1129

**B.E. (Electronics and Communication Engineering)**
**Seventh Semester**
**EC-711: Operating System**

Time allowed: 3 Hours                                                    Max. Marks: 50

*NOTE*: Attempt <u>five</u> questions in all, including Question No. I which is compulsory
and selecting two questions from each Unit.

x-x-x

I.   Attempt the following:-
     a) How functions ensure efficient operation in Operating System?
     b) What are conditions for dead lock?
     c) How direct access is implemented in Files? How it is different from Sequential
        access?
     d) List the outcomes produced on Disk Write.
     e) How page fault can be handled?                                        (5x2)

## UNIT – I

II.  Discuss the various methodologies used to logically implement Inter-Process
     Communication.                                                           (10)

III. Find the number of page fault for following page reference string using FIFO and
     LRU page replacement policies. Assume there are three page frames for allocation
     and first three pages account for page fault.
        Reference string: 5,4,3,2,1,4,3,5,4,3,2,1,5.                           (10)

IV.  Mention the techniques used for structuring a Page Table. Explain how "Hashed Page
     Table" and "Inverted Page Table are implemented with necessary illustrations.
                                                                              (10)

## UNIT – II

V.   Consider four processes PI, P2, P3 and P4 with burst time 3m sec, 6m sec, 4m sec
     and 2m sec enters scheduler in order PI, P2, P3, and P4. Calculate waiting time,
     average waiting time, turnaround time and average turnaround time using FCFS
     scheduling method. Assume all process arrive at '0' m sec.               (10)

VI.  Explain the Deadlock detection algorithm for single and multiple instance type.(10)

VII. Differentiate in detail between Android, IOS and window operating system.    (10)

x-x-x