



BE-3572

Third Year B. C. A. (Sem. V) Examination

October/November – 2017

Operating System - II

Time : 3 Hours]

[Total Marks : 70

Instruction :

नीचे धर्शावेव निशानीवाणी विगतो उत्तरवदी पर अवश्य लपदी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
Third Year B. C. A. (Sem. V)	<input type="text"/>
Name of the Subject :	<input type="text"/>
Operating System - II	<input type="text"/>
Subject Code No. : <input type="text"/> 3 <input type="text"/> 5 <input type="text"/> 7 <input type="text"/> 2	Student's Signature
Section No. (1, 2,.....) : <input type="text"/> NIL	

1 Answer in short : (any seven)

14

- (1) What is the difference between page and segment ?
- (2) Define principle of Locality.
- (3) What is a context switching ?
- (4) What is MMU ?
- (5) What is page hit and page miss ratio ?
- (6) Define term : CPU utilization and response time.
- (7) Give the difference between deadlock and starvation.
- (8) What purpose dose the modified bit serve in demand paging system ?

BE-3572]

1

[ Contd.....

2 Do as directed : 14

(a) Consider the following set of process, with the length 7 CPU-burst time given in milliseconds :

Process	Busrst time	Priority
P1	4	2
P2	7	1
P3	9	4
P4	2	1
P5	4	3

The process are assumed to have arrived in following order : P1, P2, P3, P4, P5 all at time zero

(i) Draw Gantt chart to illustrate execution of process using following algorithm :

- SJF scheduling
- RR scheduling (Quantum = 1)
- Priority based scheduling

(ii) Calculate turnaround time and waiting time of each process in each scheduling algorithm.

(b) Explain segmentation with paging scheme in detail. 7

OR

Explain memory allocation scheme with fragmentation in detail.

3 Write short notes : (any three) 18

(1) Resource Allocation Graph

(2) Hash Page Table

(3) TLB

(4) Process state table and PCB.

4 Do as directed : 14

(a) Consider the following reference string : 7

7, 1, 2, 3, 1, 4, 1, 5, 3, 4, 1, 4, 3, 2, 3, 1, 2, 7, 1, 2

How many page faults will occur for the following replacement policies ? Consider the memory is empty initially and memory is having 4 frames.

(i) FIFO page replacement algorithm

(ii) OPT page replacement algorithm

(iii) LRU page replacement algorithm.

Also explain which algorithm is better and why ?

(b) Discuss producer and consumer problem using Semaphores. Also write necessary code for implementing the solution. 7

OR

What is safe state ? Explain Banker's Algorithm to avoid deadlock.

5 Answer the following : (any two) 10

(1) Explain Multilevel feedback scheduling.

(2) Discuss Peterson's solution for achieving the Mutual exclusion.

(3) Write steps to handle page faults.