

**Avinashilingam Institute for Home Science and Higher Education for Women  
[Deemed to be University] Coimbatore-641 043**

**Bachelor's Degree Examination – November 2018  
III Semester**

**Class : II UG  
Major : Economics**

**Time: 3 hours  
Max. Marks: 100**

**15BECC09 Statistical Methods**

**Part-A**

**10 x 1=10**

**Choose the correct answer**

1. Statistics is a form of mathematical analysis that uses
  - a. quantified models
  - b. qualitative models
  - c. economic models
  - d. mathematical models
2. Qualitative data can be collected through
  - a. individual interviews
  - b. focus groups
  - c. observations
  - d. all the above
3. Diagrammatic representation can be used for the
  - a. only for educated section of the society
  - b. educated section and uneducated section of the society
  - c. only for uneducated section of the society
  - d. none of these
4. A graphical device for understanding the shapes of distributions is known as
  - a. mean deviation
  - b. histogram
  - c. frequency polygon
  - d. cumulative frequency
5. The formula for mean is
  - a.  $\frac{\sum X}{N}$
  - b.  $\frac{dy}{dx}$
  - c.  $\frac{\sum X}{N}$
  - d.  $\frac{\Delta y}{\Delta x}$
6. The skewness value can be
  - a. positive
  - b. negative
  - c. undefined
  - d. all the above
7. The scatter diagram is used to find the
  - a. regression between the variables
  - b. correlation between two variables
  - c. rank correlation
  - d. direction of graph
8. Rank correlation coefficient can be used to summarize the strength and direction of
  - a. indirect relationship
  - b. correlation in the group
  - c. relationship between two variables
  - d. relationship among variables
9. A linear regression line has an equation of the form
  - a.  $Y = a + bX$
  - b.  $ex^2$
  - c.  $\frac{\partial y}{\partial x}$
  - d.  $Y = a + bX^2$
10. The standard error of the estimate is a measure of
  - a. non parametric technique
  - b. errors
  - c. standard deviation
  - d. the accuracy of predictions

**Part B**

**5X6=30**

**Answer the following**

**Answer should not exceed 400 words or two pages**

- 11.a. What are the uses of statistics?  
(or)
- 11.b. Discuss about probability sampling.
- 12.a. What are the differences between diagram and graph?  
(or)
- 12.b. What are the features of frequency polygon?

13.a. Calculate the mean for the following frequency distribution

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of students	6	5	8	15	7	6	3

(or)

13.b. The following table gives the age distribution of a group of 50 individuals

Age	16-20	21-25	26-30	31-35
No. of persons	10	15	17	8

Calculate range and the coefficient of range.

14.a. What are the features of scatter diagram?

(or)

14.b. Two judges in a beauty competition rank the 12 entries as follows:

X	1	2	3	4	5	6	7	8	9	10	11	12
Y	12	9	6	10	3	5	4	7	8	2	11	1

Compute the rank correlation.

15.a. From the following data obtain the regression equation of X on Y

X	1	2	3	4	5	6	7	8	9
Y	9	8	10	12	11	13	14	16	15

(or)

15.b. What are the differences between correlation and regression?

### Part C

5x12=60

Answer the following

Answer should not exceed 800 words or four pages

16.a. Explain various data collection methods

(or)

16.b. Discuss different methods of sampling

17.a. Draw a histogram from the following data

Mid value	15	25	35	45	55	65	75
Frequency	10	24	40	32	20	14	4

(or)

17.b. Draw a cumulative frequency curve for the following data:

Marks	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	3	9	15	30	18	5

18.a. Calculate the value of median and two quartiles for the data given below:

Income('000)	1	1-2	2-3	3-5	5-10	10-25	25-50	50-100	100-1000
No. of persons	13	90	81	117	66	27	6	2	2

(or)

18.b. The marks obtained in statistics by 10 students of B.Com is given in the table, calculate standard deviation

Reg.No	1	2	3	4	5	6	7	8	9	10
Marks	43	48	65	57	31	60	37	48	78	59

19.a. Find Karl Pearson's coefficient of correlation between values of X and Y given below and calculate the probable error

X	78	89	96	69	59	79	68	61
Y	125	137	156	112	107	136	123	108

(or)

19.b. Calculate the coefficient of skewness for the following data

Height inches	58	59	60	61	62	63	64	65
No. of persons	10	18	30	42	35	28	16	8

20.a. Find the regression line of Y on X for the following data and estimate Y when X = 9

X	18	26	28	31	25	19	35
Y	11	16	19	17	14	11	24

(or)

20.b. Write an essay on linear and non-linear regression.