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06AL61

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

Time: 3 hrs.

Max. Marks: 100

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

PART - A

- 1
 - a. What is Management? Considering management as operational process, explain its various sub – processes. (08 Marks)
 - b. Explain required change in skill – mix of a manager, with respect to his level in an organization. (08 Marks)
 - c. What are the features of Bureaucratic administration? (04 Marks)
- 2
 - a. Define planning. Compare strategic planning with tactical planning. (06 Marks)
 - b. What is rational decision? Explain steps involved in the process of rational decision making. (08 Marks)
 - c. What are different environments of decision making? (06 Marks)
- 3
 - a. Explain major principles to be followed to develop sound and efficient organizational structure. (08 Marks)
 - b. What is span of management / span of control? What is significance of number of relations between manager and subordinates in span of control? (06 Marks)
 - c. What are different advantages of decentralization? (06 Marks)
- 4
 - a. What is leadership? What are the major functions of a leader? (08 Marks)
 - b. Explain Maslow's Need – Hierarchy theory. (08 Marks)
 - c. Explain the purpose of control system. (04 Marks)

PART - B

- 5
 - a. What are the major characteristics of an entrepreneurship? (08 Marks)
 - b. Give the classification of entrepreneurs based on functional characteristics. (04 Marks)
 - c. What are internal and external barriers of entrepreneurship? (08 Marks)
- 6
 - a. Explain using flowchart, formalities for setting up small scale industry (SSI) unit. (10 Marks)
 - b. Give the classification of different state level agencies for the promotion of SSI. (10 Marks)
- 7
 - a. Explain objectives and functions of infrastructure agency KIADB. (08 Marks)
 - b. What is TECSOK? Explain services offered by TECSOK. (08 Marks)
 - c. Write a note on single window load scheme of KSFC. (04 Marks)
- 8
 - a. What are the criteria for selecting a project? (08 Marks)
 - b. Compare PERT and CPM project scheduling techniques. (08 Marks)
 - c. What is project appraisal? Give main stages of project appraisal. (04 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
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Time: 3 hrs.

Max. Marks: 100

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

Eighth Semester B.E. Degree Examination, June/July 2011
Data Communication and Networking

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PART - A

- 1 a. With diagram explain physical topology of a network. (08 Marks)
 b. With diagram, explain five components of data communication system. (08 Marks)
 c. Explain protocols and standards. (04 Marks)

- 2 a. With diagram, explain the Open System Interconnection model. (08 Marks)
 b. Encode the data 01001100011 in the following formats i) NRZ-L ii) NRZI iii) Bipolar-AMI (08 Marks)
 iv) Pseudo ternary v) Manchester vi) Differential Manchester
 c. If a periodic signal is decomposed into five sine waves with frequencies of 100, 300, 500, 700 and 900 Hz what is the bandwidth? Draw the spectrum assuming all components have maximum amplitude of 10V. (04 Marks)

- 3 a. With diagram, explain i) serial transmission ii) parallel transmission (08 Marks)
 b. Explain the steps involved in block coding. (08 Marks)
 c. A signal has four data levels with a pulse duration of 1msec. Calculate the pulse rate and its bit rate. (04 Marks)

- 4 a. Give the comparison of Bit and Baud rate. (08 Marks)
 b. Explain i) TDM ii) WDM (08 Marks)
 c. Explain bit padding (04 Marks)

PART - B

- 5 a. Explain omni directional and unidirectional antennas. (08 Marks)
 b. Explain CSMA/CD operation. (08 Marks)
 c. Explain wireless LAN configuration. (04 Marks)

- 6 a. Find CRC for a frame (message) 1010001101 and $G(x) = x^5 + x^4 + x^2 + 1$. (08 Marks)
 b. Explain the operation of Sliding window protocol with relevant diagrams. (08 Marks)
 c. Discuss the various issues that are to be considered while designing data link layer. (04 Marks)

