Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **17CA2045** | **Duration :** | **3hrs** |
| **Sub. Name :** | **OPERATING SYSTEM AND ITS SECURITY** | **Max. Marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Write short notes on virtual machine and hypervisors. Give reasons for users opting virtual machine. | CO1 | 6 |
| b. | Describe the various functions performed by operating system. | CO2 | 14 |
| **(OR)** | | | | |
| 2. |  | Write short notes on the following:  i) Booting Process  ii) User interfaces  iii) System call and its types  iv) Kernel | CO1 | 5  5  5  5 |
|  |  |  |  |  |
| 3. | a. | Explain path management schemes-Symmetrical and Asymmetrical. | CO3 | 5 |
| b. | Write down the steps followed by operating system in handling a read request from an application program. | CO3 | 15 |
| **(OR)** | | | | |
| 4. | a. | Describe the technical details of CD-ROM. | CO3 | 6 |
| b. | Explain the functions of various data structures managed by a I/O procedure**.** | CO3 | 14 |
|  |  |  |  |  |
| 5. | a. | Give brief outline of the fields of process control block. | CO4 | 5 |
| b. | Contruct PCBs for the following processes. Trace the steps followed in creation of a new process. Also depict the changes in the PCBs after a new process is allotted a PCB.   |  |  | | --- | --- | | Status Queue | Process Queue | | Ready | 5, 0, 2, 10, 12 | | Blocked | 8, 13, 4, 14, 7 | | Free | 1, 11, 6, 9 | | Running | 3 | | CO4 | 15 |
| **(OR)** | | | | |
| 6. |  | Discuss how a deadlock situation could be handled. | CO5 | 20 |
|  |  |  |  |  |
| 7. | a. | i) List out the various memory management schemes.  ii) Write brief notes on the criterias used in judging the efficiency  of memory management methods. | CO5 | 2  3 |
| b. | Describe Fixed partition memory management scheme. Also explain its address translation and relocation process. | CO5 | 15 |
| **(OR)** | | | | |
| 8. | a. | Compare paging with segmentation. | CO5 | 5 |
| b. | Illustrate the address translation and relocation process adopted by segmentation technique. | CO5 | 15 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Outline the guidelines for creating a secured password. | CO6 | 6 |
| b. | Explain the process followed in ensuring only legimate users access the centralized environment. | CO6 | 14 |