

USN

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

06AL61

Sixth Semester B.E. Degree Examination, December 2011
Management and Entrepreneurship

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. Explain the management process which stresses on the basic management functions. (08 Marks)
- b. What kinds of skills are required for manager to become successful? How do you associate different levels in an organization? (06 Marks)
- c. Explain the modern management approach briefly. (06 Marks)
- 2 a. Explain the vital reasons, which suggest the importance of planning. (06 Marks)
- b. What is planning? Differentiate between strategic planning and tactical planning. (04 Marks)
- c. Illustrate with example, decision tree technique to analyze a decision. Differentiate between procedure and policy. (10 Marks)
- 3 a. What is appropriate span of control? Brief out factors which affect span of management. (10 Marks)
- b. What is departmentation? Mention types and explain the departmentation, by geographic area giving its advantages. (06 Marks)
- c. Explain the role of staffing in an organization. (04 Marks)
- 4 a. Using Maslow's theory of motivation, explain the hierarchy of needs. (06 Marks)
- b. Explain the important essentials of sound control system. (06 Marks)
- c. Give the importance of communication. Highlight different ways to achieve co-ordination. (08 Marks)

PART – B

- 5 a. What are the measures taken in India to develop entrepreneurship? (06 Marks)
- b. Differentiate between entrepreneur and Intrapreneur. (06 Marks)
- c. What keeps today's youth away from entrepreneurship? (08 Marks)
- 6 a. What are the characteristics of small enterprises? (06 Marks)
- b. Discuss the effect of agreement under W.T.O. What is the impact of liberalization, privatization and globalization on small enterprise? (10 Marks)
- c. What are the objectives of KCTU? What are its major activities? (04 Marks)
- 7 a. Explain the role of TECSOK in promotion of small enterprise in Karnataka. (08 Marks)
- b. Explain the important activities in establishing small enterprise, with the help of KSSIDC. (06 Marks)
- c. Explain the role of KSFC in promotion of small enterprise. (06 Marks)
- 8 a. What is a project? Explain the required criteria in selecting a project. (06 Marks)
- b. Differentiate between PERT and CPM. (06 Marks)
- c. Explain the steps followed in project appraisal. (08 Marks)

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.

USN

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

06CS63

Sixth Semester B.E. Degree Examination, December 2011
Compiler Design

Time: 3 hrs.

Max. Marks:100

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

PART - A

- 1 a. With a neat diagram, explain the different phases of compilation. (10 Marks)
 b. Explain input buffering strategy, used in lexical analysis phase. (10 Marks)
- 2 a. Write the transition diagram for an unsigned number. (04 Marks)
 b. Show that the following grammar is ambiguous: $E \rightarrow E + E \mid E * E \mid (E) \mid id$.
 Write an unambiguous grammar for the same. (06 Marks)
 c. Write a recursive descent parser for the grammar : $S \rightarrow cAd \mid A \rightarrow ab/a$ and for the input 'cad' trace the parser. (10 Marks)
- 3 a. Construct the predictive parse table for the following grammar :
 $S \rightarrow a \mid \uparrow(T)$
 $T \rightarrow T, S \mid S$ (10 Marks)
 b. Explain the working of a shift reduce parser. (05 Marks)
 c. Explain handle pruning. Explain the same for the grammar $E \rightarrow E + E \mid E * E \mid (CE) \mid id$ and the input string is $id1 + id2 * id3$. (05 Marks)
- 4 a. Consider the following grammar :
 $S \rightarrow AS \mid b$
 $A \rightarrow SA \mid a$
 Construct the SLR parse table for the grammar. Show the actions of the parser, for the input string "abab". (10 Marks)
 b. Construct the CLR parse table for the following grammar :
 $S \rightarrow CC$
 $C \rightarrow cC \mid d$ (10 Marks)

PART - B

- 5 a. Define the following with examples :
 Synthesized attribute
 Inherited attribute
 S – attributed definitions
 L – attributed definitions. (08 Marks)
 b. Explain the parser stack implementation of post fix SDT, with an example. (08 Marks)

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.