- 7 a. Explain i) Leaky Bucket Algorithm. (08 Marks)
 ii) Token Bucket Algorithm. (08 Marks)
 b. Explain the principle of Internetworking. (08 Marks)
 c. Give IPv6 Header format. (04 Marks)

- 8 a. Explain TCP Services and features. (08 Marks)
 b. Explain Connectionless versus connection oriented service in transport layer. (08 Marks)
 c. Explain UDP operation. (04 Marks)

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Sixth Semester B.E. Degree Examination, December 2012
Unix System 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 different functions used to query system-wide limits. Write a C program to demonstrate how to use the functions to query the limits. (10 Marks)
- b. What is an API? List the functions which are performed by the Unix system APIs. Also explain why calling an API is more time-consuming than calling a user defined functions. (06 Marks)
- c. Differentiate between ANSIC and C++. (04 Marks)
- 2 a. Explain the different types of Unix or POSIX files. Also explain how to create these files. (10 Marks)
- b. Differentiate between C stream pointers and file descriptors. (05 Marks)
- c. Differentiate between hard link and symbolic links. (05 Marks)
- 3 a. Explain the following file APIs with their prototypes:
i) write ii) lseek iii) link iv) stat (10 Marks)
- b. Discuss the file and record locking in unix system. Explain the fcntl API for file locking. (10 Marks)
- 4 a. What are the different ways of process termination? Differentiate between exit and –exit functions. (06 Marks)
- b. Write a C program to echo all its command-line arguments to standard output. (04 Marks)
- c. Explain the setjmp and longjmp functions with its prototypes. Illustrate the use of setjmp and longjmp function, with a example program. (10 Marks)

PART – B

- 5 a. Explain how vfork function is different than fork function. Also, write a program to demonstrate both fork and vfork functions. (10 Marks)
- b. Explain process groups and sessions. Discuss their relationship, with controlling terminal. (10 Marks)
- 6 a. Explain the following APIs related to signals with their prototypes:
i) Sigprocmask ii) Sigaction iii) Sigsetjmp iv) kill. (10 Marks)
- b. What are Daemon processes? Explain the Daemon characteristics and coding rules. (10 Marks)
- 7 a. What are pipes? List the two limitations of pipes. Explain how to create a pipe. Write a program to send data from parent to child over a pipe. (10 Marks)
- b. Explain how client and server will communicate using FIFOs. (05 Marks)
- c. Explain the following functions related to message queues:
i) msgget ii) msgsnd (05 Marks)
- 8 a. Explain the following socket programming functions with their prototypes:
i) socket ii) connect iii) listen iv) accept. (10 Marks)
- b. Explain the different functions which will be used for exchanging data on sockets. (10 Marks)

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Fifth Semester B.E. Degree Examination, June/July 2011
Network Management System

Time: 3 hrs.

Max. Marks:100

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

PART - A

- 1 a. Discuss the importance of communication protocols and standards. Write the basic communication architecture. (08 Marks)
- b. Explain the sub layer structure of network protocol layer. (07 Marks)
- c. What are the limitations of current network management systems? (05 Marks)

- 2 a. Explain the salient features of various network management standards. (10 Marks)
- b. Differentiate explicit and implicit mode of tagging with example. (06 Marks)
- c. Explain the structure of ASN.1 macro. (04 Marks)

- 3 a. Explain TLV encoding structure with example. (06 Marks)
- b. Explain the three tier organization model. (04 Marks)
- c. Explain SNMP network management architecture. (10 Marks)

- 4 a. Explain in brief SNMP ASN.1 data types. (09 Marks)
- b. Explain Get-Next-Request operation with an example. (06 Marks)
- c. Explain the structure of managed object. (05 Marks)

PART - B

- 5 a. What is remote monitoring? What are its advantages? (06 Marks)
- b. Explain RMON1 textual conventions. (05 Marks)
- c. How is remote monitoring of ATM devices is difficult as compared to remote monitoring of Ethernet s token ring? Explain different ATM probe locations. (09 Marks)

