Operating System
MAY 2019

Total Marks: 80
Total time: 3 hours

INSTRUCTIONS
(1) Question 1 is compulsory.
(2) Attempt any three from the remaining questions.
(3) Draw neat diagrams wherever necessary.

Q1 a) Mention different types of Operating systems and list their salient features. [10]
  b) With the help of examples explain Test and Set condition in Microprocessor systems. [10]
  c) What is a superblock? Elaborate on its structure and role in Operating system. [10]
  d) What are the characteristics of Real time Operating Systems? [10]

Q2 a) With the help of a neat diagram discuss process states and state transitions [10]
    with respect to Unix O.S.
  b) Bring out the design issues of Multiprocessor Operating systems. [10]

Q 3 a) Give the structure of a buffer header. Discuss any scenario that the kernel may follow [10]
    to allocate a buffer for a disk block.
  b) What is the relevance of an inode in Unix? What are direct and indirect blocks in an inode? [10]

Q 4 a) Explain in brief Gang based scheduling and affinity based scheduling algorithms for [10]
    multiprocessor systems.
  b) Discuss in detail transparency issues of distributed operating systems. [10]

Q 5 a) Consider 3 periodic processes scheduled on .a preemptive uniprocessor. [10]

Process	Execution Table	Period
1	1	8
2	2	5
3	4	10

The units of time may be considered to be schedulable time slices. The deadlines are that each
periodic process must complete within its period. Depict the scheduling of the processes with the
help of a timing diagram. Calculate the Utilization and state whether the system is schedulable
with. EDF.
  b) Compare and contrast [10]
    i) EDF and RMA scheduling ii) Test and Set and Compare-and-Swap instructions.

Q 6 Write short note on (Any Two) [20]

    a) Architecture of Unix OS
    b) Android OS

c) Android OS
d) Cloud OS.