# C. U. SHAH UNIVERSITY
## Summer Examination 2019

Subject Name:- **Operating System (OS)**

Subject Code:  **5CS03MOS1**           Branch: **M. C. A.**

Semester: **3**      Date: **18/03/2019**      Time: **2:30 To 5:30**      Marks: **70**

*Instructions:*

     (1) Use of Programmable calculator and any other electronic instrument is prohibited.

     (2) Instructions written on main answer book are strictly to be obeyed.

     (3) Draw neat diagrams and figures (if necessary) at right places.

     (4) Assume suitable data if needed.

## SECTION-I

| | | | |
|---|---|---|---|
| **Q. 1** | **Answer the following questions.** | | **07** |
| | (a) | Differentiate between contiguous and linked file allocation methods. | **03** |
| | (b) | Give the functions of UNIX commands: cat, chmod | **02** |
| | (c) | What is the use of Controller in I/O transfer? | **02** |
| **Q. 2** | **Attempt all questions.** | | |
| | (a) | What is Operating System? Explain different views & types of OS. | **07** |
| | (b) | Write a shell script to accept filename and displays last modification time if file exists, otherwise display appropriate message. | **07** |

**OR**

| | | | |
|---|---|---|---|
| **Q. 2** | **Attempt all questions.** | | |
| | (a) | Explain process scheduler? State the characteristics of process scheduler. What criteria affect the schedulers' performance? | **07** |
| | (b) | Explain evolution of Operating System in detail with suitable diagrams. | **07** |
| **Q. 3** | **Attempt all questions.** | | |
| | (a) | Differentiate between paging and segmentation. | **07** |
| | (b) | Enumerate the different RAID levels and explain each in short. | **07** |

**OR**

| | | | |
|---|---|---|---|
| **Q. 3** | **Attempt all questions.** | | |
| | (a) | What is a process and process table? Also enlist and explain different states of process. | **07** |
| | (b) | Enlist major goals of I/O software. Explain DMA. | **07** |

## SECTION-II

| | | | |
|---|---|---|---|
| **Q. 4** | **Answer the following questions.** | | **07** |
| | (a) | Enlist and explain in short different file attributes. | **03** |
| | (b) | Differentiate between Internal and External Fragmentation. | **02** |
| | (c) | Define: Swapping. | **02** |

**Q. 5** **Attempt all questions.**
    (a)    Write a shell script to find factorial of given number. **07**
    (b)    What is a Thread? Differentiate between process and thread. **07**

<div align="center"><strong>OR</strong></div>

**Q. 5** **Attempt all questions.**
    (a)    Explain the goals of Operating System Security. **07**
    (b)    Give the difference between Multi-programming, Multi-tasking and Multiprocessing system. **07**

**Q. 6** **Attempt all questions.**
    (a)    Which three are Page Replacement Algorithms? Discuss it in terms of page faults. **07**
    (b)    Discuss various design issues of Operating System. **07**

<div align="center"><strong>OR</strong></div>

**Q. 6** **Attempt all questions.**
    (a)    What is concurrency and how it is achieved in software? **07**
    (b)    What is deadlock? What are the necessary conditions for deadlock? **07**