

2018

Full Marks : 60

Pass Marks : 27

Time : 3 hours

The figures in the right-hand margin indicate marks

Answer from **all** Sections as directed

Section—A

Answer all questions :

1. Select the correct answers :

14×1

(a) UNIX is written in

- (i) 'C' language
- (ii) EDA language
- (iii) Perl
- (iv) None of these

(b) Which one of the following is the heart of any OS ?

- (i) Hardware
- (ii) Kernel
- (iii) Software
- (iv) Users

(2)

- (c) Operating system is a
- (i) system software
 - (ii) application software
 - (iii) generated software
 - (iv) None of these
- (d) Korn Shell was developed by
- (i) David Korn
 - (ii) Steve Korn
 - (iii) Bill Joy
 - (iv) Steve Bourne
- (e) The command used for comparing two files is
- (i) comp
 - (ii) uniq
 - (iii) compare
 - (iv) diff
- (f) The smallest unit of the processing is
- (i) process
 - (ii) bit
 - (iii) byte
 - (iv) thread

(3)

- (g) The example of nonpreemptive scheduling is
- (i) robin round
 - (ii) round robin
 - (iii) first come first serve
 - (iv) LIFO
- (h) The gzip command compresses the file with extension
- (i) gzip
 - (ii) .gz
 - (iii) gp
 - (iv) .g
- (i) Which type of file organisation is supported by magnetic tape?
- (i) Random file
 - (ii) Sequential file
 - (iii) Index sequential
 - (iv) All of these
- (j) UNIX Operating System is
- (i) portable
 - (ii) multitasking
 - (iii) multiuser
 - (iv) All of these

(4)

- (k) Shell is a
- (i) hardware component
 - (ii) command interpreter ✓
 - (iii) compiler
 - (iv) CPU scheduling
- (l) CMP command is used to
- (i) remove the file
 - (ii) create the file
 - (iii) copying the file
 - (iv) companion of file ✓
- (m) mkdir command is used to
- (i) make directory ✓
 - (ii) make file
 - (iii) Both (i) and (ii)
 - (iv) None of these
- (n) Which command is used to search a pattern in a file?
- (i) LS
 - (ii) grep ✓
 - (iii) chgrp
 - (iv) mn

(5)

2. State whether the following statements are True or False : 10×1
- (a) UNIX is a Single-user Operating System. F
 - (b) The UNIX shell acts as command interpreter. T
 - (c) An unsafe state always leads to a deadlock. T
 - (d) The programming of 1st Generation Computer was done in Machine Language. T
 - (e) Multiple partitions allocation technique reduces external fragmentation. T
 - (f) mkdir command can create more than one directory at a time. T
 - (g) UNIX does not support multitasking. F
 - (h) All the devices are considered as files in UNIX. T
 - (i) The we command works only on text files. F
 - (j) A user can change his password using Pwd command. F

(6)

Section—B

3. Answer *any four* questions : 4×3

- (a) What is System Call? Describe the various types of system call.
- (b) Explain the following UNIX commands :
 - (i) Cat
 - (ii) ls
 - (iii) CP
 - (iv) WC
- (c) Describe the objective of long-term schedulers.
- (d) Explain the difference between internal and external fragmentations.
- (e) Write a shell script to accept a number. Check and display whether it is a prime number or not.
- (f) What is Operating System? What are the main functions of the OS ?
- (g) Write a shell script to find the factorial of a given number.

(7)

Section—C

4. Answer *any four* questions : 4×6

- (a) What is kernel? What are the main functions of kernel?
- (b) Explain the various scheduling algorithms.
- (c) Write a shell script to accept a number. Check and display total even and odd number.
- (d) How is a process different from a program? Explain the process state transition with the help of diagram.
- (e) Explain the three modes of vi editor.
- (f) Discuss disk allocation method with free space management.
- (g) Write short notes on *any two* of the following :
 - (i) Multiuser and multitasking
 - (ii) Interrupts
 - (iii) Process states
 - (iv) LRU page replacement algorithm.