(b) Give the basic concepts of Paging and Segmentation. 8

7. (a) What is demand paging and what is its use ? 8

(b) List the steps needed to perform the page replacement. 8

UNIT – IV

8. Explain various file allocation methods in detail with their pros and cons with the help of suitable diagram for each method. 16

9. Suppose that a disk drive has 1000 cylinder, numbered 0 to 999. The drive is currently serving a request at cylinder 43, and the previous request was at cylinder 125. The Queue of pending requests in FIFO order is : 86, 470, 913, 774, 948, 509, 22, 750, 130.

Calculate the total distance(in cylinder) that the disk arm moves to satisfy all the pending requests for each of the disk-scheduling algorithms i.e.

FCFS, SSTF, SCAN, LOOK, C-SCAN, C-LOOK. 16

Roll No. .....

97669

BCA 3rd Semester (New) Examination – November, 2019

INTRODUCTION TO OPERATING SYSTEM

Paper : BCA-201

Time : Three Hours] *[Maximum Marks : 80*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. 1 is ***compulsory***. Attempt ***four*** more questions selecting ***one*** question from each Unit. All questions carry equal marks.

1. (a) What are the basic elements of Operating system ?

(b) What is PCB ? Specify the information maintain in it.

(c) What is a Dispatcher ?

(d) How does deadlock avoidance differ from deadlock prevention ?

(e) What is logical address space and physical address space ?

(f) What is thrashing ?

(g) Give the example of relative and index file.

(h) Examine the need for disk scheduling ? $2 \times 8 = 16$

UNIT – I

2. (a) What is an Operating System ? What are the different services provided to its user ? 8

(b) Explain the Operating System structure. 8

3. (a) Differentiate between program and process. Explain process life cycle in detail. 8

(b) Explain the inter process communication in detail. 8

UNIT – II

4. Consider the following set of processes with the length of the CPU-burst time given in milliseconds :

Process	Burst time	Priority	Arrival Time
P1	8	3	4
P2	5	2	0
P3	3	1	1
P4	4	4	3
P5	1	2	2

Draw Gantt chart; calculate Avg. Turnaround time and Avg. Waiting time for FCFS, SJF (pre-emptive & non-pre-emptive), Priority Scheduling (pre-emptive and non-pre-emptive) and RR (Quantum=2) scheduling algorithms. 16

5. (a) Define deadlock. Explain 4 necessary conditions for deadlock. 8

(b) Explain Banker's Algorithm to deal with the problem of Deadlock. 8

UNIT – III

6. (a) Explain the contiguous memory allocation techniques. 8