Code No: **R4201A** **R10** **Set No. 1**

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015

WATER RESOURCES SYSTEM PLANNING AND MANAGEMENT

(Civil Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1 What is meant by water demand? What are the principal components of such demand? How the demands are projected. What are the optimization techniques available? Explain any one briefly. [15]

2 a) What is the difference between the simplex method and exhaustive enumeration of feasible corner points of the constrained region? [8]

b) Consider the following linear program and solve the problem graphically.
Maximize $3x_1 + 5x_2$
Subject to $3x_1 + 2x_2 \leq 18$; $x_1 \leq 4$; $x_2 \leq 4$. [7]

3 a) What is the significance of sensitivity analysis in linear programming? [8]

b) Solve the following LP problem using dual simplex method;
Minimize Z = x1+2x2+3x3
subject to 2x1-x2+x3 ≥ 4; x1+x2+2x3 $\leq$ 8; x2-x3 ≥ 2; x1,x2 and x3 ≥ 0. [7]

4 The Maruthi rental company has four cars available at central point. There are requests from six Marketing outlets for one car a piece. Based on customer satisfaction, mileage and transportation costs, the following cost matrix has been constructed for car delivery. Set up this problem as a mathematical program and solve this problem using dynamic programming.

Cars	Market					
	1	2	3	4	5	6
1	7	12	9	15	8	14
2	5	10	5	12	6	13
3	8	10	7	16	7	12
4	9	14	8	14	7	11

[15]

Code No: **R4201A** **R10** **Set No. 1**

5 Solve the following Non- Linear optimization problem
Minimize $x_1^2 + x_2^2$
Subjected to $x_1 + x_2 \geq 4$; $2x_1 + x_2 \geq 5$. [15]

6 a) What are the simulation techniques for the water resources system management and analysis? [8]

b) Write about the influence of developments in software and hardware on water resources system analysis. [7]

7 a) Write short notes on benefit cost evaluation. [8]

b) The following alternative plans for reducing flood damages along a reach of a river are being considered without flood control. Average annual flood damage is of Rs. 525,000, Discount 7% and 50 period of analysis has been adopted. Find the economically optimum plan.

Flood control plan	Initial investment (Rs)	Operation and maintenance(Rs)	Average annual damage(Rs)
No project	-	-	525,000
Plan A	380,000	125,000	312,000
Plan B	1,620,000	77,000	238,000
Plan C	1,970,000	113,000	156,000
Plan D	2,000,000	202,000	125,000
Plan E	2,35,000	238,000	83,000

[7]

8 a) Write in detail about any two of conventional approaches for reservoir operation. [8]

b) Explain briefly about what you mean by optimal cropping pattern. [7]

Code No: **R4201A** **R10** **Set No. 2**

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015

WATER RESOURCES SYSTEM PLANNING AND MANAGEMENT

(Civil Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

*****

1 a) What are the features of systems approach to water resources planning and management? [8]

b) Explain the role of optimization models. [7]

2 a) What are primal and dual problems in linear programming? [8]

b) Solve the problem by simplex method.
Maximize $Z = 2x_1 + 3x_2$
Subject to $x_1 + 2x_2 \leq 4$, $x_1 + x_2 = 3$, $x_1 \geq 0$, $x_2 \geq 0$. [7]

3 a) Explain the conditions of project optimality. [8]

b) Solve the following LP problem using dual simplex method;
Maximize Z = 2x1+x2
Subject to x1+2x2 ≤ 10; x1+x2 ≤ 6; x1-x2 ≤2; x1-2x2 ≤1; x1, x2 ≥0. [7]

4 Obtain the optimal allocation of 8 units of water among three farms. The net returns from each farm for different levels of allocation are given below. Each farm should be allocated a minimum of 1 unit and a maximum of 6 units.

