06 CS/IS

VI CS/IS

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Sixth Semester B.E. Degree Examination, June 2012
Management and Entrepreneurship

Time: 3 hrs.   Max. Marks:100

Note: *Answer FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1 a. What is management? Explain the various roles of management. (08 Marks)
  b. Explain the nature and characteristics of management. (08 Marks)
  c. Mention the contribution and limitations of scientific management. (04 Marks)

2 a. Bringout the nature and importance of planning. Explain the different forms of planning. (10 Marks)
  b. What are the types of decisions? Explain with example. (04 Marks)
  c. Explain the various problems that the managers faces while making decisions. (06 Marks)

3 a. What is span of management? Explain the various factors that govern the span of management. (08 Marks)
  b. Distinguish between centralization and decentralization. Mention their advantages. (08 Marks)
  c. What are the importances of staffing? Give examples. (04 Marks)

4 a. Compare and contrast the Maslow's need hierarchy theory with Herzberg's two factor theory. (08 Marks)
  b. Explain the various barriers to communication. (06 Marks)
  c. Explain the various methods of establishing control on the deviations in an organization. (06 Marks)

PART – B

5 a. Explain the qualities of an entrepreneur. (10 Marks)
  b. Mention the parameters which decided the quality of environment that would promote entrepreneurship. (05 Marks)
  c. Discuss the role of entrepreneur in the economic development. (05 Marks)

6 a. Define small scale industry, Ancillary industry and Tiny industry with advantages of each. (12 Marks)
  b. What are the characteristics of small scale industries? Explain. (08 Marks)

7 a. Explain the objectives and functions of national small industries corporation. (10 Marks)
  b. Write notes on DIC, TECKSOK and state financial corporations. (10 Marks)

8 a. Explain the various guidelines provided by the planning commission for preparation of project report. (10 Marks)
  b. Explain the various methods of project appraisal. (10 Marks)

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06CS62

Sixth Semester B.E. Degree Examination, June 2012
Unix Systems Programming

Time: 3 hrs.

Max. Marks:100

Note: *Answer FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1   a. Explain the setlocale function with syntax and an example.   **(08 Marks)**
    b. Explain the following compile time limits:
        _POSIX_PATH_MAX, _POSIX_OPEN_MAX.   **(04 Marks)**
    c. Explain the commonly occurring error status codes and their meanings.   **(08 Marks)**

2   a. Explain the different types of files in UNIX.   **(10 Marks)**
    b. Explain the UNIX kernel support for files.   **(10 Marks)**

3   a. Explain the working of the open function with the prototype.   **(10 Marks)**
    b. How do you access and modify the time stamps of a file? Explain the prototype and write a program to illustrate the usage of the prototype.   **(10 Marks)**

4   a. Explain the memory layout of a C program.   **(06 Marks)**
    b. What are the APIS to query and change the resource limits. List the rules that govern the changing of the resource limits.   **(08 Marks)**
    c. Explain with a neat block diagram UNIX process data structure.   **(06 Marks)**

PART – B

5   a. Explain the working of the fork( ) function.   **(08 Marks)**
    b. Describe the sequence of processes involved in executing TELNET server.   **(08 Marks)**
    c. What is an orphaned process? Explain with an example.   **(04 Marks)**

6   a. What is the use of the alarm API? Give the prototype of alarm API. How can the alarm API be used to implement the sleep API?   **(08 Marks)**
    b. List the timer manipulation APIS in POSIC. 1b.   **(06 Marks)**
    c. Explain the three ways to generate log messages.   **(06 Marks)**

7   a. Explain with an example client-server communication using a FIFO.   **(08 Marks)**
    b. What are the advantages and disadvantages of XSI IPC?   **(06 Marks)**
    c. Write a program to send data from parent to child over a pipe.   **(06 Marks)**

8   a. What is Byte ordering? Explain the two types of ordering. Explain the APIS to convert between the processor byte order and the network byte for TCP?IP applications.   **(12 Marks)**
    b. Explain the following APIS with prototypes listen ( ) and accept ( ).   **(08 Marks)**

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Sixth Semester B.E. Degree Examination, June 2012
Compiler Design

Time: 3 hrs.   Max. Marks:100

**Note: *Answer FIVE full questions, selecting
at least TWO questions from each part.***

PART – A

1 a. Give the general structure of a complier. Show the working of different phases of a complier taking an example. **(10 Marks)**
   b. List the and explain reasons for separating analysis portion of a complier into lexical analysis and syntax analysis phases. **(06 Marks)**
   c. Why two-buffer scheme is used in lexical analysis? Write an algorithm for "look ahead code with sentinels". **(04 Marks)**

