

**Dr. Ambedkar College of Commerce and Economics, Wadala,  
Mumbai – 400 031  
S.Y.B.Sc. (IT) Third Semester Examination October 2015  
Sub: MOS**

**Date: 21/10/2015**

**Marks: 75**

**Time: 11.00 to 1.30 pm**

---

**Q. 1 Attempt any Two of the following: (10)**

- a) What is o.s. & need of o.s.?
- b) What is linker? And Explain two pass linking?
- c) Short note on computer system & Explain assembler, compiler & interpreter?
- d) What is a type of o.s.?

**Q. 2 Attempt any Two of the following: (10)**

- a) What are the system call, and explain its type?
- b) Write a short note on-----
- i) Generation of os.      ii) System boot.
- c) Write short note on virtual machine & JVM?
- d) What is system programming & differentiate between system programming & application programming?

**Q. 3 Attempt any Two of the following: (10)**

- a) Explain CPU scheduling algorithm in brief?
- b) What is thread? Thread basics and its advantage?
- c) What is mutual exclusion? Explain lock free data structure & multithread model?
- d) Explain basic problem of synchronization or classic problem of concurrency.
  - a. Bounded buffer problem.
  - b. Reader / writer problem.
  - c. Dining philosopher problem?

**Q. 4 Attempt any Two of the following:** (10)

- a) What are the various type of page -replacement algorithm & explain it?
- b) Explain passing concept of paging & Demand paging?
- c) Explain memory management without swapping paging?
- d) Explain fragmentation also explain virtual memory concept?

**Q. 5 Attempt any Two of the following:** (10)

- a) Explain type of file system and also explain hierarchical file system?
- b) Explain mass storage structure with diagram?
- c) Explain raid and its type (Raid0, Raid1, Raid5, Raid6, and Raid10)?
- d) Explain tertiary storage structure?

**Q. 6 Attempt any Two of the following:** (10)

- a) Explain diffe-hallmans exchange algorithm with example?
- b) Write the principle of cryptography?
- c) Explain Trojan house with its type also explain warms on concept of warms?
- d) Write a short note on security threads & also explain the virus & type of virus?

**Q. 7 Attempt any Two of the following:** (10)

- a) Explain the working of compiler & phase of compiler?
- b) Explain the service of os?
- c) Explain : i)Critical section problem with its satisfying requirement. Ii) Inter-process communication.
- d) Explain the concept of segment?
- e) Explain disc attachment and storage area network (SAN) with proper diagram?
- f) Write a short note on social engineering & also explain bug & backdoors?