



## P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

**Seventh Semester, B.E. - Electronics and Communication Engineering  
Semester End Examination; Dec. - 2015**

**Linux and Real Time Embedded System Programming**

*Time: 3 hrs*

*Max. Marks: 100*

*Note: Answer any FIVE full questions, selecting at least TWO full questions from each part.*

### PART - A

- |   |    |   |   |
|---|----|---|---|
| 1 | a. | Explain the root file system in Linux.                                    | 8 |
|   | b. | Explain the Linux boot process and indicate how it can be controlled.     | 7 |
|   | c. | List and explain the different methods of debugging.                      | 5 |
| 2 | a. | List the different control signals in asynchronous serial communications. | 6 |
|   | b. | Explain how parallel-port can be used to control PP device.               | 8 |
|   | c. | Explain how a device driver can be developed.                             | 6 |
| 3 | a. | List and explain characteristics of USB protocols.                        | 6 |
|   | b. | What are the steps used in I/O interfacing.                               | 8 |
|   | c. | Write a note on memory interface for media engine.                        | 6 |
| 4 | a. | What is interrupt latency? How is it measured?                            | 6 |
|   | b. | Explain the systems of  | 8 |
|   |    | i) SPI and ii) IIC interfaces   | 8 |
|   | c. | How can a local timer be implemented?                                     | 6 |

### PART - B

- |   |    |   |   |
|---|----|---|---|
| 5 | a. | Explain the following scheduling algorithms :                       | 8 |
|   |    | i) Round – Robin ii) Earlier Dead Line First ( EDF)                 | 8 |
|   | b. | Explain how pipes can be used in Inter Process Communication (IPC). | 6 |
|   | c. | Explain the meaning of priority inversion.                          | 6 |
| 6 | a. | List basic file management commands.                                | 6 |
|   | b. | What are shell scripts? Explain with an example.                    | 8 |
|   | c. | Compare Semaphore and Mutex.  | 6 |
| 7 | a. | Explain how application development is done on 89C57 platform.      | 8 |
|   | b. | Explain the architecture of prayog.                                 | 8 |
|   | c. | How can an LED be interfaced to an embedded platform? Explain.      | 4 |
| 8 | a. | Explain how applications are developed using RFID.                  | 8 |
|   | b. | Explain how an RFID reader works.                                   | 7 |
|   | c. | Explain the structure of a RFID tag.                                | 5 |