Class:	B.Com		
Semester (UG - III & V; PG - III) :	UG-III	Subject Code :	CCRJC34
Name of the Subject :	Business Statistics		

Section A (Multiple Choice Questions)

Unit I: (Statistics -introduction)

1. Statistics can be considered as

(a) Arts   (b) Science   (c) Both (a) and (b)   (d) Neither (a) nor (b)

2. Secondary data

(a) should never be used   (b) should be used after careful scrutiny   (c) No scrutiny is required while using it   (d) while scrutinizing the only thing to see is who collected it

3. which of the following sample is not a probability sample design?

(a) Stratified Sampling   (b) cluster sampling   (c) Quota sampling   (d) judgement sampling

4. classification is the process of arranging data in

(a) Different columns   (b) different rows   (c) Different rows and columns   (d) Grouping of related facts in different classes

5.Diagram and graphs are tools of:

(a) Collection   (b) analysis   (c) presentation   (d)summarization

Unit II: (Central value and Dispersion)

1. Which average is affected most by extreme observations?

(a) Mode   (b) Median   (c) Arithmetic Mean   (d) Geometric Mean

2. for dealing with qualitative data the best average is

(a) Mean   (b) Mode   (c) Median   (d) Combined Mean

3. the sum of deviation taken from arithmetic mean

(a) Maximum   (b) Minimum   (c) Zero   (d) Positive

4. the appropriate measure whenever the extreme items are to be disregarded and when the distribution contains indefinite classes at the end is

(a) Mode   (b) Quartile deviation   (c) Median   (d) Mean

5. Which of the following is a relative measure of dispersion

(a) variance   (b) co-efficient of variance   (c) standard deviation

(d) Quartile deviation

Unit III: (Skewness and Correlation)

1.When coefficient of skewness is zero, the distribution is:

(a) J shaped   (b) U shaped   (c) V shaped   (d) bell shaped

2. A Negative co-efficient of skewness

(a) Mean>Mode   (b) Mean<mode (c) Mean = Mode   (d) Median<Mean

3. Karl Pearson's Coefficient of skewness

(a) always Zero   (b) always Positive   (c) Always Negative

(d) can be Positive, Negative and Zero

4. the co-efficient of correlation

(a) has no limits   (b) can be less than 1   (c) can be more than 1

(d)varies between ±1

5. the value r^2 for a particular situation is 0.81What is co-efficient of correlation

(a) 0.09   (b)0.9   (c) 9   (d)0.009

Unit IV: (Regression)

1. The greater the value of r

(a) The better are estimates, obtain through regression analysis.   (b) The worst
are the estimates   (c) Really makes no difference.   (d)   really
make difference

2. Where r is zero the regression lines cut each other making an angle of

(a) 30°   (b) 90°   (c) 60 (d) None of these.

3. The farther the two regression lines cut each other:

(a) Greater will be degree of correlation

(b) The lesser will be the degree of correlation

(c) Does not matter.

(d) No degree of correlation

4. The regression lines cut each other at the point of:

(a) Average of X and Y   (b) Average of x only   (c) Average of x and y only   (d) None of the above

5. When the two regression lines coincide, then r is:

(a) 0   (b) -1   (c) 1   (d) 0.5.

Unit V: (Time Series Analysis)

1. which of the following components is used for a short-term forecast?

(a) trend   (b) seasonal   (c) cyclical   (d)irregular

2. Seasonal variations repeat during a period of

(a) one year   (b) Five-year   (c) fifteen-year   (d)ten year

3. the trend is linear if

(a) growth rate is positive   (b) Growth rate is negative   (c) Growth rate is constant   (d) growth rate is no constant

4. the most important factors causing seasonal variations are

(a) Population   (b) Depression in business   (c) Weather   (d) strike

5. if the trend is absent, seasonal indices are known by

(a) Link relative method   (b) Ratio to moving average method   (c) Ratio to trend method   (d) Simple average method

Section B (7 mark Questions)

Unit I: (Statistics -introduction)

1. Narrate the importance of statistics
2. What are the general rules for graphing the data?
3. The data below give the yearly profits (in 00000 of rupees) of the two companies A and B

Year	Profits in Lakhs	
	Company A	Company B
2014	120	90
2015	135	95
2016	140	108
2017	160	120

Represent the data by means of a suitable diagram

4. Present the following data in a suitable tabular form, supplying the figures not directly given:

In 2016, out of 2000 workers in a factory, 1550 were members of trade union. The number of women workers employed was 250, out of which 200 did not belong to any trade union.

