

Business Statistics

(November 2016)

1st Term Test

Grade 12

Paper I

Time: 01 hour 28.11.2016

Answer all Questions.



1. Which of the following statements is true?

- (1) Statistical studies is a process of making decisions by studying individual items.
- (2) Relatively accurate results can be expected in statistics.
- (3) Descriptive statistics pays attention on decision making techniques.
- (4) Inability of studying qualitative data is a main limitation in statistics.
- (5) Statistical studies cannot be done when there are infinite populations.

2. Which of the following statements is false?

- (1) In statistical studies secondary data is also important as primary data.
- (2) Collecting data by an employee's survey in a company is an example for primary data.
- (3) Secondary data should not be accepted as it is.
- (4) Employees attendance register is an internal data as well as a primary data.
- (5) Reliability is not a base for separating primary and secondary data.

3. Which of the following statements is true?

- (1) Schedule is used in telephone conversation method.
- (2) Order of questions is not influence on response rate.
- (3) When expecting high response rate, data should be collected through self enumeration method.
- (4) It is compulsory to include two choice questions, multiple choice questions and free answer questions in a questionnaire.
- (5) When financially burdened, it is suitable to collect data through personal interview method.

4. In order to present quarterly exports and imports for 5 years, the most appropriate diagram would be,

- (1) Simple bar chart
- (2) Multiple bar chart
- (3) Component bar chart
- (4) Mode diagram
- (5) Line graph.

5. The most appropriate diagram to present composition of government loans as domestic loans and foreign loans for last few years is,

- (1) Simple bar chart
- (2) Multiple bar chart
- (3) Component bar chart
- (4) Mode diagram
- (5) Pictorial diagram

6. Most appropriate chart to present decentralization of a product among companies is,

- (1) Z chart
- (2) Lorenze curve
- (3) Pie chart
- (4) Component bar chart
- (5) Multiple bar chart

7. Following stem and leaf diagram provides weights of group of students.

Stem	Leaf
4	2 5 8 9
5	1 2 2 5 7 8 9
6	0 2 3 6 8 9
7	2 4 6

Third quartile of weights distribution is.

- (1) 51.25 (2) 53.75 (3) 61.5 (4) 66 (5) 67.5

8. Consider the following statements,

- A- Data should edit before analyzing.
B- Completeness of a questionnaire is tested by editing
C- Elimination of unclear questions is a function of editing.

Which of the above statements is /are true?

- (1) A only (2) B only (3) A and B only (4) A and only (5) A, B, and C

9. Which of the following statements is true?

- (1) Only short term fluctuations can be identified by a Z curve.
(2) In a Z curve cumulative value and original data intersect each other at last time period.
(3) Lorenze curve is used to present inequity of two variables.
(4) All information in set of data are presented by a table
(5) Mode diagram can be used to compare domestic and foreign loans of a country for few years.

10. Out of total cost of a company 40% paid for advertising and 25% paid for storing. If the difference between advertising expenses and storage expenses is 6 million, the total cost of the company is,

- (1) 240 (2) 150 (3) 80 (4) 60 (5) 40

11. In a frequency distribution, frequency of a class interval is 24 and relative cumulative frequency is 0.6 and relative cumulative frequency of preceding class interval is 0.48. Total frequency of this distribution is,

- (1) 80 (2) 120 (3) 160 (4) 200 (5) 240

12. Which of the following statements is true about moderately skewed distribution.

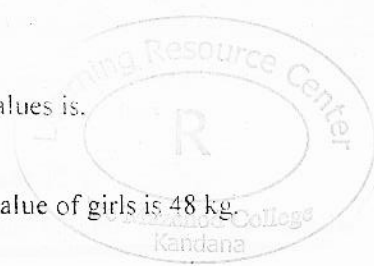
- (1) $\bar{X} - Md = 3(\bar{X} - Mo)$ (2) $\bar{X} - 2Md = Mo$ (3) $Mo - 2\bar{X} = 3Md$ (4) $\bar{X} - Mo = 2(\bar{X} - Md)$ (5) $3Md - Mo = \bar{X}$

13. A frequency distribution with $Q_2 - Q_1 = 1/3(Q_3 - Q_2)$ is,

- (1) Negatively skewed
(2) Positively skewed
(3) Symmetrical
(4) Can be negatively skewed or positively skewed
(5) Cannot say exactly.

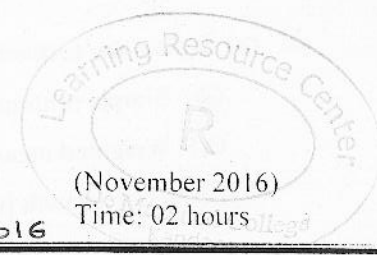
14. A frequency distribution with $Q_3 - Q_1 = 1/5(P_{90} - P_{10})$ is,

- (1) Meso kurtic
(2) Lepto kurtic
(3) Platy kurtic
(4) Normal distribution
(5) Distribution which is having high peak than normal distribution.



