28 : 1st half.11-AM(m)

Con. 3118-11.   (OLD COURSE)   **RK-2364**

(3 Hours)   [Total Marks : 100]

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

1. (a) Explain various phases of compiler with suitable example.   10
   (b) Explain design of Absolute Loader.   10

2. (a) Distinguish between top down and bottom up parsing.   10
   (b) Explain code optimization techniques in compiler.   10

3. (a) Explain working of two pass assembler, with neat flow charts and description of   15
        various databases used.
   (b) What are assembler directives ? Explain with examples.   5

4. (a) Explain with help of memory data formats, registers, instruction format, addressing   10
        modes of traditional CISC machines.
   (b) Explain the two pass macro processor with neat flowchart and databases.   10

5. (a) Explain operator precedence parser with suitable example.   10
   (b) Explain syntax directed translation, with example.   10

6. (a) Explain design of direct linking loader.   10
   (b) Explain different types of Text editors.   10

7. Write detailed notes on any **two** of the following :—   20
   (a) LEX and YACC
   (b) Macro assembler
   (c) Debug monitor.

Con. 3931-11.   (OLD COURSE)   RK-2355

(3 Hours)   [Total Marks : 100

Note: 1) Q.1 is compulsory.
       2) Answer any 4 out of remaining 6 questions.

1.A) Design database that manages information about publishers, authors, and books with the
    Following information about the system
    Publisher : name & address of the headquarters, set of branches, branch address &
             branch phone numbers (assume 2 phone numbers).
    Author : name & address.
    Book is published by a publisher & has a list of authors associated with it. An author can
    publish several books but a book is published by at most one publisher.
    a) Draw an EER diagram for the above specification   (4m)
    b) Specify an object relational database schema that represents the above
        Properties.   (8m)

   B) Explain the following concepts with example: (8m)
      i) subclass,   ii) superclass
      iii) specialization   iv) generalization

2.A) Compare RDBMS, OODBMS, ORDBMS.   (10m)

  B) Explain mobile databases in detail.   (10m)

3.A) Explain the architecture of parallel databases.   (10m)

  B) i) Explain star schema in detail.   (5m)
     ii) Define Data Warehousing & Data Mining. List the applications.   (5m)

4.A) Explain with proper example nested relations in ORDBMS.   (10m)

  B) Explain Geographic Information System in detail.   (10m)

5.A) What is DTD? Give the DTD for an XML representation of the following nested relational
     schema .   (10m)
     Emp={ename,Childrenset setof(children), Skillset setof(skill) }
     Children={name,Birthday}
     Birthday={day,month,year}
     Skills={type, Examset setof(exams) }
     Exams={year,city}.

6. A) Explain with suitable example object identity, object structure & type constructers.   (10m)

   B) Explain concurrency control & recovery in distributed databases.   (10m)

7. Write short note on any two: (20m)
    i) Temporal databases
    ii) 2 phase commit protocol with example
    iii) Data fragmentation, Replication and Allocation techniques for distributed database design

Con. 3828-11.   (OLD COURSE)   RK-2358

(3 Hours)   [Total Marks : 100

N.B. (1) Question No. **1** is **compulsory**.
      (2) Attempt any **four** questions out of remaining **six** questions.
      (3) **Figures** to the **right** indicates **full** marks.

1. (a) Explain the characteristics of Modern Operating System.   5
    (b) Explain with neat sketch the traditional Unix Kernel.   5
    (c) List and explain the various mechanism that Unix O.S. providers for IPC and   5
        syncronization.
    (d) Write short notes on : File Directories.   5

2. (a) Explain the memory management techniques used by Unix SVR 4 system.   10
    (b) Explain multiprogramming, multiprocessor, multithreading and multicomputer system   10
        in short.

3. (a) Explain process control block with diagram.   10
    (b) Explain the major objectives and functions of Operating System.   10

4. Explain with neat sketch the general organization of an :—
    (a) SMP. Also give the design consideration of multiprocessor O.S.   10
    (b) What are the requirements of mutual exclusion ? Explain Peterson's algorithm   10
        for mutual exclusion.

