CODE NO:- Z-221
FACULTY OF ENGINEERING & TECHNOLOGY
T.E (CSE/IT) - Year Examination June – 2015
Operating System
(Revised)

[Time: Three *Hours*]   [Max. Marks: 80]

"Please check whether you have got the right question paper."

  i) Question No. 1 and Question No 6 are compulsory
  ii) Attempt <u>any two</u> questions from Q. No. 2 to Q. No. 5 and Q. No. 7 to Q. No. 10 of each section
  iii) Figures to the right indicate full marks

SECTION A

Q.1   Attempt <u>any five</u> questions from following: 10
       a) What is degree of multiprogramming
       b) Define mutual exclusion
       c) State dining philosopher problem
       d) List any 4 functions of O.S
       e) State two advantages and disadvantages of implementing threads at user space
       f) Between FCFS and R.R which one indicates more context switch? Justify your answer?
       g) What are the main components of file system layout?
       h) Define MBR?

Q.2 a) Explain the steps in making the system call read (fd, buffer, n byte)   10
     b) Explain role of operating system as resource manager   05

Q.3 a) Explain peterson's solution for achieving mutual exclusion   07
     b) Differentiate between windows and UNIX file system   08

Q.4 a) Explain process states and PCB   07
     b) Consider a set of process whose arrival time, CPU time needed and priority are given below   08

Process	Arrival time (ms)	CPU time (ms)	Priority
P_1	0	10	5
P_2	0	5	2
P_3	2	3	1
P_4	5	20	4
P_5	10	2	3

    (smaller the number higher priority) calculate average waiting time and average turnaround time for
(1)SJF (2) priority use (preemptive policy)

Q.5 a) Explain file allocation methods   08
     b) What are the CPU scheduling criteria's   07

SECTION B

Q.6   Attempt <u>any five</u> question   10
      a) What are the two disadvantages of fixed sized memory partition
      b) What are the necessary condition for deadlock occurrence?
      c) What is I/O controller? How it different from I/O devices?
      d)   What are the main goals of I/O S/W?
      e) What are problem with linked lest memory management?
      f) Which are the three ways to maintain the time of day by clock?
      g) Define page fault
      h) How is the structure of inverted page table?

Q.7 a) Discuss memory management with buddy system   07
    b) Explain simple paging method: how address translation occurs?   08

Q.8 a) Briefly explain any 4 function of the device independent I/O software   08
    b) Write a short note on security features of windows 7   07

Q.9 a) At any instant of time, say current state has 3 process A, B, C. total 10 resources are there. Figure shows   08
    current allocation state

Process	Has	Max
A	3	9
B	2	4
C	2	7

Free resource 3 are

    is there exist a safe sequence of allocations that allows process to complete?
    b) Write a short note on demand paging   07

Q.10 a) How to attack. No preemption and hold & wait condition for preventing deadlock   08
    b) Explain FIFO and LRU page replacement algorithm   07