

17513

15116

3 Hours / 100 Marks

Seat No.

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- 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) Preferably write the answers in sequential order.

**Marks**

**1. (A) Answer any THREE of the following :**

**12**

- (a) Describe the characteristics of software.
- (b) Briefly explain software engineering as a layered technology.
- (c) With reference to requirement engineering, explain
  - (i) Inception and
  - (ii) Elicitation
- (d) With reference to software design give the meanings of
  - (i) Modularity
  - (ii) Functional independence
  - (iii) Refactoring
  - (iv) Information hiding

**(B) Answer any ONE of the following :**

**6**

- (i) With a neat diagram, explain the nature and general steps of spiral model.  
Also give its advantages and disadvantages.
- (ii) Explain the various elements of analysis modeling in detail.

**P.T.O.**

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

- (a) Define PSP and TSP. Give advantages of TSP.
- (b) Explain the features of Agile software development approach.
- (c) In which situation RAD model is applicable ? Give its advantages and disadvantages.
- (d) Describe the principles of deployment.
- (e) Explain PSPEC with an example.
- (f) Draw level 'O' and level 'I' DFD for library management system. Make suitable assumptions.

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

- (a) Explain the basic process framework activities.
- (b) Briefly describe the principles of communication.
- (c) Briefly describe the principles of coding.
- (d) With a neat diagram explain analysis model.
- (e) Explain domain analysis with a neat diagram.
- (f) Explain unit testing.

**4. (A) Answer any THREE of the following : 12**

- (a) Differentiate between alpha-testing and beta-testing.
- (b) Describe the following debugging strategies :
  - (i) Brute force
  - (ii) Back tracking
- (c) With an example, explain how CPM & PERT are useful in software project management.
- (d) Give the outline that defines basic elements of ISO 9001:2000 for software quality assurance.

**(B) Answer any ONE : 6**

- (a) Explain the basic principles of project scheduling.
- (b) Explain the McCall's Quality factors.

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

- (a) Explain the core principles of software engineering in detail.
- (b) Explain in detail RMMM strategy.
- (c) What is six sigma ? Describe the core steps of DMAIC in detail.

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

- (a) Explain white box testing.
  - (b) Explain Top-Down integration testing.
  - (c) Describe the attributes of a good test.
  - (d) Why do the software projects fail ? Give reasons.
  - (e) Describe the four elements of software configuration management system.
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