3 Hours/100 Marks   Seat No.

Instructions: (1) ***All*** *questions are* ***compulsory***.

(2) *Illustrate your answers with neat sketches* ***wherever***
necessary.

(3) *Figures to the* ***right*** *indicate* ***full*** *marks.*

(4) ***Assume*** *suitable data,* ***if necessary***.

MARKS

1. a) Attempt **any three** of the following :   **12**

   a) Explain time sharing operating system.

   b) List system component. Explain any two.

   c) Describe the sequential file access method.

   d) Explain batch operating system.

   b) Attempt **any one** of the following :   **6**

   a) Explain LRU page replacement algorithm by taking suitable example.

   b) Draw and explain monolithic structure of operating system.

2. Attempt **any four** of the following :   **16**

   a) Compare : UNIX and LINUX w.r.t. following point : user interface, processing speed.

   b) Explain the working of clustered operating system.

   c) Explain static and dynamic memory partioning with advantages and drawback.

   d) Explain structure of UNIX operating system.

   e) Define process. Explain process state in detail with the help of state diagram.

   f) Expalin pre-emptive and non pre-emptive scheduling.

3. Attempt **any four** of the following :   **16**

   a) Describe any four secondary storage management activities.

   b) With suitable diagram explain contiguous allocation method.

   c) Describe any four operations performed on process.

   d) Define deadlock. What are necessary conditions for deadlock.

   e) Write steps for Banker's algorithm to avoid deadlock. Also give one example.

4. a) Attempt **any three** of the following :　　　　　　　　　　　　　**12**
    a) What is system call ? Enlist any four system call.
    b) Explain context switch with suitable example.
    c) Describe any four services provided by an operating system.
    d) State and describe types of scheduler.

  b) Attempt **any one** of the following :　　　　　　　　　　　　　**6**
    a) Describe many to one and one to one multithreading model with diagram.
    b) Explain concept of page replacement with suitable diagram.

5. Attempt **any two** of the following :　　　　　　　　　　　　　　**16**
  a) Explain Interprocess communication models with diagram.
  b) Expalin SJF algorithm with example. Also calculate average waiting time.
  c) Explain multilevel queue scheduling with example.

6. Attempt **any four** of the following :　　　　　　　　　　　　　　**16**
  a) Describe file management. Enlist the system call for file management.
  b) Describe stepwise booting process of UNIX along with diagram.
  c) Expalin generation of operating system.
  d) State and explain any four file attributes.
  e) Draw and explain process control block in detail.

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