|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Roll No |  |  |  |  |  |  |  |  |  |  |  |  |

****

**Presidency University**

**Bengaluru**

**School of Management**

**Make-up End-Term Examination - July 2024**

**Date**: 02 June 2024

**Time**: 9:30am – 12:30Pm

**Max Marks**: 100

**Weightage**: 50%

**Semester**: I

**Course Code**: MBA1007

**Course Name**: Business Statistics

**Department:** SOM

**Instructions:**

1. *Read the all questions carefully and answer accordingly.*
2. *Do not write any information on the question paper other than roll number.*
3. *Question paper consists of 3 parts.*

**PART A**

**Answer any 10 Questions. Each question carries 3 marks. (10Qx 3M= 30)**

1. Mention any two advantages of mean [C.O.1 - Knowledge]
2. Mention any two advantages of median. [C.O.1 - Knowledge]
3. Define positional values and give an example. [C.O.2 - Knowledge]
4. Write the formula for quartile deviation and coefficient of quartile deviation.

[C.O.2 - Knowledge]

1. Compute range for the following set of values. [C.O.2 - Knowledge]

18 29 38 10 46 9

1. Define random experiment and give an example. [C.O.3 - Knowledge]
2. What is a sample space? Give an example. [C.O.2 - Knowledge]
3. What are mutually exclusive events? Give an example. [C.O.1 - Knowledge]
4. What are complimentary events? Give an example. [C.O.1 - Knowledge]
5. Define the addition rule of probability for any two events. [C.O.3 - Knowledge]
6. Provide any two application of Mode in business. [C.O.4 - Knowledge]
7. Define correlation. Give examples. [C.O.1 - Knowledge]

**PART B**

**Answer any 4 Questions. Each question carries 10 marks. (4Qx 10M= 40)**

1. The following are the room price (in $) paid by U.S. travellers in six British cities in 2020: 185 160 126 116 112 105, Compute mean and median. [C.O.1 - Application]
2. The following are the cost per ounce ($) for a sample of 14 dark chocolate bars: 0.57 1.51 0.57 0.55 0.86 1.41 0.90 0.68 0.72 0.92 1.14 1.42 0.94 0.77. Compute median and mode. [C.O.2 - Application]
3. The radio music listener market is diverse. Listener formats might include adult contemporary, album rock, top 40, oldies, rap, country and western, classical, and jazz. In targeting audiences, market researchers need to be concerned about the ages of the listeners attracted to particular formats. Suppose a market researcher surveyed a sample of 170 listeners of country music radio stations and obtained the following age distribution.

**Age Frequency**

* 1. 15–under 20 9
  2. 20–under 25 16
  3. 25–under 30 27
  4. 30–under 35 44
  5. 35–under 40 42
  6. 40–under 45 23
  7. 45–under 50 7
  8. 50–under 55 2

Compute Q1 and Q3. [C.O.3 - Application]

1. The radio music listener market is diverse. Listener formats might include adult contemporary, album rock, top 40, oldies, rap, country and western, classical, and jazz. In targeting audiences, market researchers need to be concerned about the ages of the listeners attracted to particular formats. Suppose a market researcher surveyed a sample of 170 listeners of country music radio stations and obtained the following age distribution.

**Age Frequency**

* 1. 15–under 20 9
  2. 20–under 25 16
  3. 25–under 30 27
  4. 30–under 35 44
  5. 35–under 40 42
  6. 40–under 45 23
  7. 45–under 50 7
  8. 50–under 55 2

Compute P25 and P50 [C.O.4 - Application]

1. According to the U.S. Bureau of Labour Statistics, 75% of the women 25 through 49 years of age participate in the labour force. Suppose 78% of the women in that age group are married. Suppose also that 61% of all women 25 through 49 years of age are married and are participating in the labour force. What is the probability that a randomly selected woman in that age group is married or is participating in the labour force? [C.O.4 - Application]
2. According to Nielsen Media Research, approximately 67% of all U.S. households with television have cable TV. Seventy-four percent of all U.S. households with television have two or more TV sets. Suppose 55% of all U.S. households with television have cable TV and two or more TV sets. A U.S. household with television is randomly selected. What is the probability that the household has cable TV or two or more TV sets? [C.O.3 - Application]

**PART C**

**Answer the following Questions. (2Qx 15M= 30)**

1. The marketing manager of a large supermarket chain would like to use shelf space to predict the sales of pet food. A random sample of 12 equal- sized stores is selected, with the following results. Compute the correlation coefficient. [C.O.2 - Analysis]

**Store Shelf Space (*X*) (Feet) Weekly Sales (*Y*) ($)**

1 5 160

2 5 220

3 5 140

4 10 190

5 10 240

6 10 260

7 15 230

8 15 270

9 15 280

10 20 260

11 20 290

12 20 310

1. A random sample of voters in Kota, Rajasthan, is classified by age group, as shown by the following data. Compute coefficient of variation. [C.O.4 - Analysis]

**Age Group Frequency**

18 – 24 17

24 – 30 22

30 – 36 26

36 – 42 35

42 – 48 33

48 – 54 30

54 – 60 32

60 – 66 21

66 – 72 15