



MS – 369

IV Semester B.A./B.Sc. Examination, May 2016  
(CBCS) (Fresh) (2015 – 16 & Onwards)  
Computer Science – IV  
OPERATING SYSTEM AND UNIX

Time : 3 Hours

Max. Marks : 70

**Instruction :** Answer all the Sections.

SECTION – A

I. Answer any ten questions. Each question carries two marks. (2×10=20)

- 1) Define distributed system. Write any two functions of distributed system.
- 2) State the necessary conditions for a deadlock to occur.
- 3) Define the following :
  - a) throughput
  - b) seek-time.
- 4) Explain swap () instruction.
- 5) Differentiate between binary and counting semaphore.
- 6) What is spooling ? List any two advantages of spooling.
- 7) Explain the following UNIX commands with example.
  - i) wall
  - ii) expr.
- 8) What is a shell ? Mention any two UNIX shells.
- 9) Write any two UNIX system commands.
- 10) Which command is used to perform the following task.
  - i) Count the number of lines and words
  - ii) List all the files and folders.
- 11) What does the first triplet rwx stands for in UNIX ? Translate the following to octal code r\_\_ rw\_\_ wx.
- 12) Write the output for the following script segment

```
read n (Assume n = 2)
for i in 1 2 3 4 5
do
echo "$n * $i = `expr $n \* $i`"
done
```

P.T.O.



## SECTION – B

- II. Answer **any five** questions. **Each** question carries **ten** marks. **(10×5=50)**
- 13) a) What is Batch operating system ? Briefly explain about the components of operating system. 6  
b) Explain context – Switching. 4
- 14) a) Differentiate between Pre-emptive and Non-Pre-emptive scheduling. 6  
b) Write a note on starvation. 4
- 15) a) Define critical section problem. What are the requirements of a critical section problem ? 5  
b) What is fragmentation ? Explain the different types of memory fragmentation. 5
- 16) a) Explain FCFS disk scheduling algorithm. 5  
b) Explain LRU page replacement algorithm. 5
- 17) a) Explain the architecture of UNIX operating system. 6  
b) Explain grep command. 4
- 18) a) Define a process. Explain the state transition diagram of a process context in UNIX. 6  
b) Discuss about the various system calls in UNIX for process control. 4
- 19) a) Explain the structure of UNIX file system. 5  
b) What are the different modes for setting file permissions in UNIX ? Explain with example. 5
- 20) a) Write a shell script to find factorial of a number. 4  
b) Explain the file compression and de-compression commands in UNIX with an example. 6
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