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Code No: 135BM**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, October - 2020****SOFTWARE ENGINEERING****(Common to CSE, IT)****Time: 2 hours****Max. Marks: 75**

Answer any five questions
All questions carry equal marks

- 1.a) What are specialized process models? Explain any one process model in detail.
b) What is CMMMI? Explain. [8+7]
- 2.a) Discuss about the software requirements document with a neat diagram.
b) Describe the process of requirements management. [8+7]
- 3.a) Distinguish between cohesion and coupling.
b) Define transaction flow. Explain transaction mapping in detail. [7+8]
- 4.a) Discuss about the CK metrics suite in detail.
b) Define black-box testing. Explain black-box testing technique with example merits and demerits. [7+8]
5. Explain the following:
a) SQA activities
b) Assessing risk impact. [7+8]
- 6.a) Explain in detail about Spiral model.
b) What are software myths? Explain in detail. [7+8]
- 7.a) Model the data processing that might take place in e-mail system. You should model the mail-sending and mail-receiving processing separately.
b) Who should be involved in a requirements review? Draw a process model showing how a requirements review can be organized. [7+8]
- 8.a) Briefly explain about the design model at component level.
b) Write interface design steps? Explain the same. [8+7]

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Code No: 135BM**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, November/December - 2018****SOFTWARE ENGINEERING****(Common to CSE, IT)****Time: 3 hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A**(25 Marks)**

- 1.a) What are the merits of incremental model? [2]
- b) List the task regions in the spiral model. [3]
- c) What is feasibility study? [2]
- d) What are the differences between functional requirements and non-functional requirements? [3]
- e) List the guidelines for data design. [2]
- f) Name the commonly used architectural styles. [3]
- g) Write a short note on black box testing. [2]
- h) How to compute the cyclomatic complexity? [3]
- i) Differentiate between reactive risk and proactive risk strategies. [2]
- j) What is software reliability and how this parameter helps in managing software quality? [3]

PART - B**(50 Marks)**

- 2.a) What is legacy software? Explain briefly its impact in software engineering.
- b) Explain the following:
 - i) Water fall model
 - ii) Spiral Model.

[5+5]**OR**

- 3.a) Give an overview of unified process model.
- b) Write detailed notes on CMMI.

[5+5]

- 4.a) Describe five desirable characteristics of a good software requirement specification document.
- b) Draw the complete DFD at least up to 2-levels for a library management system. [5+5]

OR

- 5.a) Compare ISO and SEI-CMM models.
- b) Who should be involved in a requirement review? Draw a process model showing how a requirements review might be organized. [5+5]

6.a) Define Software architecture. Explain why it may be necessary to design the system architecture before the specifications. Compare function oriented and object oriented designs.

b) What do you mean by the terms cohesion and coupling in the context of software engineering? How are these concepts useful in arriving at a good design of a system? [5+5]

OR

7. What is system modeling? Explain the process of creating models and the factors that should be considered when building models. [10]

8. Show using a small example, why it is practically impossible to exhaustively test a program? [10]

OR

9.a) Distinguish between error and failure. Which of the two is detected by testing? Justify.

b) Explain how black box testing differs from white box testing. [5+5]

10.a) What do you mean by risk management? Explain how to select the best risk reduction technique when there are many ways of reducing a risk?

b) Explain about formal technical reviews. [5+5]

OR

11. Using a schematic diagram and suitable example to show the order in which the following are estimated in the COCOMO estimate technique: Cost, Effort, Duration, and Size. [10]

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Code No: 135BM**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, May/June - 2019****SOFTWARE ENGINEERING****(Common to CSE, IT)****Time: 3 hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A**(25 Marks)**

- 1.a) Define software engineering. [2]
- b) List evolutionary process models. [3]
- c) Differentiate between user requirement and system requirement. [2]
- d) List the various types of feasibility studies. [3]
- e) What are the goals of the design process? [2]
- f) Define software architecture. [3]
- g) What is meant by smoke testing? [2]
- h) List the metrics for source code. [3]
- i) Give the different categories of risks. [2]
- j) What is meant by software review? [3]

PART - B**(50 Marks)**

2. Discuss managers myths about software development and their effect on the practitioners performance as well as on overall outcome. [10]

OR

3. What is software process? What is need of software process improvement? Discuss capability maturity models. [10]

4. "The functional requirements specification of a system should be both complete and consistent". Substantiate this statement with relevant examples. [10]

OR

- 5.a) Draw a context level model for a web-based food- ordering system such as "Swiggy".
- b) Discuss the main characteristics of data model for requirement engineering. [5+5]

6. How to translate the analysis model into the design model? Explain with an example scenario. [10]

OR

- 7.a) Explain how to map data flow into a software architecture?
- b) Explain the design of class based components. [5+5]

8.a) Discuss the process of debugging.

b) What is the need of beta testing?

[5+5]

OR

9.a) Explain the metrics for software quality.

b) Explain about the test strategies for connectional software.

[5+5]

10.a) Elaborate on risk projection steps.

b) Provide the format of risk information sheet.

