17513

21819

3 Hours / 100 Marks   Seat No. ☐☐☐☐☐☐☐

Instructions – (1) All Questions are *Compulsory*.

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

(4) Assume suitable data, if necessary.

(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. a) **Attempt any THREE of the following:**   **12**

(i) Define software engineering and explain the reason what is "Need of software engineering".

(ii) State the seven core principles of software engineering.

(iii) Compare the difference between bottom-up Integration and Top-down Integration (four points).

(iv) What is SQA? And define any four activities of SQA.

b) **Attempt any ONE of the following:**   **6**

(i) Define role of the Repository. List the six functions and explain any two of them in detail.

(ii) Enlist the five maturity levels of capability maturity model integration (CMMI) and explain it.

Marks

2. Attempt any FOUR of the following: **16**

a) Draw the diagram of Agile software development and give its drawbacks (four points).

b) Explain principles of communications which ensures smooth and proper communication among project participants.

c) Describe the following requirements of engineering tasks:

(i) Specification

(ii) Requirement management.

d) List the types of testing and explain it in brief.

e) Give difference between version control and change control (four points).

f) Explain 8-McCall's quality factor with the help of diagram.

3. Attempt any FOUR of the following: **16**

a) Draw the diagram of Incremental process model and give its demerits (four points).

b) Why good planning practice is needed for software development.

c) Give difference between modality and cardinality (four points)

d) Explain the situation where the condition alpha testing and beta testing is used in integration testing.

e) Why software configuration management (SCM) is needed?

4. a) Attempt any THREE of the following: **12**

(i) List the three domains of analysis model and explain characteristics of analysis modeling.

(ii) Explain "why it is necessary to design quality guidelines".

(iii) Explain "why black box testing is better than white box testing" software.

(iv) Describe DMAIC approach with respect to six sigma.

Marks

b) **Attempt any ONE of the following:**   **6**

    (i) Draw a neat labelled diagram of RAD model and explain how to overcome the drawbacks of RAD model.

    (ii) List and draw the neat labelled diagram of elements of analysis model and explain it in detail.

5. Attempt any TWO of the following: **16**

a) With the help of neat labelled diagram explain spiral process model and give the solution how to overcome the drawbacks of spiral process model.

b) Draw the data flow diagram for MSBTE online s18 exam form filling considering level 0 and level 1.

c) Explain the following terms:

    (i) Reactive risk strategies

    (ii) Proactive risk strategies.

6. Attempt any FOUR of the following: **16**

a) List the characteristics of software and explain any two of them in detail.

b) List the elements of design model and explain characteristics of design model.

c) Explain:

    (i) Patterns

    (ii) Functional independence with reference to data oriented design.

d) Define smoke testing, list characteristics of it (four points) and also give its demerits (two points)

e) List and explain the features of Software Configuration Management (SCM).

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