Water allocated	Net returns		
	Farm1	Farm2	Farm3
1	2	3	4
2	5	5	7
3	7	8	9
4	10	10	11
5	12	11	13
6	13	11	14

[15]

Code No: **R4201A** **R10** **Set No. 2**

5 Solve the following Non- Linear optimization problem
Minimize $1.5x_1^2 + x_2^2 + 2x_3^2$
Subjected to $x_1 + x_2 + x_3 = 6$ [15]

6 a) List any five reasons why simulation is appropriate for many real world problems. [8]

b) What is the difference between model verification and model validation? [7]

7 a) Write short notes on discounting techniques. [8]

b) A spillway is being designed to pass a flood of 2,000 cumecs. The annual damage in case the flood exceeds the designed flood is estimated as Rs 15,000 and rate of discount is 6%. Which of the following spillway is most economical?

Spillway	Construction cost(Rs)	Life (years)	Probability of flood exceeds the designed flood in any one year
A type	20,000	20	0.2
B type	30,000	25	0.1
C type	55,000	30	0.15

[7]

8 a) What do you mean by optimal operation of a reservoir system? [8]

b) Enumerate what you mean by integrated water management in relation to dependable water supply for irrigation. [7]

Code No: **R4201A** **R10** **Set No. 3**

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015

WATER RESOURCES SYSTEM PLANNING AND MANAGEMENT

(Civil Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

****

1 a) Write short notes on types of optimization techniques. [8]

b) Explain the optimization of a function of a single variable [7]

2 a) How do you recognize that a linear programming problem is unbounded while using simplex method? [8]

b) Maximize Z= 10A +12B
Subject to constraints
$2A + 3B \leq 1500$
$3A + 2B \leq 1500$
$A+B \leq 600$, $A \geq 0$, $B \geq 0$. [7]

3 a) Explain the terms unbounded solution and alternate optimum solution. [8]

b) Apply the principal of duality to solve the linear program
Maximize $Z = 3x_1 - 2x_2$
Subjected to $x1 + x_2 \leq 5$; $x_1 \leq 4$; $1 \leq x_2 \geq 6$; $x_1, x_2 \geq 0$. [7]

4 3 units of water is to be allocated optimally to three thermal stations. The allocation is made in discrete steps of one unit ranging from 0 to 3, with the three thermal stations denoted as thermal 1, thermal 2 and thermal 3 respectively, the return obtained from the users for a given allocation are given in the following table. Find allocations to the three thermal stations such that the total return is maximized using backward recursion of dynamic programming.

Return function, R(x)	Thermal station(x)		
	(1)	(2)	(3)
R(0)	0	0	0
R(1)	2	2	3
R(2)	4	3	5
R(3)	6	6	5

[15]

Code No: **R4201A** **R10** **Set No. 3**

5 Solve the following Non- Linear optimization problem
Minimize $Z= 5x_1^2 + x^2_2 + 4$
Subjected to $x_2 - 4 \geq -4x_1$; $-x_2 + 3 \leq 2x_1$ [15]

6 Define simulation. What are the limitations on computer simulation? Explain various components of simulation model. [15]

7 a) Discuss and compare various methods available for selection of an alternative from different alternatives available for economic analysis. [8]
b) Explain the terms utility function and production function and discuss their use in estimating costs and benefits of water resources projects. [7]

8 a) Explain the conjunctive use operational model. Formulate various constraints in a conjunctive use model [8]
b) Write about the importance of conjunctive use in any water resources project. [7]

Code No: **R4201A** **R10** **Set No. 4**

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015

WATER RESOURCES SYSTEM PLANNING AND MANAGEMENT

(Civil Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

*****

1 a) Explain the optimization of function of multiple variables. [8]

b) Examine the following function for convexity/concavity and determine their values at extreme points.

