Seat No.: _____          Enrolment No._____

# GUJARAT TECHNOLOGICAL UNIVERSITY
### DIPLOMA ENGINEERING – SEMESTER- III  EXAMINATION –Summer- 2019

**Subject Code: 3330701**                                    **Date: 13-05-2019**
**Subject Name: Operating System**
**Time: 02:30 PM to 05:00 PM**                          **Total Marks: 70**
**Instructions:**

      **1. Attempt all questions.**
      **2. Make Suitable assumptions wherever necessary.**
      **3. Figures to the right indicate full marks.**
      **4. Use of programmable & Communication aids are strictly prohibited.**
      **5. Use of only simple calculator is permitted in Mathematics.**
      **6. English version is authentic.**

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|---|---|---|---|
| **Q.1** | | Answer any seven out of ten. | **14** |
| | 1. | List out types of operating system | |
| | 2. | List out conditions for deadlock to occur | |
| | 3. | List different states of process. | |
| | 4. | Explain chmod command | |
| | 5. | List out attributes of file. | |
| | 6. | Explain race condition. | |
| | 7. | List main tasks of operating tasks. | |
| | 8. | Show memory hierarchy in memory management. | |
| | 9. | Define IPC | |
| | 10. | Differentiate absolute file path and relative file path | |
| **Q.2** | (a) | Explain batch OS. | **03** |
| | | OR | |
| | (a) | Explain multiprogramming OS. | **03** |
| | (b) | Explain time sharing OS. | **03** |
| | | OR | |
| | (b) | Explain real time OS. | **03** |
| | (c) | Explain mutual exclusion | **04** |
| | | OR | |
| | (c) | Explain life cycle of process. | **04** |
| | (d) | Explain virtual memory | **04** |
| | | OR | |
| | (d) | Explain fixed size partitioning in memory management. | **04** |
| **Q.3** | (a) | Explain round robin algorithm with example. | **03** |
| | | OR | |
| | (a) | Explain SRTN algorithm with example | **03** |
| | (b) | Explain cpu-bound process and i/o-bound process with example | **03** |
| | | OR | |
| | (b) | Explain preemptive and non-preemptive scheduling with example | **03** |
| | (c) | Describe external fragmentation. | **04** |
| | | OR | |
| | (c) | Describe swapping of memory management. | **04** |
| | (d) | List out disk space allocation methods. Explain any one | **04** |
| | | OR | |

|  | (d) | Explain OS services. | **04** |
|---|---|---|---|
| **Q.4** | (a) | Explain in brief: Linux directory structure. | **03** |
|  |  | OR |  |
|  | (a) | Explain multiprogramming with dynamic partition | **03** |
|  | (b) | Explain Logical structure of a disk. | **04** |
|  |  | OR |  |
|  | (b) | Explain address translation in paging. | **04** |
|  | (c) | Explain deadlock with example and diagram. | **07** |
| **Q.5** | (a) | Write a shell script to find maximum of 3 numbers | **04** |
|  | (b) | What is paging? Explain TLB | **04** |
|  | (c) | List out disk space allocation methods. Explain any one. | **03** |
|  | (d) | Explain any three file operations. | **03** |

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