****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 – April/May– 2017**

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| **Sub. Code:** | **14CS3080** | **Duration :** | **3hrs** |
| **Sub. Name:** | **EMBEDDED LINUX** | **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. | Find the Turnaround Time and Weighed Turnaround Time and their Average Value for the following process using Round Robin (RR) Preemptive Scheduling.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Process | P1 | P2 | P3 | P4 | P5 | | Arrival time | 0 | 3 | 5 | 7 | 13 | | Service time | 3 | 3 | 2 | 5 | 3 | | CO1 | 15 |
| b. | Explain the scheduling algorithm which meets the deadline. | CO1 | 5 |
| (OR) | | | | |
| 2. | a. | Find the Turnaround Time and Weighed Turnaround Time and their Average Value for the following process using First come first served (FCFS)Non Preemptive Scheduling.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Process | P1 | P2 | P3 | P4 | P5 | | Arrival time | 0 | 1 | 3 | 6 | 11 | | Service time | 3 | 2 | 5 | 3 | 3 | | CO1 | 12 |
| b. | In some situations, a change in the state of one process may cause a change in the state of another process. Describe all the Process States and State Transitions. | CO1 | 8 |
| 3. |  | How are the files stored in a single rooted and hierarchical system format in Linux  RTOS? | CO2 | 20 |
| (OR) | | | | |
| 4. | a. | Explain the Significance of Linux Commands. | CO2 | 16 |
|  | b. | Mention the unique features that differentiates OS and RTOS. | CO2 | 4 |
| 5. | a. | Describe how the various kernel subsystems are started and narrate how Linux gives control to the user space. | CO2 | 15 |
|  | b. | Write a brief outline of Distributions of Linux. | CO2 | 5 |
| (OR) | | | | |
| 6. |  | What exactly is the job of MTD and when and how do you include flash devices under an MTD subsystem and also state the file systems on an MTD device? | CO3 | 20 |
| 7. |  | Explain the Serial Driver which is tightly coupled with the TTY Subsystem. Discuss the initialization and start up sequence. | CO3 | 20 |
| (OR) | | | | |
| 8. | a. | Predict the methods used for handling the Interrupt Management in Embedded Linux. | CO3 | 15 |
|  | b. | Discuss a generic application porting roadmap from anRTOS to embedded Linux. | CO3 | 5 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Draw and explain the Kernel Architecture in Linux. | CO3 | 15 |
|  | b. | Differentiate the Operating System and Real Time Operating System. | CO3 | 5 |