- c. For the SDD shown below :

Production	Semantic rules
$L \rightarrow E_n$	$L.val = E.val$
$E \rightarrow E_1 + T$	$E.val = E1.val + T.val$
$E \rightarrow T$	$E.val = T.val$
$T \rightarrow T1 * F$	$T.val = T1.val * F.val$
$T \rightarrow F$	$T.val = F.val$
$F \rightarrow (E)$	$F.val = E.val$
$F \rightarrow \text{digit}$	$F.val = \text{digit.lexval}$

construct the annotated parse tree for $3 * 5 + 4n$.

(04 Marks)

- 6 a. Explain the following, with an example :
- Quadruples
 - Triples
 - Indirect triples.
- b. Write an algorithm for the unification of a pair of nodes in a type graph.
- c. Explain syntax directed translation of switch statements.
- 7 a. What is an activation record? Explain its possible structure.
- b. Explain the design goals for garbage collector.
- c. Explain the desirable properties of memory manager.
- 8 a. What is next use information? Write an algorithm to determine the liveness and next use info for each statement in a basic block. Apply the same for the following basic block :
- $T1 = \text{Add}(A) - 4$
 - $T2 = 4 * i$
 - $T3 = T1 [T2]$
 - $\text{Sum} = \text{Sum} + T3$
 - $I = I + 1$
 - If $I \leq 20$ go to 3
- b. Generate the intermediate code for the statement: $\text{sum} = A [i, j] + B [i, j]$. Construct DAG and simplify the code.

(12 Marks)

(08 Marks)

USN

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

06CS64

Sixth Semester B.E. Degree Examination, December 2011
Computer Networks – II

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. Differentiate between connection oriented and connectionless services. (04 Marks)
b. Compare the datagram packet switching and virtual circuit packet switching. (06 Marks)
c. Define routing algorithm. Explain the Bellman – Ford algorithm, with an example. (10 Marks)
- 2 a. Differentiate between the leaky bucket and token bucket algorithms for congestion control. (08 Marks)
b. What are all the possible subnet masks for the class C address space? List all the subnet masks on dotted – decimal notation, and determine the number of hosts per subnet supported for each subnet mask. (06 Marks)
c. With an example, explain the classless interdomabin routing. (06 Marks)
- 3 a. Define funneling. Briefly explain the changes from IPv4 to IPv6. (08 Marks)
b. Explain the three – way handshake for establishing a TCP connection. (08 Marks)
c. Write a short note on routing information protocol. (04 Marks)
- 4 a. Explain any five QoS parameters of ATM networks. (10 Marks)
b. Briefly explain ATM addressing with ATM formets. (05 Marks)
c. Write a note on classical IP over ATM. (05 Marks)

PART – B

- 5 a. Define the network management. Explain the SNMP with SNMP messages. (08 Marks)
b. Explain the routing table poisoning and denial – of – service attacks. (08 Marks)
c. For an RSA encryption of a 4 – bit message 1001 with a = 3 and b = 11, find the public and private keys. (04 Marks)
- 6 a. With a neat diagram, explain the differentiated services QoS. (08 Marks)
b. Explain the various types of resource allocation schemes. (06 Marks)
c. Define VPN. Discuss the concept of tunneling and point – to – point protocol in VPN. (06 Marks)
- 7 a. Briefly explain the MPEG standards and frame types for compression. (06 Marks)
b. Explain the Huffman encoding, with an example. (06 Marks)
c. With a neat diagram, explain the H.323 components and list the steps in signaling. (08 Marks)
- 8 a. Explain the wireless routing protocol for AD – Hoc networks. (05 Marks)
b. Briefly explain the direct and multihop routing of intracluster routing protocol, with the help of relevant diagrams. (06 Marks)
c. Write short notes on :
i) Clustering in sensor networks
ii) Security vulnerabilities of AD – Hoc networks. (09 Marks)

* * * * *

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.