15. Mean of 100 values is 65 and mean of other 150 values is 70. Mean value of all these values is.
(1) 67 (2) 67.5 (3) 68 (4) 68.5 (5) 69
16. Mean value of 150 students in a class is 54 kg. Mean value of boys is 57 kg and mean value of girls is 48 kg. Number of girls and boys in that class are.
(1) 60,90 (2) 90,60 (3) 100,50 (4) 50,100 (5) 80,70
17. In an university examination 40% of weight assigned for each written test and 20% of weight assigned for practical test. If a student obtained 85 and 70 for two written tests and 80 for practical test, the marks that he obtained for this subject is,
(1) 72 (2) 75 (3) 76 (4) 78 (5) 80
18. Geometric mean of 9,27,81 is,
(1) 27 (2) 30 (3) 33 (4) 36 (5) 39
19. Mean speed of a motor vehicle which passes two equal distances with speed of 60kmph and 90kmph is,
(1) 66 (2) 70 (3) 72 (4) 75 (5) 80
20. Mean of 50 observations was 80. 10 is added to each first 20 observation and 5 is added to each second 20 observation and 4 subtracted from each last 10 observation. New mean of set of data is,
(1) 85.2 (2) 84.6 (3) 83.2 (4) 82.8 (5) 82.5
21. Total value of set of data with 10 units is 200 and summation of square values of 10 units is 6250. Standard deviation of set of data is,
(1) 25 (2) 20 (3) 15 (4) 10 (5) 5
22. Total of 50 observations is 2000 and sum of squares of deviation of those observations is 3200. Coefficient of variation of these 50 observations is,
(1) 40 (2) 20 (3) 25 (4) 20 (5) 8
23. Amount of rice sold by a super market during 5 week days are as follows.
- | Date : | Monday | Tuesday | Wednesday | Thursday | Friday |
|---------------|--------|---------|-----------|----------|--------|
| No. of units: | 215 | 205 | 230 | 220 | 240 |
- Absolute mean deviation of these set of data is,
(1) 5.2 (2) 6.4 (3) 8.6 (4) 9.8 (5) 10.4
(2)
24. Deepness of a lake is measured in 50 places and following measures were obtained (in feets).
 $\sum X = 600$ $\sum X^2 = 11250$
After computing mean and standard deviation, water level of the lake decreased by 5 feet. New mean and standard deviation is,
(1) 12,9 (2) 7,9 (3) 12,4 (4) 12,81 (5) 7,81
(2)
25. Coefficient of kurtosis of normal distribution curve is,
(1) 0.25 (2) 0.263 (3) 0.5 (4) 1 (5) 0

De Mazenod College – Kandana
Business Statistics



Grade 12
Paper 2

1st Term Test

28-11-2016

(November 2016)

Time: 02 hours

Answer at least one question from first two questions and question number three.

1. (a) State practical importance of statistical techniques in business field. (04 marks)
- (b) Explain self enumeration method used in collection of primary data.
Mention its merits and demerits. (06 marks)
- (c) What is the difference between pretesting and editing? Why they are important in statistics. (06 marks)

(d) Information on weights of 25 students are given below.

Stem	Leaf
3	6 8
4	1 3 4 6 7 8
5	0 2 2 4 5 5 6 7 8 9
6	0 1 3 3 6 8 9

Prepare box and whisker diagram and state your ideas about the nature of the distribution.

(05 marks)

(e) Information on marks of students in a class are as follows.

Marks	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90
No. of Students	5	8	10	14	12	9	7	3

Draw a less than ogive and find number of students who obtained marks in between 35 and 60.

(04 marks)

2. (a) Mention four factors that should be considered when selecting a suitable method for data presentation. (04 marks)
- (b) What is meant by a table?
What are the characteristics that should be included in a complete table? (05 marks)
- (c) What is meant by a pie chart?
Mention two situations where data can be effectively presented by a pie chart?
What are the problems that may be occur when using a pie chart to present data.

(06 marks)

(d) Monthly production of a company for last few years are given below.

Month	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Production in 2014	28	36	48	72	64	52	44	38	46	54	62	88
Production in 2015	42	48	58	90	76	64	52	42	56	68	80	102

Draw a Z curve for year 2015 and comment on it.

(07 marks)

- (e) Explain the method of constructing a bar chart in order to present positive and negative values using a suitable example. (03 marks)

3. (a) Explain the following terms.

(i) Simple arithmetic mean

(iii) Geometric mean

(ii) Weighted mean

(iv) Harmonic mean

(04 marks)

(b) Economic growth percentages of a country for last 5 years are given below.

4.8% 2.1% -1.2% -2.4% 3.2%

Calculate mean economic growth percentage for 5 years.

(04 marks)

(c) Explain, skewness and kurtosis.

Calculate a suitable measure of skewness and coefficient of kurtosis for a data series with $Q_1=42$

$Q_3=74$, $P_{10}=28$, $P_{90}=82$ and median 56. State the nature of the distribution.

(05 marks)

(d) The weights of students in a class is given in the following distribution.

Weight (kg)	45-49	50-54	55-59	60-64	65-69	70-74	75-79
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No. of students	6	12	15	21	18	16	12
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(i) Compute mode, median, mean, variance, standard deviation of the frequency distribution.

(ii) Draw the frequency polygon by constructing a histogram.

(iii) If 1 kg = 2.2 pounds, state mean, variance and standard deviation of weights of students in pounds.

(12 marks)