

2023

Time - 3 hours

Full Marks - 60

*Answer all groups as per instructions.
Figures in the right hand margin indicate marks.*

GROUP - A

1. Answer all questions and fill in the blanks as required. [1 × 8]
- (a) In the evolution of software development, it transformed into an engineering discipline, leading to the emergence of _____.
 - (b) The _____ model is known for its sequential s/w development.
 - (c) What does COCOMO stand for ?
 - (d) The _____ model is characterised by its iterative and flexible approach.
 - (e) _____ is a widely-used technique for software project size estimation.
 - (f) What is the goal of requirements analysis and specification phase ?
 - (g) _____ refers to the degree to which elements within a module are functionally related.

[2]

- (h) _____ testing is focused on the internal logic and structure of the code.

GROUP – B

2. Answer any eight of the following questions within two to three sentences each. [1½ × 8
- (a) What is the primary goal of software project management ?
 - (b) Name one disadvantage of the waterfall model in software development.
 - (c) What is the main advantage of Agile development models ?
 - (d) What is COCOMO and how is it used in software development ?
 - (e) Briefly explain what is meant by requirements gathering in software development.
 - (f) What is the significance of cohesion in software design ?
 - (g) What is the purpose of unit testing in software development ?
 - (h) What are the main differences between black box testing and white box testing ?
 - (i) Explain the concept of software maintenance and why it is important.
 - (j) When is regression testing carried out ?

GROUP – C

3. Answer any eight of the following questions within 75 words each. [2 × 8
- (a) Explain the concept of software engineering and why it emerged as a distinct discipline in the field of computing ?
 - (b) Describe the key phases of the waterfall model in software development.
 - (c) What is structured programming ?
 - (d) State the characteristics of a good SRS documents.
 - (e) Compare and contrast between cohesion and coupling in software engineering.
 - (f) How is verification different from validation ?
 - (g) Differentiate between black box testing and white box testing in software testing.
 - (h) What is a CFG ?
 - (i) Why software maintenance is considered a critical phase in the software development ?
 - (j) Briefly describe the key characteristics of the Agile development model.

[4]

GROUP – D

Answer all questions within 500 words each.

4. Describe the evolution of software development from its early stage to becoming a recognised engineering discipline. [6]

OR

Compare the waterfall model and agile development model. Discuss their advantages and disadvantages.

5. Explain the responsibilities of a software project manager and complexity associate with s/w project management. How does effective planning help ? [6]

OR

Describe the COCOMO for software project estimation. Discuss its three modes to use them.

6. Give the structure of an SRS document. Explain some of the problems that an SRS document may suffer from. [6]

OR

Discuss the concept of cohesion and coupling software design. Provide examples of module with different levels of cohesion and coupling.

7. How is black box testing different from white box testing. [6]

OR

Describe the importance of code review in software development. Explain the key benefits of conducting code reviews.