



Subj: Data Warehousing Mining & Business Intelligence

QP Code : 8496

**REVISED COURSE
(3 HOURS)**

[TOTAL MARKS:100]

- N.B. 1.Question 1 is compulsory
 2.Attempt any four question out of the remaining six question.
 3.All Question carry equal marks.
 4.Illustrate answers with neat sketches whenever required.
- Q.1(a) List and describe five primitives for specifying data mining task **10**
 (b) Explain Data mining as a step in KDD. Give the architecture of typical Data Mining system. **10**
- Q.2 (a) Explain BIRCH algorithm with example **10**
 (b) Explain Hoeffding tree algorithm with example **10**
- Q.3 (a) Explain Multidimensional association rules with suitable example **10**
 (b) Define classification , issues of classification and explain Bayesian classification with example **10**
- Q.4(a) Explain Data integration and data transformation w.r.t data warehouse **10**
 (b) What is text mining ? Explain different approaches to text mining **10**
- Q.5 (a) Explain click stream mining **10**
 (b) What is clustering? Explain k- means clustering algorithm. Suppose the data for clustering - {2,4,10,12,3,20,11,25}
 Consider k=2, cluster the given data using above algorithm. **10**
- Q.6(a) Explain constraint based association rule mining **10**
 (b) Explain periodic crawler and incremental crawler **10**
- Q.7 Write short note on (Any two) **20**
 (a) Web structure mining
 (b) Numerosity reduction
 (c) Spatial clustering Algorithm

RJ-Con. 10052-15.



Sub:- Software Testing & Quality Assurance

QP Code : 8573

[3 Hours]

Max Marks 100

- NB: 1. Question No. 1 is compulsory.
2. All questions carry equal marks.
3. In all answer Five Questions.
1. a) Compare McCall's Quality Model with ISO quality model. [5]
b) With example explain different types of interface errors. [5]
c) Explain test design preparedness matrix [5]
d) Explain different views of software quality [5]
 2. a) Explain following terms [10]
i) Error ii) Fault iii) Defect iv) Verification v) Validation
b) Differentiate between software testability and reliability with their relative importance [10]
 3. a) List and explain parameters for selection and evaluation of automated testing tools [10]
b) Explain boundary value analysis with suitable example. [10]
 4. a) Discuss characteristics of automated test cases. [10]
b) Give a detailed note on test execution strategy. [10]
 5. a) Draw and explain state transition diagram of a test case. [10]
b) Discuss relative advantages and disadvantages of top-down and bottom-up integration approaches. [10]
 6. a) Differentiate between black box and white box testing. [10]
b) With respect to whole program state transition diagram, explain Data Anomaly. [10]
 7. Short notes on:
a) Defect lifecycle. [5]
b) Strength and weakness of manual and automated testing [5]
c) Explain and discuss zero day attack in the context of security testing [5]
d) Advantage and disadvantage of acceptance testing [5]

RJ-Con.10745-15.

MURD15355 PADMAKESHAN VISHNUPADMA PRATISHTHAN'S COLLEGE OF ENGINEERING

(3 Hours)

[Total Marks : 100]

N.B. (1) Question No. 1 is compulsory

(2) Attempt any four questions out of remaining six questions.

- Q-1 a) Define System state, Event notice, Activity, Event list, Delay and Clock. (10)
b) Explain different steps in simulation study. (10)
- Q-2 a) Describe the Event Scheduling Time Advanced Algorithm. (10)
b) How would you select simulation software? Mention the features of any one simulation software. (10)
- Q-3 a) State the properties of random numbers. How are random numbers generated? (10)
b) What do you understand by "Goodness of Fit Test"? Write the procedure for the same. (10)
- Q-4 a) Perform the simulation of the Inventory System. Daily demand is represented by the random numbers 4, 1,8,5,2 and demand probability is given by (10)

Demand	Probability
0	0.2
1	0.5
2	0.3

If the initial inventory is 4 units, determine on which day the shortage condition occurs.

