



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

(An Autonomous Institution affiliated to VTU, Belgaum)

**Fifth Semester, B.E. - Information Science and Engineering**

**Semester End Examination; Dec - 2016/ Jan - 2017**

**Software Engineering**

*Time: 3 hrs*

*Max. Marks: 100*

*Note: Answer FIVE full questions, selecting ONE full question from each unit.*

## UNIT - I

- 1 a. Define Software Engineering. Briefly explain the key challenges that Software Engineering is facing. 10
- b. State and explain different professional and ethical responsibilities of Software Engineer. 10
- 2 a. Explain Bohem's spiral model with a neat diagram. Mention its merits and demerits. 10
- b. With a neat diagram, explain the sequence of activities involved in requirements engineering process. 10

## UNIT - II

- 3 a. Explain different system organization styles with their merits and demerits. 10
- b. Draw and explain the class diagram, sequence diagram and state diagram for a typical weather station. 10
- 4 a. Briefly explain the different modular decomposition styles with examples. 10
- b. Explain various user interaction styles. Mention their merits and demerits. 10

## UNIT - III

- 5 a. What are critical systems? Explain in detail the important dimensions of system dependability. 10
- b. Briefly explain fault-tolerant architectures used in critical system development. 10
- 6 a. What is software inspection? Briefly explain the software inspection process. 10
- b. What is system testing? Explain in detail the distinct phases of system testing. 10

## UNIT - IV

- 7 a. Explain the various critical factors in people management. Briefly explain the role of project managers in motivating people. 10
- b. Explain in detail the people capability maturity model. 10
- 8 a. Explain the various factors affecting software pricing and software engineering productivity. 10
- b. Explain in detail the COCOMO model. 10

## UNIT - V

- 9 a. What are legacy systems? Briefly explain legacy system assessment. 10
- b. What is software maintenance? Briefly explain about maintenance prediction. 10
- 10a. Justify why change is inevitable? Briefly explain the software evolution process. 10
- b. Briefly explain the re-engineering process. 10