

**BACHELOR OF TECHNOLOGY (C.B.C.S.) (2020 COURSE)**

**B.Tech.Sem - IV COMPUTER :SUMMER- 2022**

**SUBJECT : COMPUTER OPERATING SYSTEM**

Day : Monday

Time : 10:00 AM-01:00 PM

Date : 20-06-2022

**S-24235-2022**

Max. Marks : 60

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**N.B.:**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Draw neat and labeled diagram **WHEREVER** necessary.
  - 4) Assume suitable data if necessary.
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- Q.1** a) Enlist and explain various functions of operating system. [05]  
b) Explain architecture of operating system with a neat diagram. [05]

**OR**

- Q.1** What is System Call? Enlist and explain various types of system call. Enlist and explain goals of operating system. [10]

- Q.2** What is thread in operating system? Differentiate between process and thread. Also explain how threads are created and deleted in an operating system. [10]

**OR**

- Q.2** Explain Shortest Job First (SJF) scheduling algorithm with suitable example. [10]

- Q.3** What is deadlock? Explain two methods through which deadlock can be avoided. [10]

**OR**

- Q.3** Enlist and explain various data structures used in Bankers Algorithm. Explain Producer Consumer problem with suitable example. [10]

- Q.4** What is segmentation? Explain how segment table is used for translation of logical address to physical address. [10]

**OR**

- Q.4** Explain Least Recently Used (LRU) Page Replacement Algorithm. If following reference string is given for LRU:  
Reference String: 3, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2.  
Find : a) No. of page faults  
b) No. of Hits [10]

- Q.5** Enlist and explain sequential and direct access file methods with suitable diagram. [10]

**OR**

- Q.5** Explain first fit memory allocation method. [10]  
Blocksize = {50k, 200k, 70k, 115k, 15k}  
Jobsize = {100k, 10k, 35k, 15k, 23k}  
Apply first fit method for given data and solve.

- Q.6** a) Explain in brief authentication and encryption. [05]  
b) Enlist and explain various features of real-time kernel. [05]

**OR**

- Q.6** Enlist and explain various program threats, system and network threats in operating system. [10]

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