- 6 a. Explain the layered architecture of LAN emulation. (07 Marks)
- b. Explain M3 interface. (07 Marks)
- c. Explain Virtual path – Virtual circuit with an example. (06 Marks)

- 7 a. Explain broadband LAN architecture. (06 Marks)
- b. Explain ADSL channeling schemes. (06 Marks)
- c. Explain the protocol layer architecture in HFC system. (08 Marks)

- 8 a. Explain rule based reasoning correlation technique. (10 Marks)
- b. Explain network performance parameters. (05 Marks)
- c. Briefly explain five-step process of fault management. (05 Marks)

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06CS63

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

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions choosing
atleast TWO questions from each part.**

PART – A

- 1 a. How to handle reserved words and identifiers during recognition of tokens? Explain. (07 Marks)
- b. Discuss three types of software productivity tools. (06 Marks)
- c. Enlist algebraic laws for regular expression. (07 Marks)
- 2 a. Consider the production given below :
 $S \rightarrow CC \mid CSC$
 Prof. James wanted to parse input string CCCCCC, using recursive descent parsing. Is it possible to do that? Justify your answer. (04 Marks)
- b. Remove left recursion from the grammar given below :
 $S \rightarrow (M) \mid a$
 $M \rightarrow M ; S \mid S.$ (04 Marks)
- c. Enlist the conditions to test whether a given grammar is LL(1). (03 Marks)
- d. Construct predictive parsing table for the following grammar
 $S \rightarrow a AB b$
 $A \rightarrow A c \mid \epsilon$
 $B \rightarrow d \mid \epsilon.$ (09 Marks)
- 3 a. Write an algorithm for computation of CLOSURE of LR(0). (02 Marks)
- b. Construct LR(0) parsing table for the following grammar
 $S \rightarrow Ac$
 $A \rightarrow AB \mid \epsilon$
 $B \rightarrow a B 1 b.$ (10 Marks)
- c. Consider the grammar $A \rightarrow (A) \mid a$. Construct the DFA of sets of LR(0) items. Show the parsing actions for the input string ((a)). Clearly show states and symbols on the stack. (08 Marks)
- 4 a. Consider
 $S \rightarrow id \mid V := E$
 $V \rightarrow id$
 $E \rightarrow V \mid n$
 Construct canonical LR(1) parsing table. (14 Marks)
- b. Write a YACC specification for desk calculator with error recovery. (06 Marks)

PART – B

- 5 a. Write semantic rules to compute $5 * 6$, using a grammar suitable for top down parsing. (07 Marks)
- b. Give syntax directed definition for simple type declaration. Construct dependency graph for the declaration, int id₁, id₂. (08 Marks)
- c. Write SDD for while statement. (05 Marks)

- 6 a. Describe syntax directed definition for flow of control statements. (10 Marks)
b. Generate three address code for Boolean operations. (10 Marks)
- 7 a. Write intermediate code for the following :
 $a = f(b[i])$. (04 Marks)
b. Explain the procedures to maintain display, with an example. (08 Marks)
c. Discuss the performance metrics to be considered while designing a garbage collector. (08 Marks)
- 8 a. Write machine code equivalent for the following :
 'if $x < y$ goto L' (04 Marks)
b. Write an algorithm for partitioning three address instructions into basic blocks. Consider intermediate code to set a 10×10 matrix to an identity matrix. Apply an algorithm to convert this code into basic blocks. (08 Marks)
c. Discuss the different issues in the design of the function getReg(I). (08 Marks)

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Sixth Semester B.E. Degree Examination, December 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. Explain and derive delays in datagram packet switching and compare it with message switching. (10 Marks)
- b. Consider the network given below in Fig.Q.1(b). Use Dijkstra's algorithm to find shortest paths from source node 5 to all other destination nodes. Find the shortest path tree from node 5 to other nodes. (10 Marks)

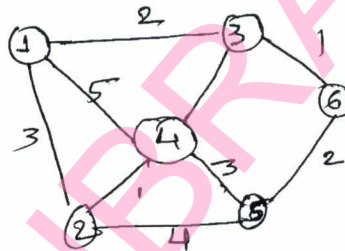


Fig.Q.1(b)