USN

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

06CS65

Sixty Semester B.E. Degree Examination, December 2011
Computer Graphics and Visualization

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. With a neat diagram, explain the components of a graphics system. (06 Marks)
b. With a neat diagram, explain the human visual system. (06 Marks)
c. In an API, a block box, explain the major groups of functions. (08 Marks)
- 2 a. With a neat diagram, discuss the color formation. Explain the additive and subtractive colors, indexed color and color solid concept. (12 Marks)
b. What are the control functions? Explain with examples. (08 Marks)
- 3 a. Which are the six classes of logical input devices? Explain. (06 Marks)
b. Discuss the request mode, sample mode and event modes, with the figures wherever required. (08 Marks)
c. Write a program, to draw a rotating square. (06 Marks)
- 4 a. Explain the translation, rotation and scaling with the suitable figures. (10 Marks)
b. Discuss the frames in open GL. (10 Marks)

PART – B

- 5 a. How do you achieve affine transformations by concatenation? Discuss. (10 Marks)
b. What are quaternions? With an example, explain its mathematical representations. (10 Marks)
- 6 a. With suitable sketches, explain the various kinds of views in computer graphics system. (10 Marks)
b. Discuss the polygonal shading and its types. (10 Marks)
- 7 a. Explain the phong lighting model. (10 Marks)
b. How is approximation of a sphere done by recursive subdivision? (10 Marks)
- 8 a. Explain the Cohen – Sutherland clipping. (10 Marks)
b. Explain the Anti – aliasing, with its types. (10 Marks)

* * * * *

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.

--	--	--	--	--	--	--	--	--	--

Sixth Semester B.E. Degree Examination, December 2011
Operations Research

Time: 3 hrs.

Max. Marks:100

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

- 1 a. What is operations research? Explain the impact of OR. (06 Marks)
- b. A farmer has 100 acre farm. He can sell all tomatoes, lettuce, or radishes he can raise. The price he can obtain is ₹1.00 per kg for tomatoes, ₹0.75 a head for lettuce and ₹2.00 per kg for radishes. The average yield per acre is 2000kg of tomatoes, 3000 heads of lettuce and 1000kg of radishes. Fertilizer is available at ₹0.50 per kg and the amount required per acre is 100kg each for tomatoes and lettuce and 50kg for radishes. Labour required for sowing, cultivating and harvesting per acre is 5 man-days for tomatoes and radishes and 6 man-days for lettuce. A total of 400 man-days of labour are available at ₹20.0 per man-day. Formulate this problem as a linear programming model to maximize the farmer's total profit. (06 Marks)
- c. Old hens can be bought at ₹2 each and young ones at ₹5 each. The old hens lay 3 eggs per week and the young ones lay 5 eggs per week, each egg being worth 30 paise. A hen (young or old) costs ₹1 per week to feed. You have only ₹80 to spend for buying hens. How many of each kind should you buy to give a profit of more than ₹6 per week assuming that you cannot house more than 20 hens. Formulate the problem as an LPP and solve graphically. (08 Marks)
- 2 a. TOYCO assembles three types of toys – trains, trucks and cars, using three operations. The daily limits on the available times for the three operations are 430, 460 and 420 minutes respectively, and the revenues per unit of toy train, truck and car are \$3, \$2 and \$5 respectively. The assembly times per train at the three operations are 1, 3 and 1 minutes respectively. The corresponding times per truck and per car are (2, 0, 4) and (1, 2, 0) minutes (a zero time indicate that the operation is not used). Formulate the problem as LPP and solve using the simplex method. (10 Marks)
- b. Explain the special cases that arise in the use of simplex method. (10 Marks)
- 3 a. Solve the problem, using the Big-M method.
Maximize $Z = 6x_1 + 4x_2$
Subject to constraints, $2x_1 + 3x_2 \leq 30$; $3x_1 + 2x_2 \leq 24$; $x_1 + x_2 \geq 3$; $x_1 \geq 0$; $x_2 \geq 0$
Find at least two solutions. (10 Marks)
- b. Food X contains 6 units of vitamin A per gram and 7 units of vitamin B per gram and costs 12 paise per gram. Food Y contains 8 units of vitamin A per gram and 12 units of vitamin B per gram and costs 20 paise per gram. The daily minimum requirements of vitamin A and vitamin B are 100 units and 120 units respectively. Find the minimum cost of the product mix. Formulate the problem and solve using the two phase method. (10 Marks)
- 4 a. Use the revised simplex method to solve the following LPP:
Maximize $Z = 6x_1 - 2x_2 - 3x_3$
Subject to constraints, $2x_1 - x_2 + 2x_3 \leq 2$; $x_1 + 4x_3 \leq 4$; $x_1, x_2, x_3 \geq 0$. (10 Marks)
- b. Obtain the dual solution directly, using the inverse from solution of the primal.
Maximize $Z = 5x_1 + 2x_2 + 3x_3$
Subject to constraints, $x_1 + 5x_2 + 2x_3 = 30$; $x_1 - 5x_2 - 6x_3 \leq 40$; $x_1, x_2, x_3 \geq 0$. (10 Marks)

