



Course/Branch : MCA Semester : III
Subject Name : Software Engineering Max. Marks : 100
Subject Code : KCA302 Time : 180min

CO-1 : Explain various software characteristics and analyze different software Development Models.

CO-2 : Demonstrate the contents of a SRS and apply basic software quality assurance practices to ensure that design, development meet or exceed applicable standards.

CO-3 : Compare and contrast various methods for software design.

CO-4 : Formulate testing strategy for software systems; employ techniques such as unit testing, Test driven development and functional testing.

CO-5 : Manage software development process independently as well as in teams and make use of various software management tools for development, maintenance and analysis.

Section – A# 20 Marks(Short Answer Type Questions)

Attempt ALL the questions. Each Question is of 2 marks (10 x 2 = 20 marks)

Q.No	COX	Question Description # Attempt ALL the questions. Each Question is of 2 marks
1	CO1	What are the characteristics of software? (K1)
b	CO1	List the software development life cycle steps. (K1)
c	CO2	Construct the context diagram of an ATM. (K3)
d	CO2	Define the entity relationship diagram. (K1)
e	CO3	Define modularization in software design and explain its importance. (K1)
f	CO3	Construct a flow diagram of railway reservation system. (K3)
g	CO4	What is unit testing? Why is it an essential part of software development? (K1)
h	CO4	Explain regression testing. (K2)
i	CO5	Explain the need for maintenance. (K2)
j	CO5	List the types of maintenance. (K1)

Section – B# 30 Marks (Long /Medium Answer Type Questions)

Attempt ALL the questions. Each Question is of 6 marks(5 x 6 = 30 marks)

Q2 Explain software development life cycle in detail (K2)

OR

Discuss the spiral model of software development in detail. (K6)

Q3 Explain the steps involved in the Requirements Engineering Process, including elicitation, analysis, and documentation. (K2)

OR

Build an ER diagram for railway reservation system. (K6)

Q4 Explain the concept of Software design. Discuss Top Down and Bottom Up approach of software design. (K2, K6)

OR

What is Coupling? Discuss various types of coupling. (K1, K6)

Q5 What is software testing? Elaborate different types of testing techniques. (K1, K6)

OR

Compare and contrast between black box testing and white box testing. (K4)

Q6 Discuss software maintenance. Explain different types of maintenance. (K6, K2)

OR

Describe the COCOMO model and explain how it is used to estimate project effort and cost. (K6)

Section – C# 50 Marks (Medium/Long Answer Type Questions)

Attempt ALL the questions. Each Question is of 10 marks.

Q7 Attempt any ONE question. Each question is of 10 marks

a. Discuss the Waterfall Model of SDLC with its advantages. (K6)

b. Explain various software quality attributes in detail. (K2)

Q8 Attempt any ONE question. Each question is of 10 marks.

a. What is and ER diagram? Describe the components of an ER diagram. (K1, K6)

b. Describe the IEEE standard for SRS (K6)

Q9 Attempt any ONE question. Each question is of 10 marks.

a. Explain the differences between Function-Oriented Design and Object-Oriented Design with examples. (K2)

b. Define modularization in software design and explain its importance. (K1, K2)

Q10 Attempt any ONE question. Each question is of 10 marks.

a. What is the difference between Alpha Testing and Beta Testing? (K4)

b. Explain the terms: Formal Technical Review and Walk Through. (K2)

c. Explain Unit testing and its types. (K2)

Q11 Attempt any ONE question. Each question is of 10 marks.

a. What is software re-engineering? Explain its importance in software development. (K1, K2)

b. Explain the process of Software Configuration Management. (K4)