

**Master of Science (M.Sc.) Third Semester (CBCS) (Computer Science) Examination****FOUNDATION–OPERATING SYSTEM CONCEPTS****Optional Paper–4****Paper–IV**

Time : Three Hours]

[Maximum Marks : 80

**N.B. :—** (1) All questions are compulsory and carry equal marks.

(2) Draw well labelled diagram wherever necessary.

**EITHER**

1. (a) Explain different generations of operating system. 8
- (b) Define operating system. Write about Realtime and multiprocessor operating system. 8

**OR**

- (c) What is system call ? Explain in detail. 8
- (d) Explain the following memory management schemes :
- (i) Paging
- (ii) Segmentation. 8

**EITHER**

2. (a) What is cooperating process ? Explain following interprocess communication models :
- (i) Shared Memory
- (ii) Message Passing. 8
- (b) What is Thread ? Explain threads in Kernel and its scheduler activation. 8

**OR**

- (c) What is process ? Explain various status of process in detail. 8
- (d) Explain the following :
- (i) Process hierarchy
- (ii) Process creation
- (iii) Process termination. 8

**EITHER**

3. (a) Explain the following :
- (i) File structure
- (ii) File types. 8
- (b) What are the advantages of using shared file ? Explain how symbolic linking is useful in implementation. 8

**OR**

- (c) What is Directory ? What are different levels of directory system ? Explain. 8
- (d) Write short notes on :
- (i) Windows File System.
  - (ii) Unix File System. 8

**EITHER**

4. (a) What is Booting ? Explain warm booting and cold booting. 8
- (b) Explain the advantages of Windows operating system. 8

**OR**

- (c) What do you mean by Internal and External command ? Explain any six internal commands with syntax and example. 8
- (d) Explain the use of run command with syntax and example ; also write a note on drivers in Windows operating system. 8
5. (a) Define Deadlock. Explain various conditions of deadlock. 4
- (b) Write a note on "Scheduling". 4
- (c) Explain various directory operations. 4
- (d) Explain security in Unix Operating System. 4