

- Instructions :**
- (1) All questions are compulsory.
 - (2) Illustrate your answer with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data if necessary.
 - (5) Preferably, write the answers in sequential order.

1. (a) Attempt any **THREE** of the following : [12]
 - (i) Describe real time operating system in brief.
 - (ii) What is process management? State four functions to be performed by OS for process management.
 - (iii) What is file? List and explain attributes of files.
 - (iv) Explain two level directory structure with the help of diagram.

(b) Attempt any **ONE** of the following : [6]

 - (i) Describe following operating system structures.
(1) Monolithic (2) Microkernel
 - (ii) Explain any six services provided operating system. Draw diagram showing services.
2. Attempt any **FOUR** of the following : [16]
 - (a) With neat diagram describe use of Process Control Block (PCB).
 - (b) Define the following terms :
 - (i) Preemptive scheduling
 - (ii) Nonpreemptive scheduling
 - (c) Describe working of sequential and direct access methods.
 - (d) What is clustered system? Explain it.
 - (e) Draw and explain process state diagram.
 - (f) Compare UNIX and LINUX with respect to following points.
User interface, number of shells, providers, processing speed.
3. Attempt any **FOUR** of the following : [16]
 - (a) List any four operating system services and describe in one/two sentences.
 - (b) Describe concept of virtual memory with suitable example.
 - (c) Explain interprocess communication.
 - (d) Write steps for Banker's algorithm to avoid deadlock.
 - (e) State necessary condition for deadlock.
 - (f) List different types of files. Explain basic operations on file.
4. Attempt any **THREE** of the following : [12]
 - (a) What is system call? List types of system call with one example of system call.
 - (b) Describe any four secondary storage management activities.
 - (c) What is thread? Explain users and Kernel threads.
 - (d) State and describe types of schedules. Describe how each of them schedule the job.
5. Attempt any **TWO** of the following : [16]
 - (a) Solve the following problem using SJF and Round Robin (RR) scheduling algorithm.
Find average waiting time for each algorithm.

Process	Burst time
P ₁	10
P ₂	3
P ₃	7
P ₄	5

- (b) Explain how priority scheduling algorithm works with suitable example, also list advantages and disadvantages.
 (c) Calculate average waiting time for FCFS and SJF for following table.

Process	Arrival Time	Burst Time
P1	0	8
P2	1	4
P3	2	9
P4	3	5

6. Attempt any **FOUR** of the following :

[16]

- (a) What is multiprocessor system? Give two advantages of it.
 (b) Draw and explain structure of unix operating system.
 (c) Explain the concept of context switching.
 (d) Differentiate between paging and segmentation.
 (e) Explain booting system of UNIX

Paper Discussion Schedule for T.Y. Diploma (Sem. V) – All Subjects

Date	Day	Timing	Centres
14 Nov. 2016	Monday	9 a.m. to 11 a.m.	Borivali ,Thane
14 Nov. 2016	Monday	12 p.m.to 2 p.m.	Dadar

□ □ □ □ □