ZIAUDDIN UNIVERSITY
EXAMINATION BOARD

# EXAMINATION MATERIAL ZUEB - 2022

## BUSINESS STATISTICS XII

## SECTION "B"

## CONSTRUCTED RESPONSE QUESTION (CRQ'S)

## 01) Introduction to Statistics:

### Question no.01.

a) Definition of Statistics ?

b) Define discrete and continuous variables with examples.

### Question no.02.

**a)** Describe the Types of statistics.

**b)** Sources of Primary data and Secondary data.

### Question no.03.

**a)** Briefly explain the Statistics Terminology. ( any 2)

**b)** Differentiate between Primary data and Secondary data.

### Question no.04.

**a)** Explain the importance of Statistics in different field.

**b)** Differentiate between Qualitative and Quantitative Data.

# 02) Presentation of Data:

## Question no.01:

a) Define Frequency Distribution.

b) The following data give the record of wages (in Rs.) of 30 workers in a factory:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 127 | 129 | 131 | 122 | 124 | 112 | 114 | 137 | 114 | 126 |
| 129 | 124 | 126 | 134 | 128 | 121 | 129 | 135 | 118 | 132 |
| 127 | 119 | 133 | 131 | 125 | 134 | 117 | 116 | 131 | 134. |

Prepare a fequency distribution, taking class- intervals as 110 – 114, 115 – 119, 120 – 124, …….. etc.

## Question no.02:

The following data represents the prices of a commodity in rupees:

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 125 | 126 | 135 | 132 | 130 | 128 | 123 | 122 | 131 | 130 | 120 | 135 | 121 |
| 128 | 126 | 132 | 134 | 135 | 137 | 132 | 138 | 129 | 130 | 124 | 126 | |

Prepare a frequescy distribution taking an interval of size 5.

**Also find:**

a) Percentage frequency.

b) Relative frequency.

## Question no.03:

The following data represents the grades of thirty students:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 23 | 32 | 36 | 41 | 10 | 25 | 41 | 43 | 15 | 34 |
| 17 | 5 | 1 | 16 | 8 | 15 | 46 | 45 | 39 | 33 |
| 12 | 32 | 18 | 31 | 24 | 28 | 33 | 27 | 4 | 34 |

(a) Construct a frequency distribution through tally sheet by forming the groups 1 – 5, 6 – 10, 11 – 15, and so on.

(b) Construct from (a) above, the cumulative frequency distribution ‘more than’ and relative frequency distribution.

# 03) Graphs & Diagrams:

## Question no.01:

Draw a pie diagram in your answer script of the following data:

| Category | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| Frequency | 09 | 12 | 57 | 24 | 10 | 08 |

## Question no.02:

Draw a multiple Bar Diagram of the following data:

| **Country** | **Birth Rate** | **Death Rate** |
|---|---|---|
| Pakistan | 50 | 20 |
| Japan | 45 | 15 |
| England | 15 | 10 |
| Egypt | 40 | 15 |
| Turkey | 10 | 14 |

## Question no.03:

Draw a Pie Chart on your answer script from the following data:

| **Items** | Food | Clothing | Rent | Medical | Other |
|---|---|---|---|---|---|
| **Expenditure in (Rs.)** | 96 | 32 | 50 | 23 | 40 |

# 04) Averages:

## Question no.01:

If the mean of the following numbers is 12, find the value of k:

10, 15, 20, 08, 12, 05, 17, 13, k, 04.

## Question no.02:

For the data 101, 102, 103, 104, 105 and y = x – 100, Find $\bar{x} - \bar{y}$

## Question no.03:

For the given data: 23, 18, 28, 15, 23, 19. Verify that the sum of the deviations from mean is zero. i.e., $\sum(x - \bar{x}) = 0$.

## Question no.04:

The mean of 30 values is computed as 15. the mean of another data containing 20 values is computed as 10 and the mean of 10 values is computed as 18. Find the combine mean.

## Question no.05:

The mean of 10 numbers is 8. If the eleventh number is included in the data, the mean becomes 9. What is the eleventh number?

## Question no.06:

The mean of a data of 25 values is 58. At the time of checking, it was found that a value 35 has been wrongly entered as 53. Find correct value of the mean of the data.

## Question no.07:

Calculate the median from the following observations:

30, 32, 40, 28, 26, 44,52, 60.

## Question no.08:

Mean and median of a moderately skewed distribution are 90 and 80 respectively. Using empirical relation find mode.

## Question no.09:

Calculate the arithmetic mean for the following:

| x | 45 | 50 | 55 | 60 | 65 |
|---|---|---|---|---|---|
| f | 25 | 20 | 15 | 10 | 5 |

# 05) Index Number:

## Question no.01:

Find price relative taking 2005 as base year for the given data:

| Year | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|
| Price | 200 | 220 | 240 | 230 | 250 | 270 |

## Question no.02:

Construct **chain indices** from data given below:

| Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 |
|---|---|---|---|---|---|---|---|---|
| Price | 65 | 70 | 74 | 80 | 86 | 90 | 95 | 98 |

## Question no.03:

The following data calculate price index taking **1995 as base year** using simple aggregative method:

| Commodity | Prices | | |
|---|---|---|---|
| | 1995 | 1996 | 1997 |
| A | 10 | 12 | 14 |
| B | 50 | 58 | 66 |
| C | 140 | 150 | 160 |

## Question no.04:

Find price index numbers for the years 1983, 1984 and 1985 from the following data using average of relative method. Take 1982 as base year.

| Years | Price of Commodities | | |
|---|---|---|---|
| | Wheat | Rice | Sugar |
| 2012 | 1.50 | 1.20 | 2.80 |
| 2013 | 1.75 | 1.40 | 3.00 |
| 2014 | 2.00 | 1.50 | 3.25 |
| 2015 | 2.25 | 1.60 | 3.40 |

## Question no.05:

Construct chain indices from the following data.

| Items | Prices | | |
|---|---|---|---|
| | 2013 | 2014 | 2015 |
| X | 30 | 34 | 37 |
| Y | 90 | 99 | 105 |
| Z | 02 | 05 | 07 |

# 06) Probability:

## Question no.01:

A committee consists of 10 peoples. It is decided to appoint a chairman, a vice chairman and a secretary. How many different ways can this be done.

## Question no.02:

How many motor cycle number plates can be made if each plate contains 2 different letters followed by 3 different digits.

## Question no.03:

How many ways can 4 people be lined up to get on a bus.

## Question no.04:

Seven players of Pakistan's Hockey team can play in any of the five forward line positions. In how many ways can these positions be filled.

## Question no.05:

In how many ways can the letters of the word STATISTICS be arranged.

## Question no.06:

In how many ways can the city football team of 11 players be selected from 16 players.

## Question no.07:

A six – sided die is tossed only once. What is the **probability** of getting?

i) an even number. (ii) a 4 or a higher number. (iii) a 7.

## Question no.08:

A fair coin is tossed three times. What is the probability of getting;

(a) exactly two heads. (b) at least two heads.

## Question no.09:

If a card is drawn at random from an ordinary pack of 52 playing cards. Find the probability that the card;

a) Diamond card. (b) Face card.