2 a. Show how left recursion and left factoring help top down parsing? **(06 Marks)**
   b. Give algorithm for FIRST and FOLLOW sets construction. Give the same for the grammar.
   $E \rightarrow TE'$, $E' \rightarrow TE'/\epsilon$, $T \rightarrow FT'$, $T' \rightarrow * FT'/\epsilon$, $F \rightarrow (E)/id$. **(08 Marks)**
   c. Explain the "panic-mode recovery" and "global correction" error recovery strategies. **(06 Marks)**

3 a. What is meant by handle pruning? How it helps in shift reduce parsing? List the actions of a shift reduce parser. **(10 Marks)**
   b. Show that the following grammar.
   $S \rightarrow Aa\ Ab/\ Bb\ Ba$ $A \rightarrow \epsilon$ $B \rightarrow \epsilon$ is not SLR (1) clearly mention the reasons. **(10 Marks)**

4 a. Construct LR (1) items for $S \rightarrow Cc$ $C \rightarrow cC/d$, also construct GOTO graph for the same grammar. **(10 Marks)**
   b. How ambiguous grammar are handled by YACC? Develop unambiguous YACC specification for a desktop calculator. **(10 Marks)**

PART – B

5 a. Define inherited and synthesized attributes. Give examples. **(05 Marks)**
   b. Define syntax directed definition for a simple type declaration. **(05 Marks)**
   c. Give a SDD for desktop calculator and show its stack implementation. **(10 Marks)**

6 a. List various three address instruction forms. Give one example for each. **(10 Marks)**
   b. Write a note on quadruple and triples. **(05 Marks)**
   c. Give a semantic action for $S \rightarrow while\ (B)\ S$. **(05 Marks)**

7 a. With a diagram explain the typical subdivision of run time memory. **(08 Marks)**
   b. Discuss about the various components and their use in an activation record. **(08 Marks)**
   c. How access to non local data in the stack is done? **(04 Marks)**

8 a. What is a basic block? How optimization is done in basic blocks? **(10 Marks)**
   b. Give the code generation process for an arithuctic operation. Generate instructions for the stalement,
   $t = a–b$, $u = a–c$, $v = t + u$. **(10 Marks)**

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06CS64

Sixth Semester B.E. Degree Examination, June 2012
Computer Networks – II

Time: 3 hrs.   Max. Marks:100

Note: *Answer FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1 a. With examples, differentiate between datagram and virtual circuit packet switching.
                                                                                  (06 Marks)
   b. Define routing. With an example, explain the Bellman-Ford algorithm for shortest-path routing.   **(10 Marks)**
   c. Write a short note on ATM networks.   **(04 Marks)**

2 a. Explain the techniques for closed-loop congestion control.   **(08 Marks)**
   b. A university has 150 LANs with 100 hosts in each LAN. Design an appropriate subnet addressing scheme if the university has one class B address.   **(06 Marks)**
   c. Explain the fragmentation and reassembly in IP network.   **(06 Marks)**

3 a. What do you mean by tunneling? Briefly explain the changes from IPv4 to IPv6. **(08 Marks)**
   b. With a neat diagram, explain three-way handshake for connection establishment in TCP.
                                                                                  (08 Marks)
   c. Write a short note on internet routing protocols.   **(04 Marks)**

4 a. With a neat diagram, explain the ATM cell header format.   **(08 Marks)**
   b. Briefly explain five ATM service categories.   **(07 Marks)**
   c. Explain the classical IP over ATM.   **(05 Marks)**

PART – B

5 a. Define network management. Discuss the interactions between the SNMP management station and SNMP agent.   **(08 Marks)**
   b. Explain the security attacks and security goals.   **(06 Marks)**
   c. Explain the Diffie-Hellman exchange for secret key generation. What are its weaknesses?
                                                                                  (06 Marks)

6 a. Explain the various types of resources allocation scheme by specifying the parameters for classification.   **(08 Marks)**
   b. List the benefits of creating VPNs. Explain VPN types.   **(08 Marks)**
   c. Write a short note on traffic engineering.   **(04 Marks)**

7 a. Explain the MPEG standards and frame types for compression.   **(06 Marks)**
   b. With an example, explain Huffman encoding for data compression   **(06 Marks)**
   c. Explain the different servers contained in SIP with its overview.   **(08 Marks)**

8 a. List and explain the applications and features of ad-hoc networks.   **(07 Marks)**
   b. Explain the security vulnerabilities and security attacks in ad-hoc networks. **(07 Marks)**
   c. With a neat diagram, explain sensor mode structure.   **(06 Marks)**

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06CS65

Sixth Semester B.E. Degree Examination, June 2012
Computer Graphics and Visualization

Time: 3 hrs.

