[4370] – 563

Seat No.	

M.C.A. (Commerce Faculty) (Semester – V) Examination, 2013
503 : E-COMMERCE PRACTICES AND TECHNOLOGIES

Time : 3 Hours Max. Marks : 80

***Instructions**: 1) **All** questions are **compulsory**.*

*2) **All** questions carry **equal** marks.*

1. Attempt **any four** of the following : **(4×4=16)**
   a) What is E-commerce ? Why there is need to study E-commerce ?
   b) Describe any four key elements of a business model.
   c) Explain different personalization approaches.
   d) What types of products are well suited for an auction market ? At what points in the product life cycle can auction market prove beneficial for marketers ?
   e) What are tiger teams, who uses them and what are some of the tactics they use in their work ?

2. Attempt **any four** of the following : **(4×4=16)**
   a) Write a note on :
      A) Digital wallets
      B) Digital cash
   b) How Digital Certificate fulfills all security dimensions of E-commerce ? Explain.
   c) Explain planning, analysis of E-commerce website.
   d) Explain types of portals with example.
   e) Explain eight most important factors in successful E-commerce site design.

3. Attempt **any four** of the following : **(4×4=16)**
   a) How to test an E-commerce Web-site ?
   b) Explain eight unique features of E-commerce.
   c) What are online stored value systems ? Explain any 2 online stored value systems.

P.T.O.

d) Describe the differences between three major types of malicious code-script, file-infecting and macro-viruses.

e) Write a note on :
   A) Encryption
   B) Digital Envelopes.

4. Attempt **any four** of the following : **(4×4=16)**

a) Write a note on credit-card fraud and how to minimize the fraud.

b) Compare traditional Vs Electronic payment system.

c) Explain M-commerce business model in detail.

d) List and explain benefits of auction markets.

e) Explain the ways of protecting internet communications.

5. Attempt **any two** of the following : **(2×8=16)**

a) Explain-Paypal remains ahead of 'Peet-to-Peer payment service.

b) Why do people older than 21 tend to use legitimate downloading sites whereas younger people tend to use illegal sites ?

c) Why are cell-phone networks a threat to Pay-Pal's future growth ?

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Seat No.	

M.C.A. (Commerce Faculty) (Semester – V) Examination, 2013
506 : OPERATIONS RESEARCH

Time : 3 Hours Max. Marks : 80

N.B. : *1) **All** questions are **compulsory**.*
*2) Figures to the **right** indicate **full** marks.*
*3) **Use** of statistical tables and calculator is allowed.*
4) Symbols have their usual meanings.

1. Attempt **any four** of the following : **16**

a) Discuss scope of Operations Research in Management.

b) Explain the following variables with examples :

i) Slack variable

ii) Surplus variable

iii) Artificial variable.

c) Solve the following game using dominance rule :

$$\begin{array}{c} \\ \text{Player A} \end{array} \begin{array}{c} \text{Player B} \\ \begin{bmatrix} 1 & 3 & 2 & 7 & 4 \\ 3 & 4 & 1 & 5 & 6 \\ 6 & 5 & 7 & 6 & 5 \\ 2 & 0 & 6 & 3 & 1 \end{bmatrix} \end{array}$$

d) Solve graphically the following L.P.P.

Minimize

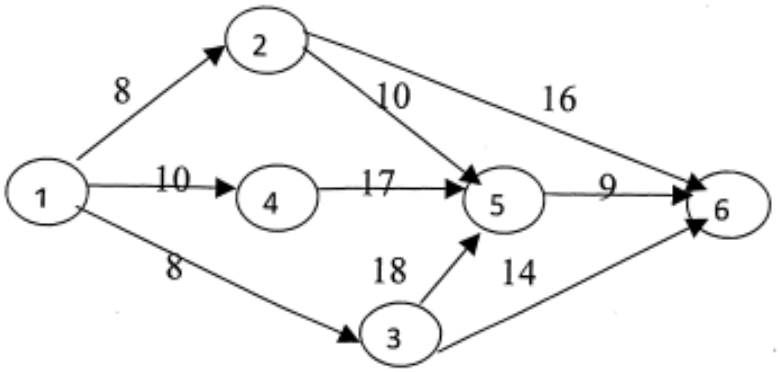
$$Z = 25X_1 + 30X_2$$

Subject to the constraints :

$$4X_1 + 3X_2 \geq 60$$
$$2X_1 + 3X_2 \geq 36$$
$$X_1, X_2 > 0.$$

P.T.O.

e) For the following network identify the critical path.



f) Obtain initial basic feasible solution using North – West corner method for following transportation problem.

