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 grcp 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**