Max. Marks:100

Note: *Answer FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1   a. Briefly explain any two applications of computer graphics.   **(04 Marks)**
    b. Explain the concept of pinhole camera of an imaging system. Also derive the expression for angle of view.   **(06 Marks)**
    c. Discuss the graphics pipeline architecture, with the help of a functional schematic diagram.   **(10 Marks)**

2   a. With the help of a diagram, describe the open GL interface.   **(04 Marks)**
    b. Write explanatory notes on: i) RGB color model;   ii) Indexed color model.   **(06 Marks)**
    c. Write an open GL recursive program for 2D-sierpinski gasket with relevant comments.   **(10 Marks)**

3   a. What are the two major characteristics that describe the logical behavior of an input device? Explain the different clauses of logical input devices.   **(08 Marks)**
    b. List the various features that a good interactive program should include.   **(04 Marks)**
    c. Write an open GL program, to demonstrate the hierarchical means, to draw a rectangle and to increase or decrease the size of the rectangle.   **(08 Marks)**

4   a. Explain the procedure involved in transforming the world frame to camera/eye frame using the model view matrix.   **(10 Marks)**
    b. Write an open GL program to demonstrate the use of homogeneous coordinate transformations and simple data structure for representing a rotating cube with color interpolation.   **(10 Marks)**

PART – B

5   a. Define and represent the following 2-D transformations in homogeneous coordinate system: i) Translation;   ii) Rotation;   iii) Scaling;   iii) Reflection.   **(12 Marks)**
    b. What is concatenation transformation? Explain rotation about a fixed point.   **(08 Marks)**

6   a. Discuss the following open GL functions: i) gluLook At;   ii) gluPerspective.   **(06 Marks)**
    b. Write a note on hidden surface removal.   **(04 Marks)**
    c. Derive the projection matrices for perspective viewing.   **(10 Marks)**

7   a. Describe any two types of light sources that are sufficient for rendering most simple scenes.   **(04 Marks)**
    b. Discuss the phing-lighting model.   **(08 Marks)**
    c. What are the different methods available for shading a polygon? Discuss any two.   **(08 Marks)**

8   a. Explain in brief, Cohen-Sutherland line clipping algorithm with possible cases.   **(08 Marks)**
    b. What do you mean by antialiasing? Explain.   **(04 Marks)**
    c. Discuss the Bresenham's rasterization algorithm.   **(08 Marks)**

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06IS65

Sixth Semester B.E. Degree Examination, June 2012
Information Systems

Time: 3 hrs.

Max. Marks:100

Note: *Answer FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1 a. What is meant by cybernetic system? Explain. **(05 Marks)**
   b. Discuss the fundamental roles of IS in business. **(05 Marks)**
   c. Elaborate the types of information systems, with a neat diagram. **(10 Marks)**

2 a. Discuss business process re-engineering. List some of the key ways that business process re-engineering differs from business improvement. **(08 Marks)**
   b. Define virtual company and how are they created? List the basic business strategies of virtual companies. **(12 Marks)**

3 a. Explain enterprise application architecture, with a neat diagram. **(10 Marks)**
   b. What is targeted marketing? Explain the five major components of targeted marketing for electronic commerce applications. **(10 Marks)**

4 a. Explain the major applications of customer relationship management. **(10 Marks)**
   b. With a neat diagram, explain the role of electronic data interchange in business to business electronic commerce. **(10 Marks)**

PART – B

5 a. List and explain the key factors for success in e-commerce applications. **(06 Marks)**
   b. Bring out the various types of e-commerce market places and explain them. **(08 Marks)**
   c. Describe the following e-commerce process:
      i)   Profiling and personalizing.
      ii) Workflow management. **(06 Marks)**

6 a. Draw and explain the different components of a web enabled marketing decision support system. **(10 Marks)**
   b. Describe the different types of analytical modeling activities supported by decision support system. **(10 Marks)**

7 a. Discuss the principles of technology ethics. **(08 Marks)**
   b. Briefly explain the common hacking tactics that are used to assault companies through internet and other networks. **(06 Marks)**
   c. List various types of internet abuses that occur frequently. **(06 Marks)**

8 Write short notes on:
   a. Global systems development strategies. **(06 Marks)**
   b. Business drivers for global IT. **(06 Marks)**
   c. Information technology architecture. **(08 Marks)**

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Sixth Semester B.E. Degree Examination, June 2012
Operation Research

Time: 3 hrs.

Max. Marks:100

Note: *Answer any FIVE full questions, selecting atleast TWO questions from each part.*

<u>PART - A</u>

1 a. The following table gives the data for a problem. Formulate the problem as a LP model.