Markets → Sources ↓	**D_1**	**D_2**	**D_3**	**D_4**	**Supply**
O_1	19	30	50	10	7
O_2	70	30	40	60	9
O_3	40	8	70	20	18
Demand	5	8	7	14	34

Also find the corresponding transportation cost.

2. Attempt **any four** of the following : **16**

a) Explain the following with reference to L.P.P.

i) Entering Variable

ii) Leaving Variable

iii) Pivot element

b) Define :

i) activity

ii) arc

iii) node

iv) network

c) Obtain the dual problem of the following L.P.P.

Minimize $Z = X_1 + X_2 + X_3$

Subjected to constraints :

$$X_1 - 3X_2 + 4X_3 = 5$$

$$X_1 - 2X_2 \leq 3$$

$$2X_1 - X_3 \geq 1$$

$$X_1, X_2, X_3 \geq 0$$

d) Consider the following game

$$\begin{array}{c} \\ \text{Player A} \end{array} \begin{array}{c} \text{Player B} \\ \begin{bmatrix} 3 & -5 & 0 & 6 \\ -4 & -2 & 1 & 2 \\ 5 & 4 & 2 & 3 \end{bmatrix} \end{array}$$

Obtain saddle point. Also state optimal strategy for Player A and Player B.

e) Solve the following minimization assignment problem.

*	I	II	III	IV
A	1	4	6	3
B	9	7	10	9
C	4	5	11	7
D	8	7	8	5

f) Obtain initial basic feasible solution using Least cost method for following transportation problem.

Markets → Factory ↓	**D_1**	**D_2**	**D_3**	**Supply**
O_1	0	2	1	9
O_2	2	1	5	6
O_3	2	4	3	5
Demand	5	5	10	20

Also find the corresponding transportation cost.

3. Attempt **any four** of the following : **16**

a) A firm is engaged in producing two products A and B. Each unit of product A requires 2 kg of raw material and 4 labour hours of for processing whereas each unit of product B requires 3 kg of raw material and 3 labour hours of for processing every week, the firm has availability of 60 kg of raw material and 96 labour hours. One unit of product A and B earns a profit of Rs. 40 and 35 respectively. Formulate the above information as a linear programming problem.

b) Define the following terms with reference to L.P.P.

i) Decision variables

ii) Constraints

iii) Objective function

iv) Optimal solution.

c) Obtain initial basic feasible solution using Vogel's Approximation method for following transportation problem.

Markets → Sources ↓	D_1	D_2	D_3	Supply
O_1	10	7	8	45
O_2	15	12	9	15
O_3	7	8	12	40
Demand	25	55	20	100

Also find the corresponding transportation cost.

d) Explain MODI method to find optimal solution for a T.P.

e) Define float. Explain different types of it.

f) What do you mean by unbalanced Assignment Problem (A.P.) ? How will you convert maximization A.P. to minimization A.P. ?

4. Attempt **any two** of the following : **16**

a) What do you understand by sensitivity analysis ? Explain how it is carried out ?

b) Show that the following Linear Programming Problem has an unbounded solution :

Max $Z = 5X_1 + 6X_2 + X_3$

Subject to

$$9X_1 + 3X_2 - 2X_3 \leq 5$$

$$4X_1 + 2X_2 - X_3 \leq 2$$

$$X_1 - 4X_2 + X_3 \leq 3$$

$X_1, X_2, X_3 \geq 0$.

c) Test whether the solution given in the following transportation matrix is optimal or not ? Find alternate optimal solution if exists. Also find corresponding transportation cost.

*	D_1	D_2	D_3	D_4
O_1	10 (10)	0	20	11 (5)
O_2	1 (2)	7 (8)	9 (15)	20
O_3	12	14	16	18 (5)

5. Attempt **any two** of the following : **16**

a) A company manufactures to products, radio and transistors, which may be processed through assembly and finishing department. The following table shows schedule of manufacturing and profit per unit.

Products	Assembly	Finishing	Profit
Radio	6	3	120
Transistor	3	6	90
Availability	90	72	Z

Determine the best combination of radio and transistors to realize profit of Rs. 2,100/-.

b) 1) Define strategy and also explain what do you mean by pure strategy and mixed strategy ?

2) Discuss the simplex method where it indicate existence of

i) Multiple optimal solution

ii) Infeasible solution.

c) A project has the following activities and other characteristics.

Activity	Time Estimates		
	t_o	t_p	t_m
1 – 2	6	12	9
1 – 5	4	8	7
2 – 3	14	20	17
2 – 4	7	13	10
2 – 5	3	9	5
3 – 7	13	25	18
4 – 6	10	16	14
4 – 7	12	18	15
5 – 6	6	12	11
6 – 7	17	25	20

Draw the project network and calculate variance and expected time for each activity.

