B·E/comp/sem VIII/ M·S·D

(3 Hours)   [Total Marks : 100]

N.B. : (1) Question No. 1 is compulsory.
    (2) Attempt any four questions out of remaining six questions.
    (3) Assume suitable data if required.

1.   a) Explain the need of charge-coupled devices (CCDs). How is the color captured by CCDs?   10
     b) What is WORM? How is the information recorded and read from it?   10

2.   a) Explain different binary image compression schemes. Why and in which compression scheme the k-factor is used.   10
     b) What is authoring system? Explain its need and types with examples.   10

3.   a) Write a detailed note on storage and retrieval technologies.   10
     b) Describe any one application workflow design.   10

4.   a) With neat and labeled diagram explain design steps for multimedia system.   10
     b) In multimedia networking explain audio/video streaming with reference to communication between client and server and the role of RTP, RTCP and RSVP.   10

5.   'Dictionary of the living world' is an ideal type of multimedia presentation using maximum text, sound, images and video. You are appointed as consultant to implement this application in distributed environment. Assume required data if any.
     a. How can you manage multimedia object servers.
     b. Give the design for managing distributed objects.   20

6.   a) Compare and contrast i) RIFF and TIFF ii) ATM and FDDI   10
     b) With block diagram explain MPEG Methodology.   10

7.   Write Short note on. (Any Two)   20
     a) Audio compression
     b) Image scanners
     c) Virtual reality

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QP Code : **16000**

(3 Hours) [Total Marks : 100

N.B : (1) Question **no. 1** is **compulsory**.
(2) All questions carry **equal** marks.
(3) Attempt any **four** questions out of the rest.

1. (a) Discuss various Models of Distributed System? 10
    (b) Differentiate between NOS and DOS giving examples of each? 10

2. (a) What is the difference between Stateful and Stateless server implementation 10 models? Give example of distributed applications using each of the implementation model.
    (b) What do you understand by clock synchronization in distributed systems? Explain 10 one technique of logical clock synchronization.

3. (a) Explain Code Migration and the role of Mobile Agents? 10
    (b) List down the issues in designing Distributed Load balancing techinque. Explain 10 any two in detail.

4. (a) Explain the issues to be handled while designing DSM. 10
    (b) Explain RPC Call semantics. 10

5. (a) What are the various Group Communication protocols, Explain any one. 10
    (b) How Deadlock Detection is different for a distributed system. Explain any one 10 algorithm of Distributed Deadlock Detection.

6. (a) Explain Distributed algorithm for Mutual Exclusion. What are the advantages and 10 the disadvantages of it over Centralized algorithms.
    (b) Explain Process Migration in Heterogeneous environment. 10

7. Answer any two :—
    (a) Lightweight RPC 20
    (b) Name Resolution in DNS.
    (c) Data Centric and Client Centric Consistency Models.

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QP Code : **15766**

(3 Hours) [Total Marks :100

N.B. : (1) Question No.1 is **Compulsory.**
(2) Attempt any **four** out of **remaining** Questions.
(3) Figures to the **right** indicate **full marks.**

1. (a) Define Product Line Architecture   5
   (b) What is implicit invocation Style? Explain with example.   5
   (c) Explain simulation base framework.   5
   (d) What is a difference between view and viewpoint?   5

2. (a) Define following terms : —   10
       (i) Component
       (ii) Connector
       (iii) Configuration
       (iv) Accuracy
       (v) Precision
   (b) What is stakeholder driven modelling?   5
   (c) What is domain specific software architecture?   5

3. (a) What is SOA and web services?   10
   (b) What is architectural pattern? Explain any one pattern in detail with example.   10

4. (a) What is Framework? Give its types. What are design patterns?   10
   (b) Why is system based analysis important, even if component and connector   5
   based analysis is completed.
   (c) What is one-way and roundtrip mapping?   5

5. (a) "Focus on Architecture is focus on Reuse" Comment   10
   (b) What is perspective and descriptive architecture   10

6. (a) Design issues for NFP's: Complexity and Heterogeneity   10
   (b) Explain any two connectors in detail   10
       (i) Data Access
       (ii) Stream
       (iii) Procedure Call

7. Write short notes on (any two) :—   20
       (i) C2 style Architecture
       (ii) ATAM
       (iii) xADL

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QP Code : 15689 20-11-14

(3 Hours) [Total Marks : 100

N.B : (1) Question No. 1 is compulsory.
(2) Out of remaining questions, attempt any four questions.
(3) Draw neat labeled diagram wherever necessary.
(4) Answers to each new question to be started on a fresh page.

