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GS-387

IV Semester B.A./B.Sc. Examination, May/June 2019

COMPUTER SCIENCE - IV

Operating System and Unix

(F+R) (CBCS) (2015-16 & Onwards)



Time : 3 Hours

Max. Marks : 70

Instructions to Candidates : Answer all the Sections.

SECTION - A

I. Answer any ten questions. Each question carries two marks.

10x2=20

1. What is an O.S. ? List any 2 functions of O.S.
2. Differentiate between program and process.
3. What is Dispatcher ?
4. What is mutual exclusion ?
5. What is starvation ?
6. Define logical and physical address space.
7. What is Compaction ?
8. Mention the features of unix O.S.
9. Explain cmp command.
10. Explain different types of users in unix.
11. What is Daemon Processer ?
12. What is a filter ? Name any two filters.

P.T.O.



SECTION - B

- II. Answer **any five** questions. Each question carries **ten** marks. **5x10=50**
13. (a) Explain : **5**
 (i) Multi programmed systems
 (ii) Time - sharing systems
 (b) Explain the components of operating system. **5**
14. (a) What is CPU scheduling ? Explain different scheduling criterias. **4**
 (b) Consider the following set of processor : **6**
- | processor | Arrival time | CPU-burst time |
|-----------|--------------|----------------|
| P1 | 0 | 10 |
| P2 | 1 | 1 |
| P3 | 2 | 2 |
| P4 | 3 | 10 |
| P5 | 4 | 5 |
- Draw a Gantt chart and calculate Turn-around time and Average waiting time using
 (i) FCFS and (ii) SJF.
15. (a) What is deadlock ? Explain the characteristics of a deadlock situation. **5**
 (b) Explain any two methods of breaking and recovery from deadlock. **5**
16. (a) What is Fragmentation ? Explain Internal and External fragmentation. **5**
 (b) Explain any two file accessing methods. **5**
17. (a) Explain Unix System Architecture. **5**
 (b) Explain Super block and Inoder table of unix file system. **5**
18. (a) Explain different status of a process in unix. **5**
 (b) What are the different modes of setting file permissions ? Explain with an example. **5**
19. (a) What are positional parameters ? Explain with an example. **4**
 (b) Explain different branching control structure in shell programming. **6**
20. (a) Write a shell program to find the given number is prime or not. **5**
 (b) Write a shell script to print a string in reverse order. **5**