

NOV 2017

Total No. of Questions : 10]

SEAT No. :

P2459

[Total No. of Pages : 2

[5253] - 182

T.E. (Computer Engineering)
OPERATING SYSTEMS DESIGN
(2012 Pattern) (Semester - I)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates :

- 1) *Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right side indicate full marks.*

Q1) Elaborate on the following algorithms in brief any two **[10]**

- a) iget()
- b) ifree()
- c) namei()
- d) getblk()

OR

- Q2)** a) Describe the structure of a regular file with proper diagrammatic representation. **[5]**
- b) What is free space management (FSM)? Explain how bit vector and linked list performs FSM. **[5]**

- Q3)** a) Write and explain algorithms for **[6]**
- i) Allocating region
 - ii) Freeing a region
- b) Elaborate on the race condition in catching signals. **[4]**

OR

- Q4)** a) Explain with example data structures used for demand paging. **[6]**
- b) State in brief page aging. **[4]**

- Q5)** a) Write short notes on **[8]**
- i) Tunis system
 - ii) Performance Limitations
- b) Explain in short — pipe, message queues Explain multiprocessor system with it benefits. **[8]**

P.T.O.

OR

- Q6)** a) What is ptrace system call? Explain Process tracing in detail. [8]
b) Provide solution to producer-Consumer process problem using semaphore. [8]

- Q7)** a) Write short note on egrep, fgrep and sort utility. [9]
b) Write short notes on nmake and cmake. [4]
c) Differentiate BIOS with EFI? [3]

OR

- Q8)** a) Write a short note on [6]
i) Mork Manager
ii) Shim Manager
b) What is secure boot? [2]
c) What is make utility? Explain it with example. Consider your own makefile. [8]

- Q9)** a) Write a note on handheld devices. List various OS used for handheld devices. [6]
b) Write a short note on [6]
i) Frame of references
ii) Windows vista scheduling
c) Draw and explain Android OS architecture. [6]

OR

- Q10)** a) Explain the design issues of multiprocessor scheduling. [6]
b) Explain scheduling in [6]
i) Linux Operating Systems
ii) UNIX free BSD OS.
c) Compare Windows NTFS and ReFS file systems. [6]

