# Sanjay Ghodawat University, Kolhapur

2017-18

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

**FY BBA** **School of Commerce & Management**

**MBC 104** **Quantitative techniques for management (old)** **Sem I**

Tuesday 24 DEC2019 **Examination: End Semester Exam, Max Marks: 100,Time3 Hrs** 10.30am to 1.30pm

**Instructions**: 1) All Questions are compulsory.

| | | Marks | COs |
|---|---|---|---|
| Q.1 | Solve the following | | |
| a) | State whether True & False ( any 5) | 10 | |
| | 1. Nationality of the Student is an attribute. | | CO104.1 |
| | 2. Graph is a Line diagram | | CO104.1 |
| | 3. Range of set of observation is the difference between largest and smallest of observations | | CO104.2 |
| | 4. Dispersion measures the scatteredness of set of observations | | CO104.3 |
| | 5. Rank correlation coefficient lies between -1 to +1 inclusive of these value. | | CO104.4 |
| | 6. Measure of central tendency for a given set of observations measures the central location of the observations. | | CO104.4 |
| b) | Answer the short questions (any 5) | 10 | |
| | 1. Scatter diagram | | CO104.1 |
| | 2. Correlation | | CO104.1 |
| | 3. Fisher Index number | | CO104.2 |
| | 4. Merits of mean | | CO104.3 |
| | 5. Components of time series | | CO104.4 |
| | 6. Standard deviation definition | | CO104.4 |



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Q.2 Solve/answer any Two

a) The production of the Wheat and the Rice are given below 10 CO104.1

| Year | Production in metric tones | |
|---|---|---|
| | Wheat | Rice |
| 2005 | 12 | 25 |
| 2006 | 15 | 30 |
| 2007 | 18 | 32 |
| 2008 | 19 | 36 |
| 2009 | 21 | 39 |

Represent the information by Line chart and Bar chart

b) The following data represents the number of foreign tourists arrived in India during the period 2016 -2019. 10 CO104.1

| Country | Number of tourist arrived | | |
|---|---|---|---|
| | 2016-17 | 2017-18 | 2018-19 |
| China | 3110 | 3340 | 3245 |
| Japan | 6393 | 7245 | 8384 |
| Srilanka | 2114 | 2045 | 2097 |
| Australia | 3432 | 2849 | 3249 |
| Bangladesh | 6492 | 6492 | 6990 |

Construct a histogram and pie chart for the data.

c) Define statistics and explain application statistics 10 CO104.1

Q.3 Solve/answer any Two

a) Calculate the Mean ,Median and Mode for the following data 10 CO104.2
8, 4,12,15,10,9,6,7,13,11,13,12,7,5

b) Compute the Range and Quartile deviation for the following data 10 CO104.2
12,13,15,16,17,10,14,11

c) Find the SD of the following distribution 10 CO104.2

| Weight (kg) | 15-30 | 30-45 | 45-60 | 60-75 | 75-90 | 90-105 | 105-120 |
|---|---|---|---|---|---|---|---|
| No. of Students | 12 | 18 | 29 | 35 | 27 | 21 | 13 |



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Q.4 Solve/answer any Two

a) On the basis of the following information determine regression of Y on X 10 CO104.3

$\Sigma X = 231$ $\Sigma Y = 498$ $\Sigma X^2 = 4903$ $\Sigma Y^2 = 21582$ $\Sigma XY = 10211$ $N = 12$

b) Find the coefficient of correlation between the following data 10 CO104.3

| X | 60 | 55 | 62 | 56 | 62 | 64 | 70 | 54 |
|---|---|---|---|---|---|---|---|---|
| Y | 31 | 28 | 26 | 24 | 30 | 35 | 28 | 24 |

c) Find out spearman's Rank correlation coefficient for the following data 10 CO104.3

| X | 21 | 26 | 25 | 29 | 25 | 27 | 25 | 27 |
|---|---|---|---|---|---|---|---|---|
| Y | 42 | 49 | 47 | 52 | 49 | 50 | 48 | 51 |

Q.5 Solve/answer the following

a) Compute Fishers index from the following data 10 CO104.4

| Commodities | Base year | | Current Year | |
|---|---|---|---|---|
| | Price | Quantity | Price | Quantity |
| A | 4 | 3 | 6 | 2 |
| B | 5 | 4 | 6 | 4 |
| C | 7 | 2 | 9 | 2 |
| D | 2 | 3 | 1 | 5 |

b) Calculate Three years moving average and draw a graph to represent the moving average 10 CO104.4

| Year | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|---|---|---|---|---|---|---|---|---|---|
| No. of student | 160 | 156 | 150 | 136 | 130 | 155 | 135 | 177 | 133 |

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