

Seat No \_\_\_\_\_

**B.SC. (IT)**  
**SEMESTER – III EXAMINATION**  
**APRIL-2015**  
**PAPER NO: 301 – OPERATING SYSTEMS**

**Durations : 2:30 hrs**

**Total Marks: 70**

**Q.1 Answer the Following:** **14 marks**

- A) What is Operating System? List the types of Operating System and explain any one of them
- B) Explain different Operating System Services.

**OR**

- A) Explain the difference between Windows API calls and Unix/Linux System calls.
- B) What is multiprogramming OS ? Explain with an example.

**Q.2 Answer the Following:** **14 marks**

- A) With the help of Process State diagram explain different states of process.
- B) Explain Mutual Exclusion and Semaphores.

**OR**

- A) What is Scheduling ? Explain Round Robin scheduling with an example
- B) What is a Scheduler ? Explain difference between Short term and long term scheduler

**Q.3 Answer the Following:** **14 marks**

- A) Explain Deadlock. Explain necessary condition for Deadlock to occur.
- B) Explain four necessary conditions to avoid deadlock

**OR**

- A) Explain detection and recovery of deadlocks.
- B) What is race condition ? Explain the causes of its occurrence and mitigation techniques

**Q.4 Answer the Following:** **14 marks**

- A) Explain memory relocation & protection with suitable example.
- B) What is swapping ? Explain with a suitable example

**OR**

- A) What is Virtual Memory ? Explain with an example
- B) What is paging ? How does it differ from segmentation ?

**Q.5 Answer the Following:** **14 marks**

- A) Explain tree structured directory in file management.
- B) Explain file operations in file management

**OR**

- A) List and explain different file attributes
- B) Explain NTFS system in detail.