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Seat No.	

M.C.A. (Commerce Faculty) (Semester – V) Examination, 2013
501 : CONTENT MANAGEMENT SYSTEM

Time : 3 Hours Max. Marks : 80

Instructions : *1)* ***All*** *questions are* ***compulsory****.*
2) ***Draw*** *the diagrams and screenshots* ***wherever*** *necessary.*

1. Attempt the following (**any four**) : **(4×4=16)**

   a) Explain 'Aggregation' in detail.

   b) Explain-content is named information.

   c) Explain any eight teaching Do's.

   d) Content is information put to use – Explain.

   e) What are the limitations of content management regarding tools ?

2. Attempt the following (**any four**) : **(4×4=16)**

   a) What are the collection services of collection system ?

   b) How to gauge the complexity by 'amount of contribution' ?

   c) What is data ? On which three types of information it depends ?

   d) What is 'formatting for effect' ? Explain.

   e) Explain static website with diagram.

3. Attempt the following (**any four**) : **(4×4=16)**

   a) Explain five myths about teaching with moodles.

   b) Define CMS. Explain – CM is the combination of content-related discipline.

   c) Explain 'Repository of management system'.

   d) How to gauge complexity by the no. of publications ?

   e) What is functionality ? Explain monolythic versus mix-and-match functionality.

P.T.O.

4. Attempt the following (**any four**) : **(4×4=16)**

   a) Explain web-CMS with diagram.

   b) What is structure ? Explain structure is important.

   c) Which activities are involved while organizing information into content ?

   d) Explain any four principles of moodle.

   e) What is publishing system ? Explain publishing templates.

5. Write the steps for the following (**any four**) : **(4×4=16)**

   a) Create a website for a computer hardware and delete an article showing information of floppy disk, in Joomla.

   b) Create a website for car showroom and add Meta tag to it in Joomla.

   c) Create a website for cosmetics such that it Navigates to types of cosmetics in Joomla.

   d) Create a new user to create a news article and Edit that article in Joomla.

   e) How to create new template in Joomla / CMS – made simple ?

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Seat No.	

M.C.A. (Commerce Faculty) Semester – V Examination, 2013
502 : DISTRIBUTED DATABASE APPLICATIONS

Time : 3 Hours Max. Marks : 80

***Note** : i) **All** questions are **compulsory**.*
*ii) Figures to the **right** indicate **full** marks.*
iii) Draw the neat diagrams if necessary.

1. Write a note on **(any 4)** : **(4×4=16)**
   a) Performance tuning
   b) Vertical fragmentation
   c) E-Catalogs
   d) Tp-Monitor Architecture
   e) R-Trees.

2. Attempt **any 4** : **(4×4=16)**
   a) What is use of Catalog ?
   b) Explain Basic Timestamp Mechanism.
   c) Define
      i) Mobile databases ii) LWFG
      iii) Spatial data iv) Temporal data
   d) Explain goals of transaction management.
   e) Explain different types of spatial queries.

3. Attempt **any 4** : **(4×4=16)**
   a) Explain the following terms
      i) local-read protocol
      ii) global read/write protocol.

P.T.O.

b) Explain quad trees in detail.

c) What are market places ? Explain its different types.

d) What is a deadlock ? How deadlocks are handled in distributed database system ? Explain one technique in brief.

e) What are relevant, complete and minterm predicates ? Explain with example.

4. Attempt **any 4** : **(4×4=16)**

a) What is join graph ? What is use of join graph ? Explain with example.

b) Explain different communication structure for commit protocol.

c) Differentiate top-down and bottom-up approaches of design of distributed database.

d) What is false deadlock ? Explain with example.

e) Explain parametric queries with example.

5. Attempt **any 4** : **(4×4=16)**

a) Consider the following situation where transactions T_3 and T_4 are executing at site 3. Transactions T_5 and T_6 are executing at site 4. Transaction T_3 is waiting for transaction T_4. Transaction T_5 is waiting for transaction T_6. Transaction T_3 is waiting for T_5. Transaction T_4 is waiting for transaction T_6. Draw LWFG and GWFG and detect deadlock.

b) Consider the relation

car (carno, carmodel, color, price) is horizontally fragmented as

Car 1 = σ price $\leq$ 1,00,000

Car 2 = σ price < 5,00,000 and σ price > 1,00,000

Car 3 = σ price $\geq$ 5,00,000

reduce the following query

select * from car where price between 1,00,000 and 5,00,000.

c) Consider the following schema

Machine (mno, mname, mtype, mcost)

Part (Pno, pname, pdese, mno)

Divide the machine relation horizontally using following predicates.

