MCA-114

ROLL NO 2 0 2 2 1 0 4 0 2 7

MCA

(SEM I) ODD SEMESTER
MINOR TEST (EXAMINATION) 2022-2023

SOFTWARE ENGINEERING

Time: 2 Hours **Max. Marks: 30**

Note: Answer all questions

Q.1 Attempt any Three parts of the following.Q.1 (a) is compulsory.

(a) Define Software architecture. Explain why it may be necessary to design the system architecture before the specifications. 4

(b) What is legacy software? Explain briefly its impact in software engineering. 3

(c) Describe five desirable characteristics of a good software requirement specification document. 3

(d) Compare ISO and SEI-CMM models. 3

Q.2 Attempt any Three parts of the following.Q.2 (a) is compulsory.

(a) What is the goal of requirements analysis phase? Give reasons why the requirements analysis phase is a difficult one. 4

(b) Differentiate between functional and non-functional requirements with suitable examples. 3

(c) Explain software development life cycle. Discuss various activities during SDLC. 3

(d) Explain the Spiral Model in Detail. 3

Q.3 Attempt any Three parts of the following.Q.3 (a) is compulsory.

(a) 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? 4

(b) Draw the complete DFD at least up to 2-levels for a library management system. 3

(c) Explain the process of mapping data flow into software architecture. 3

(d) Explain CMMI model with a neat sketch 3

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MINOR TEST (EXAMINATION) 2021-2022

SOFTWARE ENGINEERING

Time: 2 Hours | Max. Marks: 30

Note: Answer all questions

Q.1 Attempt any Three parts of the following.Q.1 (a) is compulsory.

(a) Define software engineering. What are the objectives of software engineering? Explain briefly. 4

(b) Explain Spiral Model? Write at least two Disadvantages of Spiral Model? 3

(c) List the various types of feasibility studies.. 3

(d) Explain in brief about term Coupling? 3

Q.2 Attempt any Three parts of the following.Q.2 (a) is compulsory.

(a) Explain the following SDLC model in detail. (i) Waterfall Model (ii) Prototype model 4

(b) What do you mean by functional and non-functional requirements? Give at least one example of each type of requirements? 3

(c) Explain in brief about the term cohesion.. 3

(d) Explain DFD and structure chart. 3

Q.3 Attempt any Three parts of the following.Q.3 (a) is compulsory.

(a) Write a detail note on Requirement gathering? 4

(b) Explain Requirement analysis and specification? 3

(c) Explain in brief about the term function-oriented software design. 3

(d) Write the basic issues of Software Design? 3

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MCA

(SEM - I) ODD SEMESTER

MAJOR EXAMINATION 2022-23

Subject: Software Engineering

Time: 3Hrs. **Max. Marks: 50**

Note: Attempt all questions. Each question carries equal marks.

Q 1. Attempt any five parts of the following. **5X2 = 10**

(a) Illustrate the evolution and impact of Software Engineering on Software project development.

(b) What is Feasibility Study? Describe the various types of feasibility with a suitable example.

(c) Explain the spiral model of software development in brief. What are the limitations of such a model?

(d) Discuss the prototyping model. What is the effect of designing a prototype on the overall cost of the project?

(e) A department of computer science has usual resources and usual users for these resources. A software is to be developed so that resources are assigned without conflict. Draw a DFD specifying the above system. Entities and attributes can be assumed.

(f) Define Module Coupling and explain various types of Coupling.

(g) What is the significance of object-oriented software development? Explain the various characteristics of object-oriented design.

Q 2. Attempt any two parts of the following. **2x5 = 10**

(a) What are the various objectives of software testing? Describe the various levels of testing in detail.

(b) What is test case design? Discuss its objectives and indicate the various steps involved in test case design.

(c) Illustrate the Regression testing, Acceptance testing and Mutation testing with a suitable example.

Q 3. Attempt any two parts of the following. **2x5 = 10**

(a) Describe the White box and Black box testing in detail with a suitable example.

(b) Differentiate the Verification and Validation. Describe the Alpha testing and Beta testing with a suitable example.

(c) Write short notes on Software Reliability Metrics.

Q 4. Attempt any two parts of the following. **2x5 = 10**

(a) What is significance of Software Maintenance in software project management? Describe the various types of software maintenance in detail. Which category of software maintenance consumes maximum effort and why?

(b) What is reverse engineering? Discuss the various levels of reverse engineering in detail.

(c) What is Software Re-Engineering? Differentiate between software re-engineering and new development.

Q 5. Attempt any two parts of the following. **2x5 = 10**

(a) A project size of 200 KLOC is to be developed. Software development team has average experience on similar type of projects. The project schedule is not very tight. Calculate the effort, development time, average staff size, and productivity of the project.

(b) What are configuration management activities? Draw the Performa of change request form and list its various steps.

(c) What is Software Risk? Describe the various risk management activities in detail.