Roll No. ....

Total No. of Questions : 13]   [Total No. of Pages : 02

Paper ID [A0219]

(Please fill this Paper ID in OMR Sheet)

BCA (404) (S05) (O) (LE) (Sem. - 4ᵗʰ)

OPERATING SYSTEM

Time : 03 Hours   **Maximum Marks : 75**

Instruction to Candidates:

1) Section - A is **Compulsory**.

2) Attempt any **Nine** questions from Section - B.

Section - A

Q1)   *(15 × 2 = 30)*

a) What does it mean for a program to be device independent?

b) Why are page size always power 2?

c) Why does the operating system need a stack?

d) What are the advantages of kernel mode processes?

e) Why is it better to allocate memory to process dynamically?

f) Compare segment and pages.

g) What is the purpose of a TLB?

h) Give a reason to lock a page in memory.

i) What is DMA?

j) Why tapes are good for backing up disks?

k) What is the purpose of device driver?

l) What is a FAT file system?

m) What are the four main tasks of a resource manager?

n) What are the advantages of threads?

o) What is response ratio?

A-76   *P.T.O.*

Section - B

(9 × 5 = 45)

Q2) Explain how a preemptive priority scheduling system would work.

Q3) Give some reason why you think LRU is a good page replacement algorithm.

Q4) Give reason why local page replacement is better than global page.

Q5) Suppose we have a computer system with a 44- bit virtual address, 64 K pages, and 4 bytes per page table entry, how many pages are in the virtual address space?

Q6) What are the advantages of multiprogramming over mono programming?

Q7) What is common between priority scheduling and SJF scheduling?

Q8) Write down the method for handling deadlocks?

Q9) What is the difference between internal and external fragmentations?

Q10) Consider the following page reference string:

1,2,3,4,2,1,5,6,2,1,2,3,7,6,3,2,1,2,3,6

How many page faults will occur for the LRU page replacement algorithm? Assume a set of three page frames (initially all empty)

Q11) Explain context switching. How can the context switching time be reduced?

Q12) What are the performance criteria for CPU scheduling algorithm.

Q13) Define critical section. How can we solve a critical section problem?

A-76   2