2021

Time : 3 hours

Full Marks : 50

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

*Answer from **all** the Groups as directed.*

Group – A
(Objective Type Questions)

1. Select the correct answer of the following : $1 \times 5 = 5$

   (a) Operating System acts as a :

   (i) Resource allocator

   (ii) Control program

   (iii) Interface

   (iv) All of these

   (b) Which of the following instruction is used to interact with memory ?

   (i) Load

(ii) Store

(iii) Both (i) and (ii)

(iv) None of these

(c) Which view of Operating System play a role ?

(i) User view

(ii) System view

(iii) Both (i) and (ii)

(iv) None of these

(d) Which program act as a core program of Computer Operating System ?

(i) Kernel

(ii) Fork

(iii) Kill

(iv) None of these

(e) Which one is true for system call ?

(i) Requests a service from the Kernel of OS

(ii) Requests a service from user of the OS

(iii) Both (i) and (ii)

(iv) None of these

2. Fill in the blanks of the following : 1×5 = 5

(a) A process created by the main process is called a _____

(b) _____ system call in UNIX is used to create process and _____ is used to terminated (kill) process.

(c) _____ is firmware used to perform hardware initialization during the booting process.

(d) pwd command is used to _____

(e) _____ command is used to search pattern in file.

Group – B

(Short-answer Type Questions)

3. Answer any **two** questions in not more that **200** words each : 5×2 = 10

(a) What is the difference betwen Kernel and Shell ?

(b) Describe the following UNIX commands with syntax and examples :

(i) cat

(ii) mkdir

(iii) chmod

(iv) cp

(c) Explain the various mode of process state. Also draw the process state diagram.

(d) What is Deadlock ? What are the necessary conditions of Deadlock ?

Group – C

(Long-answer Type Questions)

Answer any **three** questions of the following : $10 \times 3 = 30$

4. (a) Write a shell script to input any number. Print its digits in reverse order. Also print sum of its digits.

(b) Write shell script to input any string and reverse the string.

(c) (i) Write a shell script to check whether the input number is "Armstrong no. or not".

(ii) Write a program to input two numbers and swap them.

(d) What is the structure of UNIX System ? Also write advantage of using UNIX OS.

(e) What is process scheduling ? Describe its all types with suitable examples.

(f) What is system calls ? Also describe the BIOS and DOS interrupts.