

(3 Hours)

Total Marks:80

N.B. : (1) Question No. 1 is compulsory
(2) Attempt any three questions out of remaining five.

1. Answer all questions. **20**
 - a) Explain White-Box testing with example.
 - b) Explain waterfall model with advantages and disadvantages
 - c) What is Requirement Elicitation? explain any two methods
 - d) Explain difference between validation and verification

2. (a) What is Agility ? Explain Extreme Programming (XP). In detail **10**
 (b) Explain in detail Service-Oriented Software Engineering. **10**

3. (a) Explain what is cyclomatic complexity also what are the different ways to calculate it with detailed example **10**
 (b) Explain Risk and its types? Explain the steps involved in setting up or generating RMMM plan. **10**

4. (a) Explain Size oriented Software Engineering Metrics. Find FP for E-commerce application with following data **10**
 No. Of user inputs: 50
 No. Of user outputs: 30
 No. Of user inquiries: 35
 No. Of user files: 06
 No. Of user external interfaces:04
 Assume suitable Complexity adjustment factors and weighting factors
 (b) What is User interface design Process? Explain with one example **10**

5. (a) Explain different types of software Maintenance? And also explain different steps for creating maintenance log. **10**
 (b) What is FTR & Walk-through? Compare FTR & Walk-through in detail **10**

6. Write short notes on (Any 2) **20**
 - (a) Coupling and Cohesion Techniques
 - (b) System Testing
 - (c) Reverse Engineering
 - (d) Change Control in SCM

[Time: 3 Hrs]

[Marks: 80]

Please check whether you have got the right question paper.

- N.B:
1. Question No.1 is compulsory
 2. Attempt any three questions out of the remaining Questions
 3. Make suitable assumptions wherever, necessary.

- Q. 1 Any 4**
- a) Explain hidden terminal problem in mobile communication (05)
 - b) Explain Frequency Reuse in cellular communication. (05)
 - c) Describe HLR, VLR, MSISDN, MSRN (05)
 - d) Explain WLL. (05)
 - e) The need of A3 A5 A8 GSM security protocols. (05)
- Q. 2**
- a) Explain U_m interfaces of GSM. (10)
 - b) Explain the reference model of GPRS. (10)
- Q. 3**
- a) Explain Snoop and Indirect TCP in detail. (10)
 - b) Explain UMTS basic architecture and frame structure of UMTS- FDD. (10)
- Q. 4**
- a) Explain AODV in detail. (10)
 - b) What is Minimal Tunneling in Mobile IP? (10)
- Q. 5**
- a) Explain CSMA/CA modes of working of 802.11 (10)
 - b) Explain architecture of Bluetooth in detail. (10)
- Q. 6 Any 2** (20)
- a) Electromagnetic spectrum usage for wireless communication
 - b) Compare 3G and 4G
 - c) Differentiate amongst HIPERLAN 1, HfPERLAN2

(3 Hours)

[Total Marks: 80]

Note:

1. Question No.1 is Compulsory.
2. Attempt any 3 questions out of the remaining Questions.
3. Make suitable Assumptions whenever necessary.
4. All question carry equal marks.

- Q 1. a) Define Distributed Database System? List advantages of it? [5]
 b) Explain Distributed Database Design Issues? [5]
 c) Compare homogenous and heterogeneous databases? [5]
 d) List applications of XML. [5]

- Q 2. a) Draw and Explain Model of Transaction Management in DDB. [10]
 b) Describe clearly Two Phase Commit (2PC) Protocol. [10]

- Q 3. a) Explain any one Timestamp Based Concurrency Control Mechanisms in DDB. [10]
 b) Explain types of fragmentation? Perform Primary Horizontal Fragmentation of relation Department looking for departments located at different site and accesses department information according to funds one site access $\leq 30,000$ and other site access $> 30,000$. [10]

DNo	DName	Funds	Loc
D001	HR	235,000	NY
D002	Development	410,000	NY
D003	Testing	300,000	UK
D004	Maintenance	350,000	UK

- Q 4. a) University Database contains information about the course and the Professors who teach the courses in each semester. Each course must also have information about the number of student enrolled, room no., date and time (when and where the course is conducted) [10]

- i. Create an XML Schema (.xsd) for above XML documents
- ii. Write XQuery for the following: Retrieve Course name which was conducted on 25/02/19 at 11.15 a.m.

- b) What are the various kinds of transparencies in distributed database design? Explain each with the help of an example. [10]

- Q 5. a) Explain Phases in Distributed Query Processing in Distributed Database? [10]
 b) Explain Wait Die and Wound Wait Method with the help of an example? [10]

- Q 6. a) Explain Distributed Database Architecture with neat diagram. [10]
 b) List and Explain anomalies of Concurrency Control in distributed system? [10]

(3 Hours)

(Total marks : 80)

Note: (1) Question No. 1 is compulsory.

(2) Attempt any three questions out of remaining five questions.

- Q1. (a) Differentiate System Program and Application Program. (05)
 (b) What is Macro? What are different features of macro? (05)
 (c) Differentiate between compiler and interpreter. (05)
 (d) Explain different types of Editors in brief. (05)
- Q2. (a) With reference to assembler, explain the following tables with suitable example. (10)
 (i) POT (ii) MOT (iii) ST (iv) LT (v) BT
 (b) What are different phases of Compiler? Give the internal representation after each phase of Compiler for the following statement
 Position = initial + rate*60. (10)
- Q3. (a) Draw flowchart and explain with databases the working of PASS 1 Assembler. (10)
 (b) Explain various storage allocation strategies. (10)
- Q4. (a) Explain the design of the Absolute Loader and mention all the data structures in detail. (10)
 (b) What is code optimization? Explain different code optimization techniques? (10)
- Q5. (a) Design a predictive parser for the given grammar. (10)
 $E \rightarrow E+T|T$
 $T \rightarrow T*F|F$
 $F \rightarrow (E)|id$
 (b) Explain different pseudo-ops used for conditional macro expansion along with examples. (10)
- Q6. Write a note on :
 (a) Inherited and Synthesized attribute (05)
 (b) Lex and YACC (05)
 (c) Syntax directed translation (05)
 (d) JAVA compiler environment (05)