | b) | Explanation of RAID Levels with suitable diagram. | 5M |