$F(X) = x_1^2 + x_2^2 - 4x_1 - 2x_2 + 5$ [7]

2 1000 ha of farm land surrounding a lake is available for two crops. Each hectare of crop A loses 0.9 kg/yr of pesticide to the lake, and the corresponding loss from crop B is 0.5kg/yr. Total pesticide losses are not allowed to exceed 632.5kg/yr. Crop returns are Rs.3000 and Rs. 1500/ha for crops A and B respectively. Costs for crops are estimated to be Rs. 1600 and Rs. 500/ha for crops A and B, respectively. Formulate a Linear Programming model for determining the cropping combination that maximizes farmer profits subject to a constraint on the pesticide losses into the lake and solve it by simplex method. [15]

3 a) State the general rules for formulating dual Problem from its primal. [8]

b) Solve the following linear program by applying principal of duality

Maximize $Z = 5x_1 + 12x_2 + 4x_3$ Subjected to $x_1 + 2x_2 + x_3 \leq 5$; $2x_1 - x_2 + 3x_3 \leq 2$; $-2x_1 - x_2 + 3x_3 \geq -2$; $x_1, x_2, x_3 \geq 0$. [7]

4 Solve the following 4-user water allocation problem to maximize the total returns, using Backward recursion of dynamic programming: water available for allocation: 60 units, to be allocated in discrete units of 0, 10, 20, and 60. Return from the four users for a given allocation, are given in the table below: [15]

Allocation	Returns form			
	User1	User 2	User3	User4
0	0	0	0	1
10	3	4	3	1
20	5	4	5	3
30	6	4	5	7
40	3	4	4	8
50	3	6	2	9
60	3	7	0	9

Code No: **R4201A** **R10** **Set No. 4**

5 Solve the following Non- Linear optimization problem
Minimize $Z = (x_1 -2)^2 + (x_2 -2)^2$
Subjected to $x_1 + 2x_2 \leq 3$; $8x_1 + 5x_2 \geq 10$. [15]

6 What is simulation? Describe its advantages in solving the problems. Give its main limitations with suitable examples [15]

7 Two alternate designs are available for an irrigation canal, 10m long that has to carry a flow of 11 cumecs in a terrain that has a slope of 0.0004. The relevant data for the two alternate designs are given in the following table.

Canal	Unlined	Lined
Bed width	2.0m	1.0m
Side slopes	2H:1V	1.5H: 1V
Depth	2.0m	2.0m
Free board	0.25m	0.25m
Seepage losses	20 litres/sec/km	2litres/sec/km
Maintenance	Rs.12000/km/.year	Rs.4000/km/year

The cost of evacuation and the earth work is Rs.20/m^3, while the cost of concrete lining is Rs.120/m^2. The value of water may be assumed as Rs.50per 100m^3. The canal would be in use for only nine months in a year. Assuming an interest rate of 10% and useful life of 50 years, which alternative should be constructed? [15]

8 a) Discuss the various issues involved in management of groundwater resources. [8]

b) Compare and contrast the methods available for the operation of single purpose conservation use model. [7]

Code No: **R42029** **R10** **Set No. 1**

IV B.Tech II Semester Regular/Supplementary Examinations, April- 2015

UNIX AND SHELL PROGRAMMING

(Electrical and Electronics Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

*****

1 a) Explain about UNIX features? [8]

b) Explain the following commands with suitable examples:
i) who ii) date
iii) mkdir iv) stty [7]

2 a) Discuss about different modes of operation in vi editor. [8]

b) Explain cut and paste commands with suitable examples. [7]

3 a) Discuss how jobs are controlled in UNIX with suitable examples. [8]

b) Define the terms filters and pipes. Give a short note on them. [7]

4 Discuss in detail about grep family of commands. [15]

5 a) Explain how associative arrays are used in awk scripts. [8]

b) Explain in detail about the mathematical functions of AWK. [7]

6 a) List korn shell features and explain the command history of korn shell. [8]

b) Explain about command execution process of korn shell. [7]

7 a) Explain various Special Parameters and Variables in C shell programming. [8]

b) Explain about Argument Validation in C shell. [7]