- 2 a. Explain Fair queuing and weighted fair queuing mechanism of traffic management at the packet level. (10 Marks)
- b. A host in an organization has an IP address 150.32.64.34 and subnet mask 255.255.240.0. What is the address of the subnet? What is the range of IP addresses that a host can have on this subnet? (10 Marks)
- 3 a. Explain IPv6 basic header format. (10 Marks)
- b. Explain OSPF common header fields and also OSPF hello packet format. (10 Marks)
- 4 a. Explain BISDN reference model. (06 Marks)
- b. Explain ATM cell header format. (07 Marks)
- c. Briefly explain various QoS parameters and traffic descriptors with respect to ATM networks. (07 Marks)

PART – B

- 5 a. Write a note on structure of management information. (08 Marks)
b. Apply RSA and do the following:
i) Suppose $P = 5$, $q = 11$ find e and d .
ii) Encrypt the following to get the cipher texts $P_1 = 18$, $P_2 = 19$ and $P_3 = 1$.
iii) Decrypt the ciphertexts obtained above. (12 Marks)
- 6 a. Explain VPN and its types based on tunneling. (07 Marks)
b. Explain the various types of resource allocation schemes. (06 Marks)
c. Write a note on overlay networks. (07 Marks)
- 7 a. Explain the session initiation protocol. (10 Marks)
b. Explain Shannon's coding theorem in detail. (10 Marks)
- 8 a. Write a note on the types of attacks in Ad-hoc networks. (06 Marks)
b. Differentiate between intranode and intranode protocols for WSN. (07 Marks)
c. Write a short note on Zigbee technology. (07 Marks)

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Sixth Semester B.E. Degree Examination, December 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 six applications of computer graphics. (06 Marks)
- b. Explain the concept of pinhole camera with appropriate diagrams and equations. (08 Marks)
- c. Explain the pipeline architecture in computer graphics. (06 Marks)
- 2 a. Explain the different types of polygons in OpenGL. (07 Marks)
- b. Write a program in OpenGL to display the following Fig.Q.2(b) on a raster display system. Assume suitable coordinates for the vertices. (08 Marks)

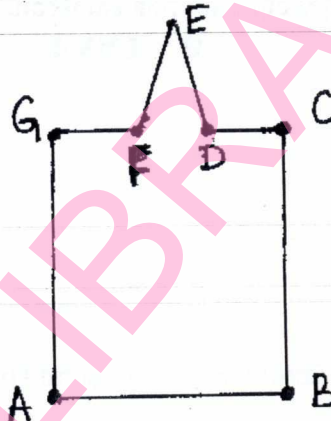


Fig.Q.2(b)

- c. What are two forms of text? Explain. (05 Marks)
- 3 a. Explain the logical classification of I/O devices with examples. (06 Marks)
- b. How are menus and submenus created in OpenGL? Illustrate with an example. (06 Marks)
- c. Using XOR mode of operation, how are erasable lines drawn in OpenGL. Write OpenGL code and explain. (08 Marks)
- 4 a. What are the data structures required to define a cube? (06 Marks)
- b. Write the transformation matrices for 2D translation, rotation and scaling and explain. (06 Marks)
- c. What are vertex arrays? Explain how vertex arrays can be used to model a color cube. (08 Marks)

PART – B

- 5 a. Show that the following sequence commute:
 - i) A rotation and a uniform scaling.
 - ii) Two rotations about the origin

Note: Assume 2D.

(06 Marks)

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Eighth Semester B.E. Degree Examination, June/July 2011
Fuzzy Logic and Applications

Time: 3 hrs.

