

Basavarajeswari Group of Institutions  
**BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

USN 

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Course Code 

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Fourth Semester B.E. Degree Examinations, September 2024

**SOFTWARE ENGINEERING**

(Common to CSE & AIML)

Duration: 3 hrs

Max. Marks: 100

*Note:* 1. Answer any FIVE full questions, choosing ONE full question from each module.  
2. Missing data, if any, may be suitably assumed.

| <u>Q. No</u>      | <u>Question</u>   | <u>Marks</u> | <u>(RBTL:CO:PI)</u> |
|-------------------|---|--------------|---------------------|
| <b>MODULE – 1</b> |   |              |                     |
| 1.                | a. What is Software engineering? Identify and explain key challenges in Software Engineering?                         | 06           | (2 : 1 : 1.4.1)     |
|                   | b. Identify and explain the contents of ACM / IEEE code of ethics.  | 06           | (2 : 1 : 1.4.1)     |
|                   | c. Demonstrate with a figure, the Incremental model of Software development and list the problems associated with it. | 08           | (2 : 1 : 1.4.1)     |
| <b>OR</b>         |   |              |                     |
| 2.                | a. Identify and explain the essential attributes of good software.  | 06           | (2 : 1 : 1.4.1)     |
|                   | b. Discuss the User and System requirements with example.   | 06           | (2 : 1 : 1.4.1)     |
|                   | c. Discuss the following with example in detail:<br>(i) Interviewing (ii) Use-case                                    | 08           | (2 : 1 : 1.4.1)     |
| <b>MODULE – 2</b> |   |              |                     |
| 3.                | a. What is system modeling? Identify different advantages of system modelling.  | 08           | (2 : 2 : 1.4.1)     |
|                   | b. Demonstrate with a figure the context model for MHC-PMS system.  | 06           | (2 : 2 : 1.4.1)     |
|                   | c. Classify the three models of object oriented development and explain in detail.                                    | 06           | (2 : 3 : 1.4.1)     |
| <b>OR</b>         |   |              |                     |
| 4.                | a. Apply Interaction modeling for transfer data in MHC-PMS. Draw use case and sequence diagram for the same.          | 08           | (2 : 2 : 1.4.1)     |
|                   | b. Discuss the following with respect to MHC-PMS<br>(i) Classes and Associations (ii) Generalization                  | 06           | (2 : 2 : 1.4.1)     |
|                   | c. Identify and explain the various Object Oriented themes supported for Object Oriented Technology.                  | 06           | (2 : 3 : 1.4.1)     |
| <b>MODULE – 3</b> |   |              |                     |
| 5.                | a. Define Verification and Validation. Identify advantages of software inspection over testing?                       | 06           | (2 : 4 : 1.4.1)     |
|                   | b. Identify and explain the general guidelines that can be used in test case design.                                  | 06           | (2 : 4 : 1.4.1)     |
|                   | c. Explain the Test-Driven Development process activities and Identify the benefits of TDD.                           | 08           | (2 : 4 : 1.4.1)     |

**OR**

- 6. a. Explain with a block diagram, the general model of Software Testing. Discuss different types of testing. **06** (2 :4 : 1.4.1)
- b. Identify classes of Interface errors and guidelines for Interface testing. **06** (2 :4 : 1.4.1)
- c. Define Acceptance testing. Identify different phases of Acceptance testing in detail with a diagram. **08** (2 :4 : 1.4.1)

**MODULE – 4**

- 7. a. What is Software pricing? Explain different factors affecting Software pricing. **06** (2 :5 : 1.4.1)
- b. Identify the process of reviewing the software and explain each activity. **06** (2 :5 : 1.4.1)
- c. Illustrate with a figure, the Reengineering process. **08** (3 :5 : 1.4.1)

**OR**

- 8. a. Identify three stages of project planning. Illustrate with a figure, the planning process and project plans. **06** (2 :5 : 1.4.1)
- b. Identify the project scheduling process and explain each phase. **06** (2 :5 : 1.4.1)
- c. Following table shows number of activities, durations and dependencies and milestones. Construct the Gantt chart and Staff allocation chart showing the critical path for the project schedule. **08** (3 :5 : 1.4.1)

| TASKS | DURATION [DAYS] | DEPENDENCIES |
|-------|-----------------|--------------|
| T1    | 10              | -            |
| T2    | 15              | -            |
| T3    | 15              | T1 [M1]      |
| T4    | 10              | -            |
| T5    | 10              | T2, T4 [M2]  |
| T6    | 5               | T1, T2 [M3]  |
| T7    | 20              | T1 [M1]      |
| T8    | 25              | T4 [M4]      |

**MODULE – 5**

- 9. a. Identify and explain Extreme Programming practices in detail. **10** (2 :5 : 1.7.1)
- b. Demonstrate Agile process development using SCRUM method with its characteristics and advantages. **10** (2 :5 : 1.7.1)

**OR**

- 10. a. Identify and explain two ways of coping with change and changing requirements. **10** (2 :5 : 1.7.1)
- b. What do you mean by pair programming? Identify advantages of Pair programming. **10** (2 :5 : 1.7.1)

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