Roll No. .....

Total Pages : 3

204301

Dec. 2018

BCA, 3rd Semester

INTRODUCTION TO OPERATING SYSTEM

(BCA- 17-201)

Time : 3 Hours]

[Max. Marks: 75

Instruction :

(i) It is compulsory to answer all the questions (1.5 marks each) of Part-1 in short.

(ii) Answer any four questions from Part-2 in detail.

(iii) Different parts of the same question are to be attempted adjacent to each other.

(iv) Assume suitable standard data wherever required, if not given.

PART–1

1. (a) Define thrashing? (1.5)

(b) What is the difference between Batch processing, Real time processing, Time sharing and Distributed processing? (1.5)

(c) Mention the necessary conditions for a deadlock to occur. (1.5)

(d) What are cooperating processes? (1.5)

(e) Difference between process and thread. (1.5)

(f) What is internal Fragmentation in memory management? (1.5)

(g) Explain Real time operating system. (1.5)

(h) Why does the page size is of 2n? (1.5)

(i) Give the difference between multiprogramming and multiprocessing. (1.5)

(j) What are cooperating processes? (1.5)

PART–2

2. (a) What do you mean by system call? Discuss system call parameters. Also discuss different types of system calls. (10)

(b) Explain the different types of operating system. (5)

3. (a) **Differentiate between logical and physical address space with the help of example.** (5)

(b) **Write a short note on contiguous allocation and linked allocation.** (10)

4. (a) **What is demand paging and explain performance of demand paging?** (5)

(b) **What is page replacement? Why it is required? Differentiate between least recently used page replacement algorithm and optimal page replacement.** (10)

5. (a) Suppose that a disk drive has 200 cylinders, numbered 0 to 199. The work queue is : 23, 89, 132, 42, 187. Determine the total distance for the following disk scheduling algorithms:

(i) SCAN

(ii) LOOK

(iii) C-SCAN

(iv) C-LOOK. (10)

(b) Differentiate between blocking *vs.* non-blocking I/O. (5)

6. (a) Explain the different states of the process along with process state transition diagram. (5)

(b) Discuss the dining philosopher problem with its solution and reader writer problem. (10)

7. What do you mean by directory structure? Also discuss different types of directory structures. (15)