8 Explain the syntax and each argument of the following functions:
a) stat b) fstat c) lstat d) chmod e) chown [15]

Code No: **R42029** **R10** **Set No. 2**

IV B.Tech II Semester Regular/Supplementary Examinations, April- 2015

UNIX AND SHELL PROGRAMMING

(Electrical and Electronics Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

****

1 a) Explain about UNIX architecture. [8]

b) Explain the following commands with suitable examples:
i) cat ii) cp
iii) mv iv) rm [7]

2 a) Explain in detail the following networking commands. [9]
i) unlink ii) mount iii) telnet

b) Explain the following unix utility commands. [6]
i) head ii) sort iii) paste

3 a) Define redirection. Explain how input, output and error redirection is done? [8]

b) Define filter and discuss any four types of filters in UNIX? [7]

4 Discuss in detailed about sed? Compare sed with grep. [15]

5 a) Explain about user defined functions used in awk scripts with examples. [8]

b) Explain about string functions used in awk scripts with examples. [7]

6 a) Explain about the variables of korn shell. [8]

b) Write a korn shell script that accept two file names as arguments and copies the contents of first file in to the second file. [7]

7 a) Explain about Environmental Variables and On-Off Variables. [8]

b) Write a C shell script that accepts a file name as argument and tells whether the user is having read, write and execution permissions to that the file or not? [7]

8 Explain the syntax and each argument of the following functions:
a) open b) write
c) Chmod d) fstat e) umask [15]

Code No: **R42029** **R10** **Set No. 3**

IV B.Tech II Semester Regular/Supplementary Examinations, April- 2015

UNIX AND SHELL PROGRAMMING

(Electrical and Electronics Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

*****

1 a) Explain about UNIX architecture. [8]

b) Explain the following commands with suitable examples:
i) mkdir ii) more
iii) wc iv) gzip [7]

2 a) Discuss various process utility commands with suitable examples. [8]

b) Explain about different disk utility commands with suitable examples. [7]

3 a) What is pipe? Explain how tee command is used in pipes. [8]

b) Explain cut and paste commands with suitable examples. [7]

4 Explain the commands grep, egrep and fgrep with neat examples. [15]

5 a) Compare and Contrast awk and grep. [8]

b) Compare and Contrast awk and sed. [7]

6 a) Explain in detail about the environment variables of korn shell? [8]

b) Explain about debugging process in korn shell with various debugging scripts. [7]

7 a) Explain about eval command of C shell. [8]

b) Write a C shell script that accepts any number of file names as arguments and tells the type of each file. [7]

8 a) Define system call. Differentiate between system call and library functions. [8]

b) Explain about stat system call with suitable program. [7]

Code No: **R42029** **R10** **Set No. 4**

IV B.Tech II Semester Regular/Supplementary Examinations, April- 2015

UNIX AND SHELL PROGRAMMING

(Electrical and Electronics Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

*****

1 a) Explain about UNIX features. [8]

b) Explain the following commands with suitable examples:
i) man ii) echo
iii) lp iv) tar [7]

2 a) Explain how security is provided in UNIX through file permissions. [8]

b) Explain about different backup utility commands with suitable examples. [7]

3 a) Discuss command execution in shell. [8]

b) Discus the sort command with suitable examples. [7]

4 a) Explain in detail about sed operations and commands. [8]

b) List applications of sed. [7]

5 a) Explain about looping statements used in awk scripts. [8]

b) Explain about the mathematical functions of AWK with an example. [7]

6 a) Explain about eval command of korn shell. [8]

b) Write a korn shell script that accept file names as arguments and print the number of lines, words and characters of each file. [7]

7 a) Explain about the two special files of C shell. [8]

b) Write a C shell script that accepts even number of file names as arguments and copies the contents of 1st file in to the 2nd file, 3rd file in to the 4th file and so on? [7]

8 a) Briefly explain about the following system calls:
open, create, close, read and *write*. [8]

b) Briefly explain about the following system calls:
lseek, syslink, stat, lstat, chmod, chown. [7]

Code No: **R4205C** **R10** **Set No. 1**

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015

SOFTWARE TESTING METHODOLOGIES

(Common to Computer Science & Engineering and Information Technology)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
****