Max. Marks:100

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

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1 a. Explain the properties of crisp set operations. (10 Marks)
 b. Show the isomorphism between set theory, Boolean algebra and propositional logic. (10 Marks)

2 a. Give the fuzzy set intersection operation from Yager class For $w = 1$ and $w = 2$. (10 Marks)
 b. Prove that the Axioms C1 through C4 are satisfied by the Fuzzy complement. (10 Marks)

3 a. For the sets x & y , explain the different binary relation applications with representation in membership matrix & sagittal diagram. (10 Marks)
 b. Explain the concept of morphisms with different examples. (10 Marks)

4 a. Define the fundamental concept associated with partial orderings, and explain the properties it satisfies. (10 Marks)
 b. Determine the transitive max-min closure $R_T(x, x)$ for a fuzzy relation $R(x, x)$ defined by the membership matrix

$$m_R = \begin{bmatrix} 0.7 & 0.5 & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0.4 & 0 & 0 \\ 0 & 0 & 0.8 & 0 \end{bmatrix}$$

5 a. Explain the necessity and possibility measures and give the relation between them. (10 Marks)
 b. Give the diagrammatic representation of the inclusion relationship among the main classes of fuzzy measures. (10 Marks)

6 a. Prove that the most fundamental property of probability measure as a special types of belief measures. (10 Marks)
 b. Explain the belief measure functions with example. (10 Marks)

7 a. Explain the major components of a fuzzy controller with a neat diagram. (10 Marks)
 b. Describe the application of fuzzy relation in meteorology. (10 Marks)

8 a. Show that joint probability distribution derived from a set of loop less marginal distributions are the maximum entropy joint distribution. (10 Marks)
 b. Describe how the fuzzy set and relations are involved in medical diagnosis. (10 Marks)

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PART - B

(10 Marks)

PART - A

- b. In two dimensions, we can specify a line by the equation $y = mx + h$. Find an affine transformation to reflect two dimensional points about this line. (06 Marks)
- c. Write an OpenGL program to rotate a triangle whose vertices are A(0, 0), B(0, 0), C(5, 10) about the reference point (5, 10) by 45° . Use builtin OpenGL functions for transformations. (08 Marks)
- 6 a. Derive the perspective projection matrix. (08 Marks)
- b. Explain glFrustum (..) API with syntax. (08 Marks)
- c. Bring out the differences between object-space algorithms and image space algorithms. (04 Marks)
- 7 a. Explain the different types of light sources in graphics. (10 Marks)
- b. Explain with code the approximation of a sphere by recursive subdivision. (10 Marks)
- 8 a. Explain the Cohen-Sutherland line clipping algorithm. (10 Marks)
- b. Explain the Z-buffer algorithm for hidden surface removal. How do you enable the Z-buffer algorithm in OpenGL? (10 Marks)

Fifth Semester B.E. Degree Examination, June/July 2011

Programming Languages

Time: 3 hrs.

Max. Marks: 100

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

PART - A

- 1 a. Why are there so many programming languages? (06 Marks)
- b. What makes a programming language successful? (06 Marks)
- c. What is binding and binding time? Explain various binding times with suitable examples. (08 Marks)

- 2 a. Discuss on subroutine closures, first and second class subroutines in the bindings of referencing environments. (08 Marks)
- b. Explain the difference between prefix, infix and postfix notation. What is Cambridge polish notation? Name two programming languages those uses postfix notation. (06 Marks)
- c. What is short circuit Boolean evaluation? Why is it useful? Explain with suitable examples. (06 Marks)

- 3 a. What is tail-recursive function? Explain the tail-recursive function for finding gcd. Why is tail recursion important? (06 Marks)
- b. Explain with examples mid test, pre test and post test loop. (06 Marks)
- c. Describe the various "iteration count" loop implementation methods. (08 Marks)

- 4 a. Explain numeric, Enumeration, sub range and composite types in various programming languages. (08 Marks)
- b. What is type inference? Describe three contexts in which it occurs. (07 Marks)
- c. What is the difference between type equivalence and type compatibility? (05 Marks)

PART - B

- 5 a. What is dangling reference? Explain dangling reference detection using Tomstones, Locks and Keys. (10 Marks)
- b. What is Garbage collection? Explain reference count and tracing collection as a means of solving Garbage collection. (10 Marks)
- a. Describe the four common parameter passing modes. (08 Marks)
- b. What is subroutine calling sequence? What does it do? What is meant by the sub routine prologue and epilogue? (06 Marks)

