**Karunya University**

**(Karunya Institute of Technology and Sciences)**

(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

**Supplementary Examinations – June 2016**

**Subject Title: UNIX ARCHITECTURE Time : 3 hours**

**Subject Code: 14CS2050 Maximum Marks: 100**

**Answer ALL questions (5 x 20 = 100 Marks)**

1. a. With neat diagram discuss the UNIX system kernel architecture. (15)

b. Write a shell script to perform basic arithmetic operation using switch statement. (5)

**(OR)**

2. a. Briefly explain any three buffer cache scenarios adopted by Unix kernel. (10)

b. List the advantage and disadvantage of buffer cache. (10)

3. Write the algorithm for the conversion of a path name to an inode with relevant example.

**(OR)**

4. a. Write short notes on different types of pipes. (5)

b. Discuss how reading and writing is performed in unnamed pipes with suitable algorithm. (15)

5. a. Draw the process state transition diagram and explain the lifetime of process. (10)

b. Write a C program to create one child process ‘C’ from a process ‘A’. (10)

**(OR)**

6. What are the signals? Write an algorithm to handle signals after recognizing their existence and explain it.

7. Explain swapping in memory management with the necessary algorithms and diagrams.

**(OR)**

8. a. Explain in detail about process scheduling. (10)

b. Suppose there are three processes A, B and C (process A is in group1 and processes B and C are in group2). If the base level priority is 30 and the clock interrupts the process 60 times/sec, sketch the process schedule using fair share scheduling algorithm considering the time slice as 1 second. (10)

**Compulsory:**

9. a. Illustrate the socket communication between two processes. (10)

b. How are messages used for inter process communications? (10)