First Semester M.Tech. Degree Examination, Dec.2015/Jan.2016

Advances in Operating Systems

Time: 3 hrs.

Max. Marks:100

Note: *Answer any FIVE full questions.*

1 a. What are the three objectives of an operating system design? Briefly explain the typically provided services of an operating system. **(10 Marks)**
  b. Draw the General structure of operating system control Tables and explain each table. **(10 Marks**

2 a. Explain the UNIX – SVR4 process states with a neat diagram. **(10 Marks)**
  b. List and explain five storage management responsibilities of a typical OS. **(10 Marks)**

3 a. Explain the key design issues for an SMP operating system. **(10 Marks)**
  b. What are the two sorts of policies of Resident set management? Explain it in relation with replacement scope. **(10 Marks)**

4 a. Explain the benefits of a microkernel organization. **(07 Marks)**
  b. Explain the advantages of segmentation to the programmer over a non segmentation address space. **(08 Marks)**
  c. What are the requirements for supporting the mutual exclusion? **(05 Marks)**

5 a. Explain the five general areas of requirement for a real – time operating system. **(10 Marks)**
  b. Explain in detail the Linux real – Time scheduling classes, along with draw backs. **(10 Marks)**

6 a. Define the two types of Distributed dead lock. **(04 Marks)**
  b. Discuss some of the key characteristics of an embedded operating system. **(08 Marks)**
  c. Explain the interfaces to a client, provided by the Tiny OS shared resource. **(08 Marks)**

7 a. Explain the characteristics exhibited by botnet. **(10 Marks)**
  b. Explain the windows NT Trap Handles with a block diagram. **(10 Marks)**

8 a. Explain the different mechanisms by which a uses process can perform IPC using the Kernel. **(08 Marks)**
  b. Write a note on operation of an Input/Output manager. **(04 Marks)**
  c. With a neat diagram, explain the Task control flow in the Kernel. **(08 Marks)**

* * * * *