In 2017, the number of union workers was 1,725of which 1,600were men. The number of non-union workers was 380, among whom 155 were women

5. Distinguish between primary data and secondary data

Unit II: (Central Value and Dispersion)

6. If in a moderately asymmetrical frequency distribution, the values of median and arithmetic mean are72 and 78 respectively, estimate the value of the mode

7. Calculate geometric mean of the following: 50,72,54, 82, 93

8. Calculate H.M. from the following data

X	6	7	8	9	10	11
f	4	6	9	5	2	8

9. Calculate the QD and its Co-efficient

Age in years	20	30	40	50	60	70	80
No. of members	3	61	132	153	140	51	3

10. Calculate mean deviation from the following series

X	10	11	12	13	14
F	3	12	18	12	3

Unit III: (skewness and correlation)

11. From the marks secured by 120 students in section A and 120 Students in Section B of class, the following measures are obtained:

Measurement	Section A	Section B
AM	46.83	47.83
SD	14.8	14.8
Mode	51.67	47.07

Determine which distribution of marks is more skewed

12. In frequency distribution the co-efficient of skewness based on quartiles is0.6. if the sum of upper and lower quartile is 100 and the median is 38, find the value of the upper quartiles

13. What are the tests of skewness?

14. What is a scatter diagram? How does it help us studying the correlation between variables?

15. Calculate Karl Pearson's Co-efficient of Correlation

X	2	4	6	8	10
Y	12	14	16	18	20

Unit IV: (Regression)

16. What are properties of the regression co-efficient?

17. Given the following data, find two regression equation

Measurement	X	Y
AM	36	85
SD	11	8
Correlation	0.66	

18. From the following data calculate two regression equation

Measurement	X	Y
AM	40	60
SD	10	15
Correlation	0.7	

19. Find the most likely production corresponding to a rainfall40" from the following data

Measurement	Rainfall	Production

AM	30"	500KG
SD	5"	100KG
Correlation	0.8	

20. Two random variables have the following regression equations:

$3X+2Y-26 = 0$

$6X+Y-31 = 0$

Find the mean values

Unit V: (Time Series Analysis)

21. What is time series? List out its components

22. What is secular trend? Explain anyone of the method of measuring the trend of time series

23. What is moving Average? What are its uses in time series?

24. Fit a trend line with help of semi-average

Year	2011	2012	2013	2014	2015	2016	2017
Value	65	85	95	75	100	80	130

25. Calculate three yearly moving average of following data

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
No. of students	15	18	17	20	23	25	29	33	36	40

Section C (10 mark Questions)

Unit I: (Statistics- Introduction)

26. Discuss method of collecting data

27. Describe the Scope of Statistics

Unit II: (Central Value and Dispersion)

28. Calculate the mean, median and mode

Temp C	No. of Days
-40 to -30	10

-30 to -20	28
-20 to -10	30
-10 to 0	42
0 to10	65
10 to 20	180
20 to 30	10

29. The following data relate to the age of a group of workers. Calculate the arithmetic mean and standard deviation

Age	20-25	25-30	30-35	35-40	40-45	45 – 50	50- 55
No. of workers	170	110	80	45	40	30	25

Unit III: (Skewness and correlation)

30. Find the Karl Pearson's Co-efficient of Skewness

Variable	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
Frequency	2	5	7	13	21	16	8	3

31. Calculate Spearman Rank Correlation from the following Data

X	45	55	56	58	60	65	68	70	75	80	85
Y	56	50	48	60	62	64	65	70	74	82	90

Unit IV: (Regression)

32. Distinguish clearly between Correlation and regression analysis

33. From the following data find the co-efficient of correlation and obtain the two regression equations

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

Unit V: (Time Series Analysis)

34. Fit a straight-line trend by the method of least square to the following data and calculate trend values

Year	2013	2014	2015	2016	2017
Sale of TV sets (in lakhs)	4	6	7	8	9

35. Enlighten the importance of time series analysis in Business forecasting