Enrollment No: _____   Exam Seat No:_____

C.U.SHAH UNIVERSITY
Winter Examination-2021

Subject Name: Operating System

Subject Code: 4CS05BOS1/4CS05IOS1   **Branch: B.C.A. / B.Sc.I.T.**

Semester: 5   **Date: 15/12/2021**   **Time: 11:00 To 02:00**   **Marks: 70**

Instructions:
    (1) Use of Programmable calculator & 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.

Q-1   **Attempt the following questions:**   **(14)**

a) Which of the following is not an operating system?   1
    A. Windows   B. Linux
    C. DOS   D. Oracle

b) Which Unix command is used for changing the current directory?   1
    A. Pwd   B. Rm
    C. Cd   D. Cp

c) What is UNIX?   1
    A. programming language   B. software program
    C. an operating system   D. a text editor

d) A Process Control Block(PCB) does not contain which of the following :   1
    A. Process State   B. I/O status information
    C. Process Stack   D. bootstrap program

e) In Unix, which system call creates the new process?   1
    A. Fork   B. Create
    C. New   D. None of these

f) In deadlock , for non-sharable resources like a printer, mutual exclusion   1
    A. must exist   B. must not exist
    C. may exist   D. None of these

g) Which one of the following is the address generated by CPU?   1
    A. physical address   B. absolute address
    C. logical address   D. none of the mentioned

h) echo command is used for _____   1
    A. displaying diagnostic messages   B. displaying date and time
    C. displaying errors   D. displaying operating system
                                           details

i) What is a Process Control Block?   1

A. Process type variable   B. Data Structure
C. A secondary storage section   D. A Block in memory

j) Program always deals with _____   1
    A. logical address   B. absolute address
    C. physical address   D. relative address

k) What will happen when a process terminates?   1
    A. It is removed from all queues
    B. It is removed from all, but the job queue
    C. Its process control block is de-allocated
    D. Its process control block is never de-allocated

l) Logical memory is broken into blocks of the same size called _____   1
    A. Frames   B. Pages
    C. backing store   D. none of these

m) Which Unix command is used for counting words, lines, and characters in a file?   1
    A. Wc   B. Man
    C. Count   D. Diff

n) Which editor is used by the Unix system to edit files?   1
    A. Word   B. Notepad++
    C. VI   D. Notepad

Attempt any four questions from Q-2 to Q-8

Q-2   **Attempt all questions**   **(14)**
a) What is os? Explain function of operating system.   **(7)**
b) Explain features of Unix in detail.   **(7)**

Q-3   **Attempt all questions**   **(14)**
a) Explain process state in detail.   **(5)**
b) What is scheduling? Discuss scheduling criteria.   **(5)**
c) What is deadlock? Explain characterizations of deadlock.   **(4)**

Q-4   **Attempt all questions**   **(14)**
a) Write a note on types of operating system.   **(7)**
b) List out scheduling algorithm. Explain any two with example.   **(7)**

Q-5   **Attempt all questions**   **(14)**
a) Explain logical verses physical address space in memory management.   **(5)**
b) Explain types of shell in unix.   **(5)**
c) Explain following command.   **(4)**
    (1) cat   (2) mv   (3) mkdir   (4) ls

Q-6   **Attempt all questions**   **(14)**
a) What is the use of VI editor? Explain various switching mode of VI Editor.   **(7)**
b) What is unix? Explain unix architecture with diagram.   **(7)**

Q-7   **Attempt all questions**   **(14)**
a) Explain how to prevent deadlock?   **(5)**

b) Write a note on paging concept in memory allocation. **(5)**

c) What is file System? Explain Types of file and operation of file. **(4)**

Q-8 **Attempt all questions** **(14)**

a) Write a shell script to enter number and check number is pelindrom or not. **(5)**

b) Write a shell script to enter number and print in reverse order. **(5)**

c) Write a code to find waiting time and average waiting time of given process using FCFS and SJF. **(4)**

Process	Burst Time
P1	12
P2	9
P3	8
P4	3