- 7 a. What are generally considered to be the five defining characteristics of object oriented programming? (05 Marks)
- b. Explain multiple inheritance, repeated inheritance, replicated inheritance and shared inheritance with an example and list the semantic and pragmatic issues associated with multiple inheritance. (10 Marks)
- a. Describe the following list manipulating function with an example for each cdr, cons, car, wnd. (03 Marks)
- b. Explain the difference between let, let* and letrec in scheme. (07 Marks)
- c. What are following with respect to logic programming? (10 Marks)

- 8 a. Describe the following list manipulating function with an example for each cdr, cons, car, wnd. (03 Marks)
- b. Explain the difference between let, let* and letrec in scheme. (07 Marks)
- c. What are following with respect to logic programming? (10 Marks)

- i) Horn clause. (10 Marks)
- ii) Resolution and unification. (10 Marks)
- iii) Terms in prolog. (10 Marks)
- iv) Structure in prolog. (10 Marks)

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Sixth Semester B.E. Degree Examination, December 2012
Operations Research

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 operations research? Mention six phases of an operations research study. (06 Marks)
- b. Old hens can be bought at Rs.50/- each but young ones cost Rs.100/- each. The old hens lay 3 eggs/week and young hens 5 eggs/week. Each egg cost Rs.2/- A hen costs Rs.5/- per week to feed. If a person has only Rs.2000/- to spend for hens, formulate the problem to decide how many of each kind of hen should he buy? Assume that he cannot house more than 40 hens. (07 Marks)
- c. Solve the following L.P.P. graphically,
Maximize $z = 100x_1 + 40x_2$
Subject to $5x_1 + 2x_2 \leq 1000$
 $3x_1 + 2x_2 \leq 900$
 $x_1 + 2x_2 \leq 500$ and
 $x_1, x_2 \geq 0$ (07 Marks)
- 2** a. Mention five assumptions of linear programming. (05 Marks)
- b. Define and illustrate with examples slack variables and surplus variables. (04 Marks)
- c. Solve the following LPP:
Maximize $z = 15x_1 + 6x_2 + 9x_3 + 2x_4$
Subject to $2x_1 + x_2 + 5x_3 + 6x_4 \leq 20$
 $3x_1 + x_2 + 3x_3 + 25x_4 \leq 24$
 $7x_1 + x_4 \leq 70$
 $x_1, x_2, x_3 \geq 0$ (11 Marks)
- 3** a. Explain two phase technique to solve LPP in simplex method. (06 Marks)
- b. Use Big-M method to solve the following LPP:
Minimize $z = 4x_1 + 3x_2$
Subject to $2x_1 + x_2 \geq 10$
 $-3x_1 + 2x_2 \leq 6$
 $x_1 + x_2 \geq 6$
and $x_1, x_2 \geq 0$ (14 Marks)
- 4** a. What are the important characteristics of duality? (05 Marks)
- b. Explain the conceptual procedure of revised simplex method in standard form. (10 Marks)

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- 4 c. Write the dual of the following LPP:

$$\text{Minimize } z = 3x_1 - 6x_2 + 4x_3$$

$$\text{Subject to } 4x_1 + 3x_2 + 6x_3 \geq 9$$

$$x_1 + 2x_2 + 3x_3 \geq 6$$

$$6x_1 - 2x_2 - 2x_3 \leq 10$$

$$x_1 - 2x_2 + 6x_3 \geq 4$$

$$2x_1 + 5x_2 - 3x_3 \geq 6$$

$$x_1, x_2, x_3 \geq 0$$

(05 Marks)

PART – B

- 5 a. Explain sensitivity analysis.