[5+5]

OR

11. Explain the activities of software quality assurance group to assist the software team in achieving high quality. [10]

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Code No: 155DB**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, September - 2021****SOFTWARE ENGINEERING****(Common to CSE, IT)****Time: 3 Hours****Max. Marks: 75**

Answer any five questions
All questions carry equal marks

- 1.a) Explain about evaluation of software engineering methodologies.
b) What are the challenges of software engineering? [8+7]
- 2.a) Explain Software development process models.
b) Write a short note on Waterfall model. [7+8]
- 3.a) Explain the importance of software specification of requirements.
b) Write a short note on Context Model. [7+8]
4. Describe various prototyping techniques and discuss on object oriented analysis and modeling. [15]
5. Briefly explain about the following:
a) Sequence diagram
b) Use case diagram. [7+8]
6. What are the design principles of a good software design? Explain. [15]
- 7.a) What is testing? How is it different from debugging?
b) Explain various structural testing techniques with suitable examples. [7+8]
- 8.a) List and explain the various software quality factors.
b) Describe the role of software reviews in achieving good quality software. [7+8]

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Code No: 155DB**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, March - 2021****SOFTWARE ENGINEERING****(Common to CSE, IT)****Time: 3 Hours****Max. Marks: 75**

Answer any five questions
All questions carry equal marks

- 1.a) Explain Software development process models.
b) Explain about evaluation of software engineering methodologies. [7+8]
- 2.a) What is the goal of requirements analysis phase? Give reasons why the requirements analysis phase is a difficult one.
b) Identify and briefly describe four types of requirement that may be defined for a computer based system. [8+7]
3. What are the design principles of a good software design? Explain. [15]
4. What is black box testing? Is it necessary to perform this? Explain various test activities. [15]
- 5.a) Discuss briefly about Pro-active and Re-active Risk strategies in detail.
b) Explain about Software risks in detail. [8+7]
- 6.a) How system modeling is achieved using UML? Explain with a suitable example.
b) How we perform design evaluation? Explain it with suitable example. [8+7]
- 7.a) What is a change? How it can be incorporated in the software.
b) What is the difference between verification and validation? Explain with an example. [8+7]
- 8.a) What is software maintenance? How to control maintenance cost.
b) Define software. List and explain about the elements of a software process. [8+7]

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Code No: 155DB**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, January/February - 2023****SOFTWARE ENGINEERING****(Common to CSE, IT, ECM, ITE)****Time: 3 Hours****Max. Marks: 75****Note:** i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A**(25 Marks)**

- 1.a) What are software engineering layers? [2]
- b) Write about process assessment. [3]
- c) Define procedural interfaces. [2]
- d) Discuss about requirements validation in brief. [3]
- e) What is UML? Write the principles of modelling. [2]
- f) Give an example of a class diagram. [3]
- g) Define white-box testing and black –box testing. [2]
- h) How debugging differs from testing? [3]
- i) What is software risk? [2]
- j) What are the metrics for software quality? [3]

PART – B**(50 Marks)**

- 2.a) Define software. Explain in detail about software myths.
 - b) Discuss in detail about water fall process model. [5+5]
- OR**
- 3.a) What is a process model? Explain about prototyping model in detail.
 - b) What is CMMI? Explain about CMMI levels. [5+5]
- 4.a) Explain about requirements management phases of requirement engineering process.
 - b) Explain about state machine models with examples. [5+5]
- OR**
- 5.a) Based on your experience with a bank ATM, draw a data-flow diagram modelling the data processing involved when a customer withdraws cash from the machine.
 - b) Discuss about architectural design in brief. [5+5]
- 6.a) What are building blocks of the UML? Explain.
 - b) Explain about refining the architecture into components. [5+5]
- OR**
- 7.a) Distinguish between sequence and collaboration diagrams.
 - b) Briefly explain about the design model. [5+5]

- 8.a) What is integration testing? Explain in detail.
b) Discuss about metrics for testing in detail. [5+5]

OR

- 9.a) Distinguish between verification and validation. Explain about organizing for software testing.
b) Explain about the metrics for design model. [5+5]

10. Explain the following:
a) Software quality concepts
b) Risk identification. [5+5]

OR

11. Explain the following:
a) Statistical SQA
b) Developing a risk table. [5+5]

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Code No: 155DB**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, February - 2022****SOFTWARE ENGINEERING****(Common to CSE, IT, ITE)****Time: 3 hours****Max. Marks: 75****Answer any five questions
All questions carry equal marks**

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- 1.a) Describe the various software myths.
b) Explain the overview of unified process model. [7+8]
- 2.a) Explain in detail about evolutionary process model.
b) What are the advantages of layered technology? [8+7]
- 3.a) Describe the structure of Software Requirements document.
b) Briefly explain about Context models. [7+8]
- 4.a) Explain the differences between functional requirements and non-functional requirements.
b) Briefly explain about structured methods. [7+8]
- 5.a) Briefly explain about interface analysis and interface design steps.
b) Write a short note on class diagrams. [8+7]
- 6.a) Write a short note on component diagrams.
b) Explain the process of creating models and the factors that should be considered when building models. [7+8]
- 7.a) What are the metrics for Analysis Model? Explain.
b) Write a short note on system testing. [8+7]
- 8.a) Describe about formal technical reviews.
b) Explain the methods for Risk Identification. [7+8]

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Code No: 155DB**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, August - 2022****SOFTWARE ENGINEERING****(Common to CSE, IT, ITE)****Time: 3 Hours****Max. Marks: 75**

Answer any five questions
All questions carry equal marks

- 1.a) Explain CMMI model with a neat sketch.
b) Give an overview of unified process model. [8+7]
- 2.a) Discuss in brief about the waterfall model.
b) Explain process patterns and process assessment. [8+7]
- 3.a) Describe five desirable characteristics of a good software requirement specification document.
b) Give an overview of various system models. [8+7]
- 4.a) Discuss about principal requirements engineering activities and their relationships.
b) Explain how a software requirements document is structured. [8+7]
- 5.a) Write a short notes on data design.
b) Describe architectural styles and patterns. [8+7]
6. Explain the following diagrams:
a) Class diagrams and sequence diagrams
b) Collaboration diagrams and use case diagrams. [8+7]
- 7.a) Describe strategic approach to software testing.
b) Explain Software quality and metrics for analysis model. [8+7]
8. Illustrate various Metrics for Process and Products. [15]

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