USN ☐☐☐☐☐☐☐☐☐☐ **13MCA351**

Third Semester MCA Degree Examination, June/July 2018
Unix System Programming

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions.*

1   a.   What are the major differences between ANSI 'C' and K & R 'C'? Explain.   **(10 Marks)**
    b.   Explain the common characteristics of API and describe the error status codes.   **(10 Marks)**

2   a.   Explain the different file types available in unix or posix systems.   **(10 Marks)**
    b.   Describe the unix kernel support for files with neat diagram.   **(10 Marks)**

3   a.   Explain the following API's with its prototypes:
         (i) creat   (ii) fcntl   (iii) lseek   (iv) lstat   (v) utime   **(10 Marks)**
    b.   Explain file and record locking with Fcntl API.   **(10 Marks)**

4   a.   Explain getrlimit and setrlimit functions with prototype. Mention the three rules to change the resource limits.   **(10 Marks)**
    b.   Describe the unix kernel support for process with neat diagram.   **(10 Marks)**

5   a.   What is race condition, why it occurs, explain with program.   **(10 Marks)**
    b.   What is orphaned process group? Write a program, how the process becomes orphan or creating an orphaned process group.   **(10 Marks)**

6   a.   What is a signal? How signals are delivered to a process and explain kill and alarm functions.   **(10 Marks)**
    b.   What are daemon processes? Explain the characteristics along with coding rule.   **(10 Marks)**

7   a.   What are pipes? Write the limitations of pipes and its prototypes.   **(10 Marks)**
    b.   What are message queues and semaphores? Explain.   **(10 Marks)**

8   a.   What is socket? Discuss how to create and destroy a socket.   **(10 Marks)**
    b.   Write short notes on:
         i)   Terminal logins
         ii)   Out-of-band data.   **(10 Marks)**

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