Roll No. | | | | | | | | | | | |

Total No. of Pages: 02
Total No. of Questions: 09

B.Tech.(IT/CSE) (Sem.-4th)

OPERATING SYSTEMS

Subject Code: BTCS-401
Paper ID: [A1183]

Time: 3 Hrs. **Max. Marks: 60**

INSTRUCTIONS TO CANDIDATE:

1) ***Section-A is Compulsory.***
2) ***Attempt any Tour questions from Section-B.***
3) ***Attempt any Two questions from Section-C.***

SECTION–A

Q1. Write briefly: (10x2=20)

a) What is dispatcher?

b) Define turn-around time?

c) What are the techniques available for Managing and Allocating devices.

d) What is a semaphore?

e) State the difference between logical address space and physical address space?

f) What do you mean by internal fragmentation?

g) Give an example of a deadlock involving only a single process?

h) Give any three File system functions?

i) State True/False: Hash table is one of the data structure used for secondary storage management

j) What are the three main parts of the linux system?

SECTION-B (4x5=20)

Q2. What is deadlock? State four necessary conditions for a deadlock situation to arise?

Q3. What is PCB and its significance in scheduling? Give its contents.

Q4. Discuss the various mechanisms used for protecting software resources?

Q5. Compare and contrast Multiprogramming, Multitasking and Multiprocessing.

Q6. Describe in brief various Page replacement algorithms.

SECTION-C

(2x10=20)

Q7. What are the major advantages of partitioned allocation? Name various memory management policies. How address calculation is done in segmentation? Give memory partition of 100k, 500k, 200k, 300k and 600k (in order). How would each of the first fit, best fit and worst fit algorithm place process of 212k, 417k, 112k, and 426 k (in order)? Which algorithm makes the most efficient use of memory?

Q8. Compare and contrast contiguous linked and indexed methods of allocating secondary storage space? Also Discuss the role of I/O Traffic Controller in device management.

Q9. A scheduling mechanism should consider various scheduling criteria to realize the scheduling objectives. State various criteria used for selection of any CPU scheduling algorithm, Discuss in detail any three pre-emptive CPU scheduling methods.

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