(06 Marks)

Raw Materials	Requirement / Unit			Availability
	I	II	III	
A	2	3	5	4000
B	4	2	7	6000
Min Demand	200	200	150	
Profit / Unit	30	20	50	

  b. Define i) Feasible solution ii) Feasible region iii) Optimal solution iv) Degeneracy

(04 Marks)

  c. Using graphical method, solve the LPP
   Maximize $Z = 5x_1 + 4x_2$
   Subject to $6x_1 + 4x_2 \le 24$
   $x_1 + 2x_2 \le 6$
   $-x_1 + x_2 \le 1$
   $x_1, x_2 \ge 0$.

(10 Marks)

2 a. Define and illustrate with examples, slack and surplus variables. **(04 Marks)**
  b. Find all the basic solutions to the following system of equation identifying in each case the basic and non – basic variables.
   $2x_1 + x_2 + 4x_3 = 11$; $3x_1 + x_2 + 5x_3 = 14$. **(06 Marks)**
  c. Using simplex method, solve the following LPP.
   Maximize $Z = 4x_1 + 3x_2 + 6x_3$
   Subject to $2x_1 + 3x_2 + 2x_3 \le 440$
   $4x_1 + 3x_3 \le 470$
   $2x_1 + 5x_2 \le 430$
   $x_1, x_2, x_3 \ge 0$.

(10 Marks)

3 a. Using Big – M method, solve the following
   Minimize $Z = 3x_1 + 2x_2 + x_3$
   Subject to $x_1 + x_2 = 7$
   $2x_1 + x_2 + x_3 \ge 10$
   $x_1, x_2, x_3 \ge 0$.

(10 Marks)

  b. Using Two phase method, solve the following LPP
   Maximize $Z = 7.5x_1 - 3x_2$
   Subject to $3x_1 - x_2 - x_3 \ge 3$
   $x_1 - x_2 + x_3 \ge 2$
   $x_1, x_2, x_3 \ge 0$.

(10 Marks)

4 a. Explain the basic idea behind primal – dual relationship. (04 Marks)
   b. Obtain the dual of the following primal problem
       Minimize $Z = 3x_1 - 2x_2 - x_3$
       Subject to $2x_1 + 3x_2 + x_3 \le 5$
       $\qquad 4x_1 - 2x_2 \ge 9$
       $\qquad -8x_1 + 4x_2 + 3x_3 = 8$. (06 Marks)
   c. Use revised simplex method to solve the following LPP
       Maximize $Z = x_1 + x_2$
       Subject to $3x_1 + 2x_2 \le 6$
       $\qquad x_1 + 4x_2 \le 4$
       $\qquad x_1, x_2 \ge 0$. (10 Marks)

PART - B

5 a. Solve the following LPP using dual simplex method
       Minimize $Z = 2x_1 + x_2$
       Subject to $3x_1 + x_2 \ge 3$
       $\qquad 4x_1 + 3x_2 \ge 6$
       $\qquad x_1 + 2x_2 \ge 3$
       $\qquad x_1, x_2 \ge 0$. (10 Marks)
   b. Write the working procedure of dual simplex method. (05 Marks)
   c. Explain parametric integer linear programming and its importance. (05 Marks)

6 a. Find the initial basic feasible solution using North West corner and Vogel's approximation methods for the following transportation problem. (10 Marks)

19	30	50	10	7
70	30	40	60	9
40	8	70	20	18
5	8	7	14	

   b. Write the procedure of Hungarian method. (05 Marks)
   c. Solve the assignment problem represented by the following matrix using column reduction.

	A	B	C	D
1	2	3	4	5
2	4	5	6	7
3	7	8	9	8
4	3	5	8	4

(05 Marks)

7 a. Solve the game whose pay off matrix is given below

	B_1	B_2	B_3	B_4
A_1	-5	2	0	7
A_2	5	6	4	8
A_3	4	0	2	-3

   Give the value of game and strategies adopted by A and B. (05 Marks)
   b. Find out the value of game, given the following pay off matrix (05 Marks)

	B_1	B_2
A_1	4	-4
A_2	-4	4

   c. Solve the problem Q7(b), using graphical method. (05 Marks)

d. Find out the route of traveling sales person, given the following distances between cities.

	A	B	C	D	E
A	-	4	10	14	2
B	12	-	6	10	4
C	16	14	-	8	14
D	24	8	12	-	10
E	2	6	4	16	-

(05 Marks)

8   a. Explain in detail the minimum spanning tree with constraints. **(08 Marks)**
    b. Explain genetic algorithm and simulate annealing algorithm. **(12 Marks)**

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