1	a)	State and explain various dichotomies in software testing.	[8]
	b)	What is meant by a software bug? Discuss in detail the consequences of bugs.	[7]
2	a)	Describe briefly the terms achievable and unachievable paths.	[7]
	b)	Explain the concepts of path sensitizing and path instrumentation.	[8]
3	a)	Compare data flow and path flow testing strategies.	[8]
	b)	What is transaction flow testing? Discuss its significance.	[7]
4	a)	What is meant by nice-domain? Give examples for nice two-dimensional domain.	[8]
	b)	Explain in brief about Domain Dimensionality.	[7]
5	a)	Explain Huang's theorem with examples	[8]
	b)	Write Short Notes on Distributive Laws and Absorption Rule.	[7]
6	a)	What are decision tables? Illustrate the applications of decision tables.	[8]
	b)	Explain whether the predicates are restricted to binary truth-values or not.	[7]
7	a)	Write the design guidelines for building finite state machine into code.	[8]
	b)	Write testers comments about state graphs.	[7]
8	a)	Explain how a relation matrix can be represented and what are the properties of relations?	[8]
	b)	Discuss in brief the matrix operations in building tools.	[7]

Code No: **R4205C** **R10** **Set No. 2**

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015

SOFTWARE TESTING METHODOLOGIES

(Common to Computer Science & Engineering and Information Technology)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
*****

1	a)	Explain in detail about the model for testing.	[8]
	b)	Discuss about requirements, features and functionality of bugs.	[7]
2	a)	Describe the basic concepts of path testing.	[8]
	b)	State and explain various kinds of predicate blindness with examples?	[7]
3	a)	Compare and contrast Control Flow and Transaction flow.	[7]
	b)	Discuss in detail data - flow testing strategies.	[8]
4	a)	Explain various properties related to Ugly-domains.	[7]
	b)	With a neat diagram, explain the schematic representation of domain testing.	[8]
5	a)	Explain Regular Expressions and Flow Anomaly detection.	[8]
	b)	Discuss Path Sums and Path Product.	[7]
6	a)	Reduce the following functions using K-Maps F(A,B,C,D) = P(4,5,6,7,8,12,13)+d(1,15)	[9]
	b)	Justify that the Flow graphs are abstract representations of programs.	[6]
7	a)	Explain with an example how to convert specification into state-graph. Also discuss how contradictions can come out.	[9]
	b)	Write short notes on Dead States and State Bugs.	[6]
8	a)	Discuss node reduction algorithm.	[8]
	b)	Write about loops in matrix representation.	[7]

Code No: **R4205C** **R10** **Set No. 3**

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015

SOFTWARE TESTING METHODOLOGIES

(Common to Computer Science & Engineering and Information Technology)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
****

1 a) To what extent can testing be used to validate that the program is fit for its purpose. Discuss? [8]
b) What are control and sequence bugs? How they can be caught? [7]

2 a) What is meant by program's control flow? How is it useful for path testing? [8]
b) Discuss the applications of path testing. [7]

3 a) How do Transaction flows occur? Explain with examples. [7]
b) What is meant by data flow model? Discuss various components of it. [8]

4 a) Discuss about the Complete domain boundaries and Incomplete domain boundaries. [8]
b) Briefly describe the domain and interface testing. [7]

5 a) Discuss Path Expressions, Path Sums and Path Products. [8]
b) Write Short Notes on Loops and Identity elements. [7]

6 a) How can we form specifications into sentences? Write down different phrases that can be used for words. [8]
b) Discuss the role of key charts in Logic based testing. [7]

7 a) What are the software implementation issues in state testing? Explain with examples. [8]
b) Differentiate between good state graphs and bad state graphs. [7]

8 a) How can the graph be represented in Matrix form? Explain with an example. [8]
b) Write about matrix powers and products. [7]

Code No: **R4205C** **R10** **Set No. 4**

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015

SOFTWARE TESTING METHODOLOGIES

(Common to Computer Science & Engineering and Information Technology)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
****

