

MEL/COMPAN/12

23/11/12

Software Engg.

AGJ 2nd half (e) 6

Con. 7516-12.

BB-4493

(3 Hours)

[ Total Marks : 100

**N.B. :** (1) Question No. 1 is **compulsory**.

(2) Attempt any **four** questions out of remaining **six** questions.

1. (a) Explain steps require to perform cost estimation using cocomo model. 10  
(b) Give a Software Requirement specification (SRs) for developing a software for payroll Management System. 10
2. (a) Explain risk identification, risk projection, RMMM plan in detail. 10  
(b) Explain how project scheduling and tracking for software project. 10
3. (a) Describe Data flow and Control flow diagram with suitable example. 10  
(b) Compare RAD and spiral model. 10
4. (a) Explain Transform Mapping and Transaction Mapping. 10  
(b) Explain software configuration management plans. 10
5. (a) Explain verification and validation techniques. 10  
(b) Explain CMM along with the levels and activities. 10
6. (a) What do you understand by Software Quality Assurance ? Explain. 10  
(b) Explain object oriented project metrics and estimation. 10
7. (a) Explain cohesion and coupling. 10  
(b) What are the different models produced during software requirement analysis ? Explain in detail. 10

M.E. sem II NID-2012 14/12/12  
Sub-IP. CMPN

AGJ-2nd half (q)-12-25

Con. 10778-12.

(3 Hours)

BB-4061

[Total Marks : 100

N.B. : (1) Question No. 1 is compulsory.

(2) Solve any **four** questions out of remaining **six** questions.

(3) Assume any **suitable** data if required and **state it**.

1. (a) Explain smoothing filters. 10  
(b) Explain the following descriptors 10
  - (i) Fourier descriptors
  - (ii) Moments.
2. (a) Write the Haar transform matrix of size  $8 \times 8$ . Also sketch the butterfly diagram for the fast algorithm of the above Haar transform. 10  
(b) Explain image averaging and image subtraction. 10
3. (a) Explain LoG and DoG in detail. 10  
(b) Define the term scotopic and photopic vision with reference to human visual system. 10
4. (a) Poorly illuminated images are the difficult ones to be segmented. Explain. 10  
(b) Segmentation algorithm for monochrome images generally are based on two basic properties of gray levels values. Explain. 10
5. Justify/Contradict the following statements : 20
  - (a) Enhancement process does not change the information contents of the image.
  - (b) For digital images having salt pepper noise, median filter is the best filter.
  - (c) For continuous image, histogram can be perfectly equalized, but it may not be so for digital images.
  - (d) The statement that "Run Length coding gives data compression" is not always true.
6. (a) Classify image Representation and explain any 2 representation methods. 10  
(b) Write a detailed note on Image Restoration. 10
7. Write short notes on - 20
  - (a) Arithmetic coding
  - (b) LZW coding technique
  - (c) Huffman coding
  - (d) Fidelity criteria.

**N.B. :** (1) Question No. 1 is compulsory.

(2) Attempt any four out of remaining.

(3) Assume suitable data if necessary and justify.

(4) Figures to the right indicate full marks.

1. (a) Consider the relation  $R = \{A, B, C, D, E, F, G, H, I, J\}$  and the set of FDs : 10  
 $G = \{\{A, B\} \rightarrow \{C\}, \{B, D\} \rightarrow \{E, F\}, \{A, D\} \rightarrow \{G, H\}, \{A\} \rightarrow \{I\}, \{H\} \rightarrow \{J\}\}$   
 What is the key for R ?  
 Decompose R into 2 NF, then 3 NF.  
 Prove that the decomposition  $R_1\{A, B, C, D, E\}$  and  $R_2\{A, C, F, G, H, I, J\}$  is lossy/lossless decomposition.
- (b) Give the rules for converting EER to ODB. 10
2. (a) Explain with examples immediate and deferred update for DB recovery. 10
- (b) Explain concurrency control in distributed database management system. 10
3. (a) Explain with examples recoverable, cascades, strict schedules. 10
- (b) What are differences and similarities between objects and literals in the ODMG object Model. 10
4. (a) How can you include the method signature into each class of the object oriented Database schema. 10
- (b) What is timestamp ? How does the system generate the timestamp ? How does the strict timestamp ordering differs from basic timestamp ordering ? 10
5. Consider the following relations :- 20  
 Customer (Cust-id, Cust- Name, Street, City, Zip, Phone)  
 Account (Acc No, Acc Type, Interest)
  - (a) Give example of two simple queries that would be meaningful for the Account relation.
  - (b) Show the desired horizontal partitioning of cust Account based on the partitioning of the Account.
  - (c) Write a query by which customer may be horizontally partitioned.
6. (a) Explain Data warehouse schemas with examples. 10
- (b) Explain with example to convert E-R diagram to Xml document. 10
7. Write a short note on the following any four :- 20
  - (a) Temporal DB
  - (b) Deductive DB
  - (c) Data mining – Classification Algorithm's
  - (d) Database Security
  - (e) Web Databases.

M.E. COMP SEM II N/D - 2012

Syb -- DOS

2nd Half-12 min-a-(b)-26

Con. 7934-12.

BB-4043

(3 Hours)

[Total Marks : 100

- N. B. : (1) Question No. 1 is **compulsory**.  
(2) Attempt any **four** out of the remaining **six** questions.

1. (a) What is the significance of RPC in distributed operating system ? Explain with the help of examples. 10  
(b) What is Transperancy ? Explain its types, significance and implementation feasibility. 10
  2. (a) Multiple transactions need to be executed simultaneously in different proceses. What are the different concurrency control approaches to handle such simultaneous transactions ? Can these approaches prevent deadlocks ? 10  
(b) State and explain the working of a distributed mutual exclusion algorithm. 10
  3. (a) What is CORBA ? Explain its design and security features. 10  
(b) State and explain the working of Centralised deadlock detection algorithm. 10
  4. (a) What is File migration and replication ? How is it achieved ? What is its significance ? 10  
(b) Explain the architecture and working of unix based N/W System. 10
  5. (a) "Simultaneous execution of the edge chasing algorithm (without priorities) could result in Phantom Deadlocks". Justify this statement with the help of examples. Suggest a means of resolving such false deadlocks. 10  
(b) Compare and contrast the EDF and RMA reet time scheduling algorithrns. 10
  6. (a) Explain "Distributed Resource Management" w.r.t. Distributed computing environment. 10  
(b) Discuss sender initiated and receiver initiated heuriptic algorithms for processor allocation in distributed systems. Which of these is more optimal for heavy loads and why ? 10
  7. Write short notes on any four :— 20
    - (a) Monolithic Kernal
    - (b) Distributed Shared Memory
    - (c) Firewalls
    - (d) NFS
    - (e) Consistent Global State.
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