5. (a) What are the four conditions that create deadlock ? Explain deadlock prevention   10
        and deadlock avoidance.
    (b) What is Virtual Memory ? Explain with neat sketch the translation of virtual address   10
        into physical address in a segmentation/paging (combined approach) system.

6. (a) What Criterias are important in choosing a file organization ? List and briefly   10
        describe the five basic file organizations.
    (b) Explain Semaphore. What is function of semaphore ?   10

7. (a) Explain various IO buffering techniques.   10
    (b) Write a short note on Windows 2000 file system.   10

Con. 3833–11.   (OLD COURSE)   RK–2367

(3 Hours)   [Total Marks : 100

N.B. : (1) Question No. **1** is **compulsory**.
   (2) Attempt any **four** questions from remaining **six** questions.
   (3) Assume **suitable** data wherever **necessary**.

1. (a) Explain the terms –   10
     (i) URL
     (ii) Telnet.
 (b) Explain the cycle of servlet.   10

2. (a) Explain following HTML tags :–   10
     (i) Frame
     (ii) Table
     (iii) Form.
 (b) Explain in details Hypertext and Hypertext structure. 10

3. (a) Explain client-side Technologies in details.   10
 (b) What is DHTML ? How it can be differ from HTML ? 6
 (c) Write short note on Namespaces.   4

4. (a) Explain in details following protocols :–   10
     (i) TCP/IP
     (ii) FTP.
 (b) Draw and explain XML DOM structure in details.   10

5. (a) Explain following :–   12
     (i) Java script expressions
     (ii) Strings and Arrays
     (iii) Control flow and functions.
 (b) What is internet banking ? Mention the challenges in internet banking. 8

6. (a) Explain the use of following ASP objects :–   10
     (i) Request   (iii) Application
     (ii) Session   (iv) Servel.
 (b) Explain the concepts :–   10
     (i) Cascading style sheet
     (ii) Java server pages.

7. Write short notes on (any **four**) :–   20
  (a) Cookies   (b) CGI scripting with perl
  (c) e-shopping (d) Email.

****

13 : 1st half-11(d)-JP

Con. 3546-11.　　　　　　　　　(OLD COURSE)　　　　　　　　RK-2362

(3 Hours)　　　　　　　　[Total Marks : 100

N.B. (1) Question No. **1** is **compulsory**.
　　　(2) Solve any **four** questions from question nos. **2 to 7**.
　　　(3) Assume **appropriate** data where **necessary**.
　　　(4) **All** questions carry **equal** marks.

1. (a) Derive the Bresenham's line drawing algorithmn. What are its advantages ?　　10
　　(b) Prove Translation, Rotation and Scaling transformation matrix for 2-D.　　10

2. (a) Develop the midpoint circle generation algorithm.　　10
　　(b) Explain the Liang-Barky line clipping algorithm.　　10

3. (a) Explain Scanline Polygon fill algorithm.　　10
　　(b) Explain 3-D clipping in detail.　　10

4. (a) Explain parallel and perspective projection. Derive the matrix for perspective　　10
　　　projection.
　　(b) Explain Z-buffer algorithm for removing hidden surfaces.　　10

5. (a) Write the properties of Bezier curves and B-spline curves.　　10
　　(b) Explain Gourand shading and Phong shading. State relative merits.　　10

6. (a) Explain Sutherland-Hodgeman polygon clipping algorithm.　　10
　　(b) Give a comparison of boundary fill and flood fill algorithm. Write a procedure to　　10
　　　fill a region bounded by different colors use 8-connected approach.

7. Write short note (any **four**) :—　　20
　　(a) Character Generation Technique.
　　(b) Antialiasing and Aliasing.
　　(c) Halftone Shading.
　　(d) Dithering Techniques.
　　(e) Segmentation.