

**SOFTWARE ENGINEERING & PROJECT MANAGEMENT
(INFO 3103)**

Time Allotted : 3 hrs

Full Marks : 70

Figures out of the right margin indicate full marks.

***Candidates are required to answer Group A and
any 5 (five) from Group B to E, taking at least one from each group.***

Candidates are required to give answer in their own words as far as practicable.

**Group – A
(Multiple Choice Type Questions)**

1. Choose the correct alternative for the following: **10 × 1 = 10**
- (i) Which of the following is not an information domain required for determining function point in FPA?
 - (a) Number of user Input
 - (b) Number of user Inquiries
 - (c) Number of external Interfaces
 - (d) Number of errors.
 - (ii) Which of the following is a project scheduling method that can be applied to software development?
 - (a) PERT
 - (b) CPM
 - (c) CMM
 - (d) Both PERT and CPM
 - (iii) Function Point describes
 - (a) The SRS document
 - (b) The test plans
 - (c) The functional decomposition
 - (d) The size of a software product directly from its specification.
 - (iv) Which of the following is black box testing
 - (a) Basic path testing
 - (b) Boundary value analysis
 - (c) Code path analysis
 - (d) None of these.
 - (v) MTBF is measured in terms of
 - (a) Day
 - (b) Year
 - (c) Hours
 - (d) Minutes.
 - (vi) Which of the following UML diagrams has a static view?
 - (a) Collaboration
 - (b) Use case
 - (c) State chart
 - (d) Activity.

- (vii) The chain of activities that determines the duration of the project
(a) Critical Path (b) Duration Path
(c) Linear Independent Path (d) None of These.
- (viii) Swim lane is defined in
(a) State Chart Diagram (b) Activity Diagram
(c) Use Case Diagram (d) Sequence Diagram.
- (ix) Interaction Diagram is a combined term for
(a) Sequence Diagram + Collaboration Diagram
(b) Activity Diagram + State Chart Diagram
(c) Deployment Diagram + Collaboration Diagram
(d) None of the mentioned
- (x) Which of the following is non-functional testing?
(a) Black box testing (b) Performance testing
(c) Unit testing (d) None of these.

Group – B

2. (a) List out all the phases of SDLC. Write down the disadvantages of waterfall model. What is data dictionary? Write down the importance of using it in the context of good software design
- (b) Identify at least two activities carried out during each phase of a spiral model. Differentiate between Decision Table and Decision Tree with suitable example.
(2 + 2 + 2) + (2 + 4) = 12
3. Write short notes on the following topic(**Any Two**): **(2 × 6) = 12**
(i) DFD
(ii) SRS
(iii) Structure Chart
(iv) Feasibility Study.

Group – C

4. (a) Write short notes on Black Box testing. Write down the important coding guidelines.
- (b) Differentiate between Black Box Testing and White Box Testing.
(5 + 4) + 3 = 12
5. (a) What do you understand by the term integration testing? What are the different types of integration testing methods that can be applied to a large software product?

- (b) What is cyclomatic complexity? Draw the Control Flow Graph for a c program that finds the maximum and minimum among three given numbers. Hence find the cyclomatic complexity.

$$(1 + 5) + (1 + 3 + 2) = 12$$

Group – D

6. (a) Why COCOMO is called a Heuristic model? Explain the different types of project used in COCOMO model. Differentiate between Basic COCOMO and Intermediate COCOMO model.

- (b) List out the major shortcomings of function point metric in order to use it as a software project size metric.

$$(1 + 3 + 4) + 4 = 12$$

7. (a) Explain the different types of Metric used in software project management. Write the different types of Risk associated with the software project management.

- (b) Differentiate between Gantt Chart and PERT Chart with a proper diagram.

$$(6 + 2) + 4 = 12$$

Group – E

8. (a) Write the difference between include and extend relationship used in UML diagram (with example). How do we represent private and public data member in class diagrams?

- (b) How a UML Use Case is Diagram different from a traditional flow chart? Write the different components required to draw class diagram.

$$(4 + 2) + (4 + 2) = 12$$

9. Write short notes on the following topic(**Any Two**):

$$(2 \times 6) = 12$$

- (i) Class Diagram
- (ii) Activity Diagram
- (iii) Sequence Diagram.

Department & Section	Submission Link
IT	https://classroom.google.com/c/MjgyNTkzOTUxNDk4/a/MjgyNTk0MDc1MDQy/details