- b) Explain Poisson Process along with its properties. (10)
- Q-5 a) Explain the following with example (10)
I. Terminating Simulation
II. Non-terminating Simulation
b) Define Correlation and Covariance. Explain Time series Model. (10)
- Q-6 a) Give the equation for steady state parameters of M/G/1 queue and Derive M/M/1 from M/G/1. (10)
b) Explain in detail verification of simulation model. (10)
- Q-7 Write Short note on (any two) (20)
a) Inverse Transform Technique.
b) Issues in the simulation of manufacturing system.
c) Cobweb Model.

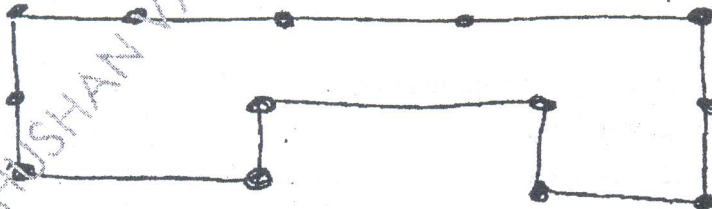


- N.B.:** (1) Question No.1 is compulsory.
 (2) Attempt any four out of remaining questions.
 (3) Figures to the right indicate full marks.

1. (a) Prove that Highpass : Original - Lowpass. 5
 (b) Extreme contrast straching is thresholding. 5
 (c) Explain discrete time systems with example. 5
 (d) Diffentiate between spatial resolution & tonal resolution. 5

2. (a) $x(t) = \sin(480\pi t) + 3\sin(720\pi t)$ is sampled with $F_s = 600$ times per second. 10
 (i) What are the frequencies in radians in the resulting DT signal $x[n]$?
 (ii) If $x[n]$ is passed through an ideal interpolator, what is the reconstructed signal.
 (b) Perform following operations on given signal. 10
 $x(n) = \{1, 2, 3, 5\}$
 (i) $x(-n-1)$
 (ii) $x(n-2)$
 (iii) $x(n+1)$
 (iv) $x(-n+2)$
 (v) $2x(n)$

3. (a) Obtain four directional chain code & shape number representation of following image. 5



- (b) Classify the signal as energy or power signal 5

$$x(n) = \begin{cases} \left(\frac{1}{2}\right)^n & n \geq 0 \\ (2)^n & n \leq 0 \end{cases}$$



- (c) Consider the image given below. Calculate direction of edge at the centre point of image. 10

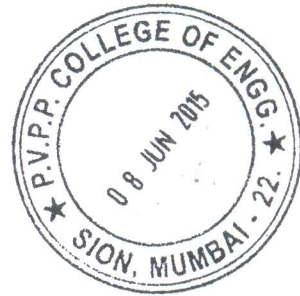
$$I = \begin{bmatrix} 50 & 80 & 70 \\ 5 & 50 & 90 \\ 7 & 9 & 50 \end{bmatrix}$$

4. (a) For the following binary image perform morphological operation opening followed by closing 10

$$A = \begin{bmatrix} 1 & 0 & 1 & 0 & 1 & 0 & 1 \\ 1 & 1 & 0 & 1 & 1 & 0 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 & 0 & 0 \\ 1 & 1 & 0 & 1 & 1 & 1 & 1 \end{bmatrix} \quad B = \begin{bmatrix} 1 & 1 \end{bmatrix}$$

- (b) Derive Fast Walsh Transform Flowgraph for $N=4$ 10

5. (a) If $x[n] = \{1, 2, 3, 4\}$ & $h[n] = [1, 7]$ 10
 Find linear convolution using circular convolution.
 (b) Compare lossless and lossy compression techniques. 5
 (c) Object detecting using correlation principle. 5



6. Write short note on any two. 10
- (a) Digital watermarking with application.
 (b) Sampling & quantizations.
 (c) Explain various frequency domain low pass filters in detail.

7. (a) Perform histogram stretching 50 that the new image has a dynamic range of $[0, 7]$ 10

Gray level	0	1	2	3	4	5	6	7
No. of pixels	80	90	75	100	0	0	0	0

- (b) State & prove any four properties of DFT 10