

Software Engineering and Testing (315332)

MSBTE Diploma · K-Scheme · Model Question Paper — Set C

Time: 3 Hours**Max. Marks: 70****Instructions:**

1. All questions are compulsory.
2. Answer each next main question on a new page.
3. Illustrate your answers with neat sketches wherever necessary.
4. Figures to the right indicate full marks.
5. Assume suitable data, if necessary.
6. Mobile phone, pager and any other electronic communication devices are not permissible in the examination hall.

Q.1 Attempt any FIVE of the following:**10**

- a) Define software. State any two characteristics of software.
- b) Give any four reasons why an SRS document is needed.
- c) State the classification of software risks.
- d) Define bug and failure.
- e) Define agile process. Name any two agile process models.
- f) Define test case. List any four fields of a test case template.
- g) Define acceptance testing. State its two types.

Q.2 Attempt any THREE of the following:**12**

- a) With a neat diagram, describe each layer of software engineering as a layered technology.
- b) Explain the Scrum process with a neat diagram.
- c) Explain the spiral model with a neat labelled diagram.
- d) Explain the function point metric. Compute FP for: EI = 10 (simple), EO = 8 (average), EQ = 6 (simple), ILF = 3 (average), EIF = 2 (complex), with $\Sigma F_i = 38$.

Q.3 Attempt any THREE of the following:**12**

- a) Draw a use case diagram for an Online Movie Ticket Booking System with minimum two actors and four use cases.
- b) Draw level 0 and level 1 DFD for a Student Result Management System.
- c) Explain top-down and bottom-up integration testing with a suitable diagram.
- d) For the activities given below, draw the network, find the critical path and the project duration (CPM).

Activity	A	B	C	D	E	F	G
Event (i-j)	1-2	1-3	2-4	3-4	3-5	4-6	5-6
Duration (days)	3	4	5	2	6	4	3

Q.4 Attempt any THREE of the following:

12

- Describe any four principles of good planning.
- Differentiate between quality assurance and quality control. (Any four points)
- Explain the classification (types) of defects.
- Explain when to start and when to stop testing.
- Compare manual testing and automation testing. (Any four points)

Q.5 Attempt any TWO of the following:

12

- State the requirements for the following modules of a Hotel Room Booking System: i) Room booking ii) Customer iii) Billing
- A project of 60 KLOC is to be developed. Using basic COCOMO, calculate i) Effort ii) Development time iii) Average staff size iv) Productivity in organic and embedded modes.
- Prepare a time-line chart for 20 working days (5 days a week) for an Online Food Delivery App. Consider the phases of SDLC.

Q.6 Attempt any TWO of the following:

12

- Describe Six Sigma. Explain DMAIC and DMADV, and show how DMAIC can be applied to reduce late deliveries in an online food delivery business.
- Design six test cases for the “fund transfer” feature of a mobile banking application.
- Prepare a test plan (IEEE 829 format) for an Online Library Portal.

Note: This is a **model question paper prepared by Ananda Technologies** only for practice and exam preparation, based on the pattern of previous MSBTE question papers and the K-scheme syllabus. It is **not an official MSBTE paper**, and it does **not** mean that these questions will come in the exam. Answers follow standard textbook points; marks shown are indicative. Free for students — anandatechnologies.in