1	a)	Discuss how software testing will ensure the quality of developed software.	[8]
	b)	What are the principles of test case design? Explain.	[7]
2	a)	State and explain various path selection rules.	[8]
	b)	Discuss various flow graph elements with their notations.	[7]
3	a)	Write in brief the applications of dataflow testing.	[7]
	b)	Explain data-flow testing with its generalizations and limitations.	[8]
4	a)	Discuss about the Linear domain boundaries and Non linear domain boundaries.	[7]
	b)	Discuss in detail about testability of Domains.	[8]
5	a)	Explain Reduction procedure algorithm for a flow graph with an example.	[8]
	b)	Discuss in brief the applications of paths	[7]
6	a)	Explain how paths can be determined in domains of Logic based testing.	[8]
	b)	Explain about the ambiguities and contradictions in specifications.	[7]
7	a)	What are principles of state testing? Explain its advantages and disadvantages.	[8]
	b)	Write short notes on Transition Bugs and Encoding Bugs.	[7]
8	a)	What are graph matrices and their applications? Explain.	[8]
	b)	Explain cross-term reduction and node term reduction optimization.	[7]

Code No: **R4205G** **R10** **Set No. 1**

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015

E – COMMERCE

(Common to Computer Science & Engineering and Information Technology)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

****

1	a)	Explain the Generic Frame work of the E-Commerce with diagram.	[10]
	b)	Explain about E-Commerce and Media convergence.	[5]
2	a)	Explain about consumer oriented services.	[8]
	b)	Explain about check clearing process.	[7]
3	a)	Explain about e-cash and the properties of e-cash.	[8]
	b)	Explain about usage of e-cash in auction.	[7]
4	a)	Explain the internals of international trade.	[8]
	b)	Explain the EDI structure.	[7]
5	a)	Explain the types e-broking in internal markets.	[10]
	b)	Explain the workflow management.	[5]
6	a)	Why mobility of information is necessary.	[5]
	b)	Explain the activities of document base workflow.	[5]
	c)	Explain the types data warehouses.	[5]
7	a)	Explain different information filtering features.	[8]
	b)	Give the classification of consumer data-interfaces.	[7]
8	a)	Explain the stages from inception to display of multimedia content.	[8]
	b)	Explain different compression methods of multimedia data.	[7]

Code No: **R4205G** **R10** **Set No. 2**

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015

E – COMMERCE

(Common to Computer Science & Engineering and Information Technology)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

****

1	a)	Explain the possible components of multimedia.	[5]
	b)	Explain the client-server architecture in E-Commerce.	[10]
2	a)	Explain ordered management cycle in E-Commerce.	[8]
	b)	Explain generic mercantile protocol based on the use of e-cash.	[7]
3	a)	Explain the process of detection of double spending.	[8]
	b)	Explain the operational risks and legal issues in e-cash.	[7]
4	a)	Explain about EDI Translator layer and communication layer.	[8]
	b)	How much will be the EDI implementation cost.	[7]
5	a)	Explain about customization and internal commerce.	[10]
	b)	Explain about product or service customization.	[5]
6	a)	Explain the steps in interactive marketing process on the Internet.	[8]
	b)	Explain about the guidelines for Internet advertisement.	[7]
7	a)	Explain about E-Commerce catalogs or directories.	[8]
	b)	Explain about E-white pages.	[7]
8	a)	Explain about Symmetric multi processing.	[8]
	b)	Explain about the characteristics of digital video.	[7]

Code No: **R4205G** **R10** **Set No. 3**

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015

E – COMMERCE

(Common to Computer Science & Engineering and Information Technology)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