PART – B

- 5 a. Explain the parametric analysis with respect to change in c_j and b_j parameters. (08 Marks)
- b. Obtain the optimal solution, using the dual simplex method for the dual problem of the following:
Maximize $Z = 3x_1 + 5x_2$
Subject to constraints, $x_1 \leq 4$; $2x_2 \leq 12$; $3x_1 + 2x_2 \leq 18$; $x_1 \geq 0, x_2 \geq 0$. (12 Marks)

- 6 a. A department has five employees with five jobs to be performed. The time (in hours) each men will take to perform each job is given in the effectiveness matrix.

		Employees				
		I	II	III	IV	V
Jobs	A	10	5	13	15	16
	B	3	9	18	13	6
	C	10	7	2	2	2
	D	7	11	9	7	12
	E	7	9	10	4	12

How should the jobs be allocated? One per employee, so as to minimize the total man hours. Use the Hungarian method. (10 Marks)

- b. The following table shows all the necessary information on the availability of supply to each warehouse, the requirement of each market and unit transportation cost (in ₹) from each warehouse to each market.

		Market				Supply
		P	Q	R	S	
Warehouse	A	6	3	5	4	22
	B	5	9	2	7	15
	C	5	7	8	6	8
Demand		7	12	17	9	45

The shipping clerk has worked out the following schedule from experience. 12 units from A to Q, 1 unit from A to R, 8 units from A to S, 15 units from B to R, 7 units from C to P and 1 unit from C to R.

- i) Check and see if the clerk has the optimal schedule. (10 Marks)
 ii) Find the optimal schedule and minimum total transport cost. (10 Marks)
- 7 a. Solve the game whose pay-off matrix to the player A is given in the table. (10 Marks)

		B		
		I	II	III
A	I	1	7	2
	II	6	2	7
	III	5	2	6

- b. What is a decision tree? How a decision tree is constructed? Raman Industries Ltd. has a new product which they expect has great potential. At the moment they have two courses of action open to them. S_1 = To test the market and S_2 = To drop the product. If they test it, it will cost ₹50,000 and the response could be positive or negative with probabilities of 0.70 and 0.30 respectively. If it is positive, they could either market it with full scale or drop the product. If they market with full scale, then the result might be low, medium or high demand and the respective net pay-offs would be ₹100000, ₹100000 or ₹500000. These outcomes have probabilities of 0.25, 0.55 and 0.20 respectively. If the result of the test marketing is negative, they have decided to drop the product. If at any point, they drop the product, there is a net gain of ₹25,000 from the sale of scrap. All financial values have been discounted to the present. Draw a decision tree for the problem and indicate the most preferred decision. (10 Marks)

- 8 a. Consider the following Fig.Q8(a), where the dashed lines represent the potential links that could be inserted into the network and the number next to each dashed line represents the cost associated with inserting that particular link.

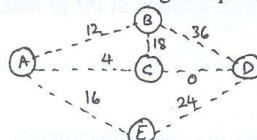


Fig.Q8(a)

Constraint 1 : No more than one of the three links AB, BC and AE can be included

Constraint 2 : Link AB can be included only if link BD also included.

Starting with the initial solution where the inserted links are AB, AC, AE and CD, apply the basic Tabu search algorithm to find the best solution. (10 Marks)

- b. Write short notes on: i) Simulated annealing technique ii) Genetic algorithm. (10 Marks)
