Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

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

**End Semester Examination – Nov/Dec – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **14CS2050** | **Duration :** | **3hrs** |
| **Sub. Name :** | **UNIX ARCHITECTURE** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | Marks |
| 1. | a. | Explain the various subsystems of system kernel with block diagram. | CO1 | 15 |
| b. | Write a shell script to perform basic arithmetic operation using switch case statement. | CO1 | 5 |
| (OR) | | | | |
| 2. | a. | Explain the various scenarios for retrieval of a buffer with its algorithm and neat diagram. | CO1 | 15 |
| b. | List the advantage and disadvantage of buffer cache. | CO1 | 5 |
| 3. | a. | Write the algorithm for the conversion of a path name to an inode with relevant example. |  | 10 |
|  | b. | Write short notes on different types of pipes and discuss how reading and writing is performed in unnamed pipes with suitable algorithm. | CO1 | 10 |
| (OR) | | | | |
| 4. |  | Explain the system calls required for accessing an existing file with required syntax and examples. | CO2 | 20 |
| 5. | a. | Draw the process state transition diagram and explain the lifetime of process. | CO2 | 15 |
|  | b. | What are interrupts? Write the steps to handle them. | CO2 | 5 |
| (OR) | | | | |
| 6. | a. | Illustrate how the kernel executes to determine if a process received a signal and handle it after recognizing its existence. | CO2 | 20 |
| 7. | a. | Explain swapping in memory management with the necessary algorithm and diagrams. | C02 | 20 |
| (OR) | | | | |
| 8. | a. | Elucidate the process scheduling algorithm with necessary sketches. | CO3 | 10 |
|  | b. | Discuss the four system calls related to Time and explain the working of clock interrupt handler. | CO2 | 10 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Write in detail the inter process communication using sockets and its various associated system calls with necessary syntax.Write an example program to illustrate the communication between the client and server. | CO3 | 15 |
|  | b. | How is process tracing useful for debugging? | CO3 | 5 |

ALL THE BEST