****

1	a)	Explain pressures influencing the business.	[8]
	b)	Explain about Just in Time manufacturing.	[7]
2	a)	Explain the criteria essential for consumer oriented E-Commerce.	[8]
	b)	Explain the steps followed by customer in product purchasing.	[7]
3	a)	Explain the payment transaction sequence in an electronic check system.	[8]
	b)	Explain factors that must be addressed before any new payment method can be successful.	[7]
4	a)	Explain the information flow without EDI.	[8]
	b)	Explain the tangible benefits of EDI.	[7]
5	a)	Explain the characteristics of work flow management.	[8]
	b)	Compare push based supply chain vs pull based supply chain.	[7]
6	a)	Explain about digital document management issues and concerns.	[8]
	b)	Explain about 4 types of the digital documents.	[7]
7	a)	Explain about wide area internet service (WAIS) Engine.	[8]
	b)	Explain about Indexing methods and packages.	[7]
8	a)	Explain about point to point video conferencing using POTS.	[8]
	b)	Explain the CDROM Technology characteristics.	[7]

Code No: **R4205G** **R10** **Set No. 4**

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015

E – COMMERCE

(Common to Computer Science & Engineering and Information Technology)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1	a)	Explain quick response chain in QR.	[8]
	b)	Explain functions of supply chain management.	[7]
2	a)	Explain simple mercantile transaction steps.	[8]
	b)	Explain the impact of home entertainment on traditional industries.	[7]
3	a)	Explain how to process payments using encrypted credit cards.	[7]
	b)	Explain online payment processing by third party processor.	[8]
4	a)	Explain the layered architecture of EDI.	[8]
	b)	Compare Email vs EDI.	[7]
5	a)	Explain about Efficient Customer Response (ECR).	[8]
	b)	Explain about Agile manufacturing.	[7]
6	a)	Explain about different types Online Transactions.	[7]
	b)	Explain about capabilities provided by structured documents.	[8]
7	a)	Explain the various information search challenges.	[8]
	b)	Explain about search and resource discovery paradigm.	[7]
8	a)	Explain about ISDN for video conference.	[8]
	b)	Explain about MPEG and JPEG.	[7]

Code No: K0227/R07 **Set No. 1**

IV B.Tech II Semester Supplementary Examinations, April 2015
DATA BASE MANAGEMENT SYSTEMS
(Eelectrical Electronics Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What is Data Independence? Explain the two levels of Data Independence.
   (b) Write about the storage manager of database system structure. [8+8]
2. (a) What is a foreign key constraint? Why are such constraints important? What is referential integrity?
   (b) How many distinct tuples are in a relation instance with cardinality 22? [8+8]
3. Describe the multi valued dependency. Is the decomposition in 4NF always dependency preserving and loss less justify your answer with the help of an example. [16]
4. Explain the FD and MVD with examples? [16]
5. (a) What is a transaction? explain the terms related to transaction: Atomicity, Consistency, Isolation & Durability [8]
   (b) Write briefly on terms
      i. Blind write
      ii. Dirty read
      iii. Recoverable schedule
      iv. Unrepeatable read. [8]
6. (a) Define the violations caused by each of the following
      i. Dirty read
      ii. Non replaceable read
      iii. Phantoms [6]
   (b) What are the typical kinds of records in a system log ? What are transaction commit points & why are they Important. [10]
7. How does the remapping of bad sectors by disk controllers affect data retrieval rates ? [16]
8. Construct a B-tree for the following set of key values. (2,3,5,7,11,17,19,23,29,31) Assume that the tree is initially empty and values are added in ascending order. Construct B-tree for the cases where the number of pointers that will fit in one node is as follows.
   (i) four (ii) six (iii) eight [16]

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Code No: K0227/R07 **Set No. 2**

IV B.Tech II Semester Supplementary Examinations, April 2015
DATA BASE MANAGEMENT SYSTEMS
(Eelectrical Electronics Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Write about the different types of Database Users.
   (b) Write about the storage manager of database system structure. [8+8]

2. Consider the following database.
   Employee (employee-name, street, city)
   Works (employee-name, company-name, salary)
   Company (company-name, city)
   Manager (employee-name, manager-name)
   Give an expression in the relational algebra, the tuple relational calculus, and the domain relational calculus, for the following query.
   Find the names of all employees who work for estate bank. [16]

