

Course No: SWE 5347
Course Title: Artificial Intelligent.
Date: 29/ 07/ 2013
No. of Questions: 3
Time: 1 H.
Using Calculator (Yes)

University of Palestine



Final Exam
Summer 2012-2013
Total Grade: 60

Instructor Name: Eng. M. Timraz
Student No.: _____
Student Name: _____
College Name: Engineering
Dep. / Specialist: Software
Using Dictionary (No)

First Question **No. of Branches (2)** **(10/60)**

Q1 B1: **(5/10)**

For the following sample categorical data set draw the symbol and frequency table.

Records	Attributes
X1	(A, A, B, C, C, C, D, D, A, A)
X2	(B, A, A, A, A, C, D, D, B, A)
X3	(A, D, B, C, D, C, D, C, A, A)
X4	(A, A, C, C, C, A, D, D, A, B)
X5	(A, D, B, B, D, A, C, D, A, C)
X6	(A, A, B, A, C, C, D, D, B, A)
X7	(A, D, B, C, C, B, D, D, A, A)

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Q1 B2 **(5/15)**

From the following symbol and frequency table return the origin data set contains all objects?

$$\begin{pmatrix} A & B & D & A & B & C \\ B & A & C & C & C & B \\ & & A & D & D & D \end{pmatrix}$$

$$\begin{pmatrix} 3 & 0 & 0 & 3 & 1 & 1 \\ 0 & 3 & 0 & 0 & 1 & 1 \\ & & 3 & 0 & 1 & 1 \end{pmatrix}$$

Second Question **No. of Branches (3)** **(35/60)**

Q2 B1 **(10/60)**

Find the Proximity Matrix and Covariance matrix for the following nominal data objects?

Object\Attributes	Code	Line	Strength	Stability
X1	A	1	Yes	Poor
X2	A	1	No	Poor
X3	B	1	No	Good
X4	B	0	Yes	poor



Q2 B2

(10/60)

Calculate the distance between these points using the assigned method?

- a) (12,3) , (12,2) and (1,1) using Euclidean distance.
- b) (2,3) , (9,2) and (6,7) using Manhattan distance.
- c) (2,3) , (2,2) and (10,1) using Average distance.

Q2 B3

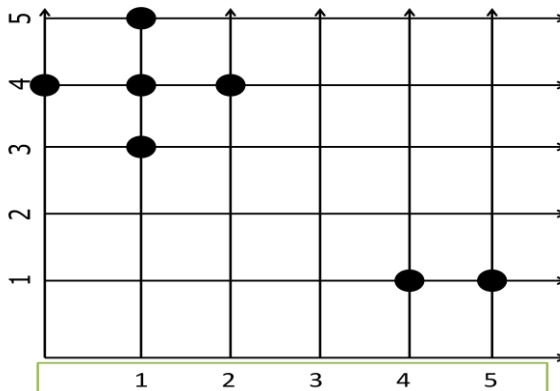
(15/60)

Two dimensional data set with 6 points as in the showing figure.

Represent the Similarity and Dissimilarity Measures by using the following techniques?

- 1. The Nearest Neighbor Distance.
- 2. The Farthest Neighbor Distance.
- 3. The Average Neighbor Distance.

$$D_{ave}(C_1, C_2) = \frac{1}{rs} \sum_{i=1}^r \sum_{j=1}^s d(y_i, z_j).$$



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Good Luck