P_1 : σ mcost < 50,000

P_2 : σ mcost $\geq$ 50,000.

d) Consider the following schema

Book (bno, bname, pubname, price)

Author (ano, aname)

Book-Author (bho, ano)

Convert the following query into optimized operator tree.

Select bname

from Book, Author, Book-Author

where Book. bno = Book-Author. bno

and Author. ano = Book-Author. bno

and pubname = “Vision”

and aname = “Mr. kanetkar”

and price < 250.

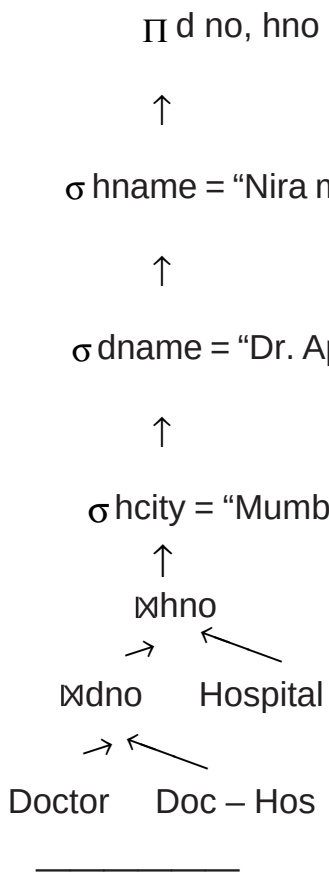
e) Consider the following schema

Doctor (dno, dname, city)

Hospital (hno, hname, hcity)

Doc-Hos (dno, hno)

Convert the given operator tree into optimized operator tree.



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Seat No.	

M.C.A. (Commerce Faculty) (Semester – V) Examination, 2013
504 : DATA WAREHOUSING AND DATA MINING

Time : 3 Hours Max. Marks : 80

Instructions: *1) **All** questions are **compulsory**.*
*2) Figures to the **right** indicate **full** marks.*
*3) **Neat** diagram must be drawn **wherever** necessary.*

1. Attempt **any four** of the following. **(4×4=16)**
   a) What is multidimensional data model ? Why it is used in Data Warehousing ?
   b) What are the different component of Business Intelligence ?
   c) Write a note on cost of data marting.
   d) What is Service Level Agreement ? Explain in detail.
   e) Difference between Data Warehouse and Data Mining.

2. Attempt **any four** of the following. **(4×4=16)**
   a) Discuss the issue of Data mining system ?
   b) What is Structured data and Unstructured data ? Explain with example.
   c) What is Temporal Mining ? Why it is used ?
   d) What is Support and Confidence in Association rule mining ? Explain with example.
   e) Explain discretisation and concept of Hierarchical generalization ?

3. Attempt **any two** of the following. **(2×8=16)**
   a) Explain Star Schema with example and diagram.
   b) Define Data warehouse manager Architecture with suitable diagram.
   c) Solve the following example with association rule. Consider minimum support = 2

Tid	Item Bought
T1	Bread, Jelly, Peanutbutter
T2	Bread, Peanutbutter
T3	Bread, Milk, Peanutbutter
T4	Beer, Bread
T5	Beer, Bread

P.T.O.

4. Attempt **any two** of the following. **(2×8=16)**

   a) What is knowledge base ? Explain any 5 data mining technique ?

   b) Explain the method that mines the complete set of frequent itemsets without candidate generalization.

   c) The following table contains training data from weather database containing attributes : outlook, temperature, humidity, windy and class. Let ‘Class’ be the class level attribute. Given a data tuple having the values, “rain”, “hot”, “high” “false” for the attributes outlook, temperature, humidity and wind y. Compute a neive Baysesian classification of the class.

Outlook	Temperature	Humidity	Windy	Class
Sunny	Hot	High	False	N
Sunny	Hot	High	True	N
Overcast	Hot	High	False	P
Rain	Mild	High	False	P
Rain	Cool	Normal	False	P
Rain	Cool	Normal	True	N
Overcast	Cool	Normal	True	P
Sunny	Mild	High	False	N
Sunny	Cool	Normal	False	P
Rain	Mild	Normal	False	P

Sunny	Mild	Normal	True	P
Overcast	Mild	High	True	P
Overcast	Hot	Normal	False	P
Rain	Mild	High	True	N

5. Attempt **any four** of the following. **(4×4=16)**

   a) Decision Tree

   b) Database used in pentaho

   c) Data Integration

   d) Fierarchical Clustering

   e) Apriori Algorithm.