3. (a) What is functional dependency ? how it is useful in dbms?
   (b) Normalize the relation R (A, B, C, D, E, F, G, H) into the 3NF using the following set of FDs ABC, BCD, CDEABH, BHA, DEF is the decomposition dependency preserving? [8+8]

4. (a) What is Normaliztion? Give types of Normalization
   (b) What are the advantages of Normalized relations over the un Normalized relations? [8+8]

5. (a) Define Transaction & Schedule with suitable Example. [8]
   (b) With suitable example explain ACID properties. [8]

6. (a) Write a short notes on
      i. Phases of Aries Algorithm
      ii. Write ahead log protocol [8]
   (b) Discuss why concurrency control is needed. Give s suitable example [8]

7. How does the remapping of bad sectors by disk controllers affect data retrieval rates ? [16]

8. Construct a B^+-tree for the following set of key values. (2,3,5,7,11,17,19,23,29,31) Assume that the tree is initially empty and values are added in ascending order. For this tree show the form of tree after each of the following series of operations.

   (i) Insert 9 (ii) Insert 10 (iii) Insert 8 (iv) Delete 23 (v) Delete 19 [16]

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Code No: K0227/R07 **Set No. 3**

IV B.Tech II Semester Supplementary Examinations, April 2015
DATA BASE MANAGEMENT SYSTEMS
(Eelectrical Electronics Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Write about the different types of Database Users.
   (b) Write about the storage manager of database system structure. [8+8]
2. (a) Define the division operation in terms of basic relational algebra operations. Describe a typical query that calls for division. Unlike join, the division operator had not special attention in database. Explain, Why?
   (b) What is relational completeness? If a query language is relationally complete, can you write any desired query in that language. [8+8]
3. Write the Equivalence Rules for the transportation of Real Expressions. [16]
4. (a) Explain about 4 NF. Give one example.
   (b) Explain about 5 NF. Give one example. [8+8]
5. (a) Write a short note on
      i. Reading uncommitted data(WR Conflict)
      ii. Unrepeatable reads(RW Conflict)
      iii. Overwriting uncommitted data(WW Conflict) [9]
   (b) Explain schedules involving aborted transaction with suitable examples. [7]
6. (a) What are the properties required for LSN's [5]
   (b) What are redoable log records. [5]
   (c) Explain Lock upgrades, Convoys, Latches with respect to lock management. [6]
7. Explain about File organizations in detail. [16]
8. Explain about the B-tree and the structure of B^+-tree in detail with an example. [16]

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Code No: K0227/R07 **Set No. 4**

IV B.Tech II Semester Supplementary Examinations, April 2015
DATA BASE MANAGEMENT SYSTEMS
(Eelectrical Electronics Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Describe about the three levels of Data Abstraction.
   (b) What are the types of languages a database system provides? Explain. [8+8]
2. (a) What is a relation? Differentiate between relation schema and relation instance. Define the terms unity and degree of relation. What are domain constraints?
   (b) Explain new insertion, delation and updating of database is performed in the relational algebra. [8+8]
3. What is dependency Preservation property for decomposition? Explain why is it important. [16]
4. (a) Discuss join dependency give example.
   (b) What is functional dependency? Explain with Example? [8+8]
5. (a) Define Transaction & Schedule with suitable Example. [8]
   (b) With suitable example explain ACID properties. [8]
6. (a) What are the merits & demerits of using fuzzy dumps for media recovery. [6]
   (b) Explain the phases of ARIES Algorithm. [4]
   (c) Explain 3 main properties of ARIES Algorithm [6]
7. Explain about Variable-Length file organization with an example. [16]
8. Construct a B^+-tree for the following set of key values. (2,3,5,7,11,17,19,23,29,31) Assume that the tree is initially empty and values are added in ascending order. ConstructB^+-tree for the cases where the number of pointers that will fit in one node is as follows.
   (a) four
   (b) six
   (c) eight [16]

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