ARYA COLLEGE OF ENGINEERING

GUESS PAPER

(B.Tech.IIYearIII Semester2025-26)

3CSE4-07: Software Engineering

Unit 1

Short Answers: 2 Marks each

Q1. Explain WINWIN spiral model?

Q. 2 advantages of spiral model.

Q. 3 validation and verifications?

Q.4 Explain SDLC phases?

Q.5 What is Software Engineering?

Q6. What is meant by functional requirements?

Q7. What do you mean by non-functional requirements?

Q8. What is FRS?

Q9. What do you understand by RAD model?

Q10. What is Verification and Validation?

Descriptive Answers: (5 to 10 Marks)

Q1. Describe the major phases of the Software Development Life Cycle (SDLC).

Q2. Explain V Model and differentiate between Verification and Validation.

Q3. Explain Spiral Model with its phases and enlist advantages and disadvantages.

Q4. Describe the Iterative Waterfall and Incremental model with proper diagram.

Q5. Describe Waterfall Model along with its phases.

Q6. Explain RAD Model and justify how it is helpful in Software Development.

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Unit 2

Short Answers: 2 Marks each

Q1. What is LOC (Lines of Code) estimation?

Q2. What is software project management?

Q3. Write any two advantages of FP estimation.

Q4. Define project scheduling.

Q. 5 Explain how COCOMO can be used for cost estimations?

Q. 6 explain project planning and phases?

Q. 7 Explain decomposition techniques?

Q. 8 Explain role of project manager?

Q. 9 Explain reusable software resources?

Q. 10 Explain risk analysis and risk assessment?

Descriptive Answers: (5 to 10 Marks)

Q. 1 What is risk? Explain risk analysis in software project management.

Q. 2 Explain software project management and Project Scheduling concept.

Q3. Suppose that a project was estimated to be 400 KLOC. Calculate effort and time for each of three modes of development.

Table given as:

Mode	a	b	c	D
Organic	2.4	1.05	2.5	0.38
Semi Detached	3.0	1.12	2.5	0.35
Embedded	3.6	1.20	2.5	0.32

Q4. Compute the function point productivity, documentation, cost per function for the following data:

Q5. Explain COCOMO Model and COCOMO software project types and COCOMO types.

Q6. Explain the Software Project Planning process in detail.

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Unit 3

Short Answers: 2 Marks each

Q. 1 Explain data dictionary

Q. 2 explain CFD with examples

Q. 3 Explain SRS format?

Q. 4 Use cases diagram in SRS

Q. 5 Characteristics of the SRS

Q. 6 Explain Finite state machine

Q7. What is a state in FSM?

Q8. What is a control flow diagram?

Q9. What is a decision table and decision tree?

Q10. Define structured analysis.

Descriptive Answers: (5 to 10 Marks)

Q. 1 What are elements of requirement analysis model? Explain in detail

Q. 2 Explain component and contains of SRS?

Q. 3 Explain requirement fundamental and characteristics of requirement of SRS ?

Q. 4 Explain DFD and Draw a data flow graph or DFD of the system L-0and L-1 of student admission in your university?

Q. 5 describe structured analysis model with diagram and explain CFG?

Q. 6 Draw entity relationship diagram that describe data objects, relationship and types of attributes?

Q.7 Explain Data Dictionary With its format and symbols?

Unit 4

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Short Answers: 2 Marks each

Q. 1 Explain modularity?

Q. 2 Explain information hiding an encapsulation?

Q. 3 Explain type of software design

Q. 4 Explain functional independence

Q. 5 Explain stamp coupling

Q. 6 Explain temporal cohesion

Q7. What is procedural and architectural design?

Q8. Define design documentation.

Q9. What is interface design?

Q10. What is structure chart?

Descriptive Answers: (5 to 10 Marks)

Q. 1 What is the software design principles and concepts?

Q2 Describes effective modular design in brief

Q3. Explain cohesion and different types of cohesion with examples.

Q4. Explain coupling and different types of coupling with examples.

Q5. Describe the role and components of design documentation.

Q6. Explain architectural design. Describe different types of software architectures.

Q.7 Write down difference between CLI and GUI? What are the steps of implementing GUI?

Unit 5

Short Answers: 2 Marks each

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3CSE4-07: Software Engineering

Q. 1 Explain class diagram with definition

Q. 2 Explain state chart diagram

Q. 3 Explain sequential diagram in UML

Q. 4 Explain deployment diagram

Q. 5 Explain physical component diagram of UML

Q. 6 Explain use case diagram of UML

Q7. Define activity diagram.

Q8. What is a state machine diagram?

Q9. What is OO analysis?

Q10. What is Data Modeling?

Descriptive Answers: (5 to 10 Marks)

Q1. Explain Object-Oriented Design (OOD) and its key principles.

Q. 2 difference between OOA and OOD?

Q3. What is UML? Explain the role of UML diagrams in OOD.

Q4. Explain Use Case Diagram and Class Diagram with proper examples?

Q5. Describe Activity Diagram and Sequence Diagram with example.

Q6. Discuss the concept of classes and objects in OOD with suitable examples. .

Q7. Explain State Chart Diagram and Component Diagram.

Q. 8 what is the object oriented design methods? List them

Q. 9 explain the difference between structural and object oriented analysis.

Q. 10 write shorts notes on object relationship model.