

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- FEB-2023

COURSE CODE (2): 19BIWCI637

MAX. MARKS: 15

COURSE NAME: Statistics and Exploratory Data Analytics

COURSE INSTRUCTORS: Amol Vasudeva

MAX. TIME: 1 Hour

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

- 1.
- The scores for student are 40, 45, 49, 53, 61, 65, 71, 79, 85, and 91. What is the percentile for score 71?
 - A skater in the skating competition produces the following scores. Find the 40% trimmed mean of this score.
6.0, 8.1, 8.3, 9.1, and 9.9
 - The money spent by a student on different kinds of pencils is given as below. Calculate the weighted harmonic mean to get the average price of the pencil. (CO-1) [2+2+2= 6 marks]

Quality	Price/Pencil	Money Spent
A	1.00	50
B	1.50	30
C	2.00	20

2. Calculate the covariance matrix and Eigen values based on the following matrix. (CO-2) [3 marks]

$$A = \begin{bmatrix} 92 & 80 \\ 60 & 30 \\ 100 & 70 \end{bmatrix}$$

3. A dataset of students' marks in three subjects is given as below. Based on this dataset, write a Python program to compute the covariance matrix, Eigen values, Eigen vectors, and reduced dimensional matrix (transformation of the original matrix to a reduced dimensional matrix. (CO-2) [4 marks]

Student	Math	English	Arts
1	9	6	9
2	9	9	3
3	6	6	6
4	6	6	9
5	3	3	3

4. Identify the discrete, continuous, nominal, and ordinal variables from the following: (CO-1) [2 marks]
- Person_age
 - Person_gender
 - Person_height
 - Person_blood_group