

Seat No. **MAR_APR 2025 SUMMER EXAMINATION****11731 Bachelor of Technology (NEP-2.0)****Sub. Name: Operating System - II****Sub. Code: 81547/81824****Day and Date: MAY ,15-05-2025****Total Marks: 70****Time: 02:30 PM To 05:00 PM**

Instructions:

1. All questions are compulsory
2. Assume suitable data wherever necessary and mention it boldly
3. Figures to the right indicate full marks

- Q1) Solve any 2 (Two) of the following questions(7 Marks Each) [14]**
- a) Explain the architecture of the Unix system with a neat block diagram
 - b) List and explain the advantages and disadvantages of buffer cache
 - c) With a neat schematic of hash queue headers and free list updates, explain the following scenario for the buffer retrieval :
"The kernel cannot find the block on the hash queue and in attempting to allocate a buffer from the free list, finds a buffer on the free list that has been marked "delayed write". The kernel must write the "delayed write" buffer to disk and allocate another buffer."
- Q2) Solve any 2 (Two) of the following questions(7 Marks Each) [14]**
- a) Write and explain the algorithm for OPEN system call to open a file
 - b) Explain the process of conversion of pathname to i-node with algorithm "namei".
 - c) What is super block? List and explain various fields of super block
- Q3) Solve any 2 (Two) of the following questions(7 Marks Each) [14]**
- a) What is the use of dup system call? Explain with a diagram how data structures are updated after the use of Dup
 - b) What are pipes? Explain the algorithm "pipe" for creation of unnamed pipes
 - c) Explain in detail process state transitions with a neat diagram
- Q4) Solve any 2 (Two) of the following questions(7 Marks Each) [14]**
- a) What is context of a process? Explain with diagram components of the context of a process.
 - b) Write and explain the algorithm "issig" for recognizing signals.
 - c) What is the use of fork system call? Explain the sequence of operations that kernel executes for fork.
- Q5) Solve any 2 (Two) of the following questions(7 Marks Each) [14]**
- a) Explain algorithm "malloc" for allocating space from maps
 - b) Explain the scenario of swapping process out in detail.

c) Explain Page Stealer Process

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -

This Question Paper may be distributed for following Subjects as common code.

सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

- 1] (101) Bachelor of Engineering (81824) Operating System - II Part 3 SEM 6
- 2] (1154) B.Tech. CBCS (81547) Operating System - II Part 3 SEM 6

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