(08 Marks)

- b. Use the dual simplex method to solve the following LPP:

$$\text{Maximize } z = -2x_1 - 2x_2 - 4x_3$$

$$\text{Subject to } 2x_1 + 3x_2 + 5x_3 \geq 2$$

$$3x_1 + x_2 + 7x_3 \leq 3$$

$$x_1 + 4x_2 + 6x_3 \leq 5$$

$$\text{and } x_1, x_2, x_3 \geq 0$$

(12 Marks)

- 6 a. Explain different steps in Hungarian algorithm to solve an assignment problem. (08 Marks)

- b. Find the optimal transportation cost of the following matrix by using least cost method. (12 Marks)

	A	B	C	D	E	Supply
P	4	1	2	6	9	100
Q	6	4	3	5	7	120
R	5	2	6	4	8	120
Demand	40	50	70	90	90	

- 7 a. Solve the game whose pay off matrix is given by,

(08 Marks)

		A		
		I	II	III
B	I	2	-1	8
	II	-4	-3	4
	III	-8	-4	0
	IV	1	-6	-2

- b. Explain the following:

i) Minimax and maximin principles.

ii) Pure and mixed strategies.

iii) Two person zero sum game.

iv) Dominance principles.

(12 Marks)

- 8 a. Give a note on basic simulated annealing algorithm. (05 Marks)

b. Write an outline of a basic genetic algorithm. (05 Marks)

c. Explain table search algorithm. (05 Marks)

d. Explain decision trees. (05 Marks)

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06IS63

Sixth Semester B.E. Degree Examination, December 2012
File Structures

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. Differentiate between physical file and logical file systems. (02 Marks)
- b. Given, a class of car with data members CAR {string model, string EngNo, string RegNo} and number functions ReadCar Info () and Display Car Info (); write a C++ program for i) creating a file and writing 'n' records into it; ii) display all car records from the file. (08 Marks)
- c. Explain strengths and weaknesses of CD-ROM. (10 Marks)
- 2 a. Explain with example the different ways of structuring i) fields; ii) records. (10 Marks)
- b. Explain how record blocking improves the performance of sequential search. (05 Marks)
- c. List the UNIX tools for sequential processing with example explain their working. (05 Marks)
- 3 a. Define internal and external fragmentation compare the 3 placement strategies. (05 Marks)
- b. What is an Index? Explain the operations required to maintain an indexed file. (10 Marks)
- c. Explain in brief the 2 solutions for improving the secondary index structure. (05 Marks)
- 4 a. Briefly explain the different methods used to sort files on a type. (10 Marks)
- b. Write the suitable assumptions and essential components of consequential processing model. (10 Marks)

PART – B

- 5 a. For the given sequence "T C S D A M P I B W N G U", show how B-tree of order 4, is constructed stepwise. (10 Marks)
- b. What are the properties of B-tree? Explain the process of tree searching procedure. (10 Marks)
- 6 a. Explain the issues in maintenance of simple prefix B⁺ trees. (10 Marks)
- b. Explain the internal structure of index set blocks. (10 Marks)
- 7 a. Brief, how hashing differs from indexing. (04 Marks)
- b. Explain the simple hasing algorithm. (12 Marks)
- c. What is packing density? And why it is needed. (04 Marks)
- 8 Write short notes on:
 - a. Key sorting.
 - b. Data compression.
 - c. Dynamic hashing.
 - d. AVL trees. (20 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

SKIT LIBRARY

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Sixth Semester B.E. Degree Examination, December 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. Define information system and information technology. (06 Marks)
- b. Describe in detail the information framework for business professionals. (07 Marks)
- c. What are the components of information systems? (07 Marks)
- 2 a. List and describe the five basic competitive strategies with a neat diagram. (10 Marks)
- b. What is an agile company? Explain the basic business strategies used in agile company. (10 Marks)
- 3 a. Define e-business. Explain with a neat sketch, the transaction processing cycle in detail. (10 Marks)
- b. Explain marketing information systems with an example. (10 Marks)
- 4 a. Define CRM. With a neat diagram, explain the three phases of CRM. (10 Marks)
- b. What is ERP? Explain the benefits and challenges of ERP. (10 Marks)

