

Scheme - I

Sample Question Paper

Program Name : Diploma in Engineering Group

Program Code : CO / CM / CW / IF

Semester : Fifth

Course Title : Operating System

Marks : 70

22516

Time: 3 Hrs.

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers 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.

Q.1) Attempt any FIVE of the following.

10 Marks

- a) Differentiate between Batch Operating System and Time shared Operating System.
(any two points)
- b) State any four services of Operating System.
- c) Define : Process , Program
- d) State two features of preemptive scheduling.
- e) Define following terms
 - i) Page fault
 - ii) Segmentation
- f) Write syntax of ps command and explain its use with the help of suitable example.
- g) List any four file attributes.

Q.2) Attempt any THREE of the following.

12 Marks

- a) Explain dual modes of operations of an Operating system.
- b) Describe essential activities done by an Operating System for protection and sharing.
- c) State what is interprocess communication and explain its advantages.
- d) Describe different scheduling criteria.

Q.3) Attempt any THREE of the following.

12 Marks

- a) Define PCB. List information contained in PCB and explain any two .
- b) Define deadlock and state the necessary conditions for deadlock.
- c) Explain following terms with respect to Memory management :
 - I. Compaction
 - II. Swapping.
- d) Enlist different file allocation methods and explain any two.

Q.4) Attempt any THREE of the following.

12 Marks

- a) Compare between Windows and LINUX Operating System.(any four points)
- b) Write any four system calls related to device management.

- c) Compare between short term and long term scheduler.(any four points)
- d) Compare FCFS and SJF Scheduling algorithm with any four points.
- e) Describe contiguous memory allocation done by Operating System with the help of suitable example.

Q.5) Attempt any TWO of the following.

12 Marks

- a) Write two uses of following Operating System tools :
 - i. Performance Monitor
 - ii. Task scheduler
 - iii. User Management
- b) Write the output of the following commands.
 - a. Kill 9042018
 - b. Ps 07121975
 - c. Sleep 05
- c) Given a page reference string(arrival) with four page frames, calculate the page faults with FIFO and LRU page replacement algorithms respectively :
12, 3, 4, 5, 1, 2, 5, 1, 2, 3, 4, 5, 1,6,7,8,7,8,9,7,8,9,5,4,4,5,4,2.

Q.6) Attempt any TWO of the following.

12 Marks

- a) Solve given problem by Using FCFS to calculate average waiting time and turnaround time.

Process	Arrival time	Burst time
P1	0	7
P2	1	4
P3	2	9
P4	3	6
P5	4	8

- b) Compare between bitmap and linked list free space management techniques.(any six points)
- c) Construct and explain directory structure of a file system in terms of single level, two level and tree structure.

Scheme - I

Sample Test Paper - I

Program Name : Diploma in Engineering Group

Program Code : CO / CM / CW / IF

Semester : Fifth

Course Title : Operating System

Marks : 20

22516

Time: 1 Hour

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers 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.

Q1. Attempt Any FOUR

08 Marks

- a) Differentiate between multiprogramming and multiprocessing. (Any 2 Points)
- b) Draw Layered structure of operating system.
- c) List any four types of OS.
- d) State any two activities performed by file management component of an Operating Systems
- e) List any four operating system services.
- f) Draw process state transition diagram .

Q2. Attempt any THREE

12 Marks

- a) Explain real time system. List its any four application.
- b) What is the purpose of the system calls? State any two calls with its functions.
- c) Describe process control block with the help of suitable diagram.
- d) Differentiate between Long term scheduler and Short term scheduler w.r.t. following points:
 - i) Selection of job
 - ii) Frequency of execution
 - iii) Speed
 - iv) Accessing which part of system

Scheme - I

Sample Test Paper - II

Program Name : Diploma in Engineering Group

Program Code : CO / CM / CW / IF

Semester : Fifth

Course Title : Operating System

Marks : 20

22516

Time: 1 Hour

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers 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.

Q1. Attempt Any FOUR

08 Marks

- a) Describe CPU burst cycle and I/O burst cycle.
- b) What is deadlock? Give characteristics of deadlock.
- c) Describe Multilevel queue scheduling with labelled diagram.
- d) Define the term swapping.
- e) Explain different process scheduling criteria.
- f) List the directory structures.

Q2. Attempt any THREE

12 Marks

- a) With suitable example describe how to use bit map method for free space management.
- b) State the syntax and use of following process related commands :
 - i. bg
 - ii kill
- c) Describe working of contiguous file allocation method.
- d) Calculate average waiting time with Round Robin for following processes in memory.(Time Slice = 4ms)

Process	Burst time
P1	3
P2	5
P3	7
P4	4