1. (a) What is HCI. Define the user interface and state the importance and benefits of good design. 5
    (b) Explain the factors by which user gets distract from the Computer System. 5
    (c) Describe different types of Secondary Window. 5
    (d) Distinguish between Model and Modeless Dialog box. 5

2. (a) Explain in details with suitable example about the following techniques determining requirement. Categorize them as Direct or Indirect method. 10
        (i)   Traditional Focus Group
        (ii) Support Line
        (iii) Card sorting for web sites
        (iv) Competitor Analyses
        (v)   User Interface prototyping.
    (b) Explain with examples the Qualities of visually pleasing composition. 10

3. (a) Describe the different ways & means to provide an effective feedback while designing HCI application with suitable examples. 10
    (b) Explain the general principals of user interface design? 10

4. (a) Describe in brief the different types of Graphical Menus in HCI applications. 10
    (b) Explain Internationalization and Globalization I Localization concept to make the design of HCI Application internationally accessible. 10

5. (a) Apply HCI principles for designing the user interface for Automatic Ticket Vending Machine (ATVM) machine for ABC metro train . It should allow user to select the source and destination, to buy a ticket .Assume suitable data and screen elements and draw the interface. 10
    (b) Explain human consideration in screen design and also explain ordering of screen data and content. 10

6. (a) List the different device based and screen based controls and explain the guidelines for selecting screen based controls in brief. 10
    (b) Describe the different types of Windows Presentation Styles. 10

7. Write a short note on :— 20
        (a) Typical Human Computer Interaction Speeds
        (b) Designing for visually impaired
        (c) Interface building tools
        (d) guidelines for color selection for web page.

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QP Code : 15692

(3 Hours)   [Total Marks : 100

N. B. : (1) **Question one** is **compulsory**.

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

      (3) Assume **suitable** data wherever **necessary** and **state** it cleary .

1. Answer **any four** of the following.   20
   (a) What is Principal component analysis.
   (b) What is zero crossing edge detector
   (c) Explain view class matching
   (d) What is inverse perspective projection
   (e) Discuss Significance of chain codes in object representaion.

2. (a) Explain border tracking algorithm with Suitable example.   10
   (b) Explain 'Thinning' and 'Thickining' with the help of suitable example   10

3. (a) What is control strategies? Discuss the two major form of Control (i.e.   10
       Hierarchical and Heterachical) strategies
   (b) Explain hough transform with example mention all its merits and demerits.   10

4. (a) Explain back tracking algorithm with suitable example   10
   (b) Apply iterative and classical connected component labelling algorithm on   10
       following.

0	0	0	0	0	0	0	1	1	0
0	1	1	0	0	0	1	1	1	0
0	1	1	1	0	1	1	1	1	0
0	0	1	1	0	0	0	1	1	0

5. (a) Explain motion based and rule based segmentation.   10
   (b) What is signature segmentation? Find the horizantal, vertical and diagonal   10
       signatures of the binary image segment shown below.

1	1		1	1
1	1		1	1
		1		
1	1			1
1			1	1

6. (a) Explain knowledge based vision. Explain different forms of knowledge   10
       representation used in computer vision.
   (b) Explain Run length implementation algorithm with suitable example   10

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7. (a) Give all the steps involve in recoginition methodology and briefly explain   10
        each

    (b) Explain the following region growing algorithm with suitable example.   10
        (i)   Centroid Linkage
        (ii) Hybrid Linkage
        (iii) Single Linkage

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