PART – B

- 5 a. What is e-commerce? Explain the scope and the categories of e-commerce with an example. (10 Marks)
- b. List and explain different e-commerce success factors. (10 Marks)
- 6 a. Define MIS. Explain the four major reporting alternatives provided by the MIS. (10 Marks)
- b. List the major domain areas of AI and its commercial applications. (10 Marks)
- 7 a. What is hacking? Explain the common hacking tactics to assault the companies. (10Marks)
- b. Explain the goal of security management. List the important security defenses. (10 Marks)
- 8 a. Explain the major components of business/IT planning process and IT architecture. (10 Marks)
- b. Write notes on:
 - i) Global data access issue
 - ii) Internet access issue (10 Marks)

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Seventh Semester B.E. Degree Examination, December 2011

Object Oriented Analysis and Design

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

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|----------|-----------|---|------------|
| 1 | a. | What is an object orientation? Give four reasons why object orientation works. (08 Marks) | (08 Marks) |
| | b. | With suitable examples explain following :
i) Object and identity ; ii) Static and dynamic binding ;
iii) Object persistence ; iv) Meta classes. (08 Marks) | (08 Marks) |
| | c. | List the coad and Yourdon clues for finding candidate classes and objects. (04 Marks) | (04 Marks) |
| 2 | a. | How to achieve high quality in software? List and explain four quality measures for software evaluation. (08 Marks) | (08 Marks) |
| | b. | What is the importance of prototyping? What are the commonly accepted prototyping? What are their strengths? (06 Marks) | (06 Marks) |
| | c. | What are CBD and RAD? Explain. (06 Marks) | (06 Marks) |
| 3 | a. | Describe Object Modeling Technique (OMT) (08 Marks) | (08 Marks) |
| | b. | What are patterns and antipatterns? What are the significances of generative patterns? Explain how to capture a pattern. (08 Marks) | (08 Marks) |
| | c. | Define framework. List major differences between patterns and frameworks. (04 Marks) | (04 Marks) |
| 4 | a. | What are the advantages of modeling? What elements a modeling language must include? (06 Marks) | (06 Marks) |
| | b. | Write the UML sequence and collaboration diagrams for telephone call. (08 Marks) | (08 Marks) |
| | c. | Draw an activity diagram for processing mortgage requests. (06 Marks) | (06 Marks) |
| 5 | a. | What are the advantages of developing business process model? With the example of library members activities, explain how an activity diagram aids in developing use case. (10 Marks) | (10 Marks) |
| | b. | Jacobson et.al. definition of use case "A use case is a sequence of transitions in a system whose task is to yield results of measurable value to an individual actor of the system". Explain the definition and the keywords in it. (05 Marks) | (05 Marks) |
| | c. | What is object classification? What are the different approaches for identifying classes? Explain each briefly. (05 Marks) | (05 Marks) |
| 6 | a. | How the classes are identified using common class pattern approach? Explain. (06 Marks) | (06 Marks) |
| | b. | For Vianet ATM bank system, develop sequence diagram for. Deposit checking use – case. What is an association? How do you identify associations? Explain how to eliminate unnecessary associations. (06 Marks) | (06 Marks) |
| | c. | What are coupling and cohesion of objects/software components? Write a note on class visibility. (06 Marks) | (06 Marks) |
| 7 | a. | What are coupling and cohesion of objects/software components? Explain UML attribute presentation. Draw complete UML class diagram for Vianet bank system. (08 Marks) | (08 Marks) |
| | b. | Discuss the four major activities of designing view layer classes. (08 Marks) | (08 Marks) |
| | c. | Describe the guidelines for designing application windows. (04 Marks) | (04 Marks) |
| 8 | a. | What is OODBMS? Explain. Discuss the differences between OODBMS and traditional databases. (08 Marks) | (08 Marks) |
| | b. | Discuss the four major activities of designing view layer classes. (08 Marks) | (08 Marks) |
| | c. | Describe the guidelines for designing application windows. (04 Marks) | (04 Marks) |

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