

E 8456

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Reg. No.....

Name.....

B.B.A. DEGREE (CBCS) EXAMINATION, JANUARY/FEBRUARY 2018

First Semester

Complementary—FUNDAMENTALS OF BUSINESS STATISTICS

(2017 Admissions)

Time : Three Hours

Maximum Marks : 80

Part A

*Answer any ten of the following.
Each question carries 2 marks.*

1. How Statistics is related to Business ?
2. Explain Pie diagram.
3. Write down the merits and demerits of Geometric Mean.
4. A cyclist pedals from his house to his college at a speed of 10 km.p.h. and back from college to his house at 15 k.m.p.h. Find the average speed.
5. Differentiate between Correlation and Regression.
6. Explain cyclic variation.
7. What are the uses of time series ?
8. Explain Method of Semi average.
9. Write down the Normal equations for a second degree parabola.
10. Define Mode.
11. Explain Bar diagram.
12. If the correlation coefficient between the two variables X and Y is 0.4, then what is the correlation coefficient between $X + 3$ and $Y - 5$?

(10 × 2 = 20)

Part B

*Answer any six of the following.
Each question carries 5 marks.*

13. Explain the components of time series.

Turn over

14. The figures of production (in thousands of quintals) of a sugar factory from the year 2001 to 2007 are given below. Fit a straight line trend.

Year	:	2001	2002	2003	2004	2005	2006	2007
Production	:	80	90	92	83	94	99	92

15. Can $Y = 5 + 2.8X$ and $X = 3 - 0.5Y$ be the estimated regression equations of Y on X and X on Y respectively? Explain your answer with suitable theoretical arguments.
16. The following data related to area of cultivation in hectares of land (X) and agricultural output in Tones (Y).

		X	Y
Arithmetic mean	...	50	30
Standard deviation	...	5	2

Coefficient of correlation = 0.7

- (a) Calculate the regression equation of agricultural output on area of cultivation.
- (b) Estimate agricultural output when there are 80 hectares of land available.
17. Find the Median for the following distribution :—
- | | | | | | | | | | |
|----------------|---|--------|---------|---------|---------|---------|---------|---------|---------|
| Class Interval | : | 0 – 10 | 10 – 20 | 20 – 30 | 30 – 40 | 40 – 50 | 50 – 60 | 60 – 70 | 70 – 80 |
| Frequency | : | 5 | 8 | 7 | 12 | 28 | 20 | 10 | 10 |
18. What are the limitations of Statistics?
19. The average salary of male employees in a firm was Rs. 5,200 and that of female was Rs. 4,200. The mean salary of all the employees was Rs. 5,000. Find the percentage of male and female employees.
20. Write about Histogram.
21. For a group of 200 candidates, the mean and standard deviation of scores were found to be 40 and 15 respectively. Later on it was discovered that the scores 43 and 35 were misread as 34 and 53 respectively. Find the corrected mean and standard deviation corresponding to the corrected figures.

(6 × 5 = 30)

Part C

Answer any **two** of the following.
Each question carries 15 marks.

22. Ten recruits were subjected to a selection test to ascertain their suitability for a certain course of training. At the end of training they were given a proficiency test. The marks secured by recruits in the selection test (X) and in the proficiency test (Y) are given below. Obtain the product moment correlation and rank correlation for the data :

Serial No.	:	1	2	3	4	5	6	7	8	9	10
X	:	10	15	12	17	13	16	24	14	22	20
Y	:	30	42	45	46	33	34	40	35	39	38

23. (a) The following data shows the Domestic tourists visit in Kerala from the year 2008 to 2013. Draw the trend line by free hand curve method :

Year : 2008 2009 2010 2011 2012 2013

Domestic tourists : 70.59 79.13 85.95 93.81 100.76 108.57 (in millions).

- (b) Calculate trend values by 4 yearly moving average method :

Year : 2004 2005 2006 2007 2008 2009 2010 2011 2012

Profit : 100 110 111 90 99 98 99 87 75

24. (a) Scores of two persons were given :

A : 74 75 78 72 77 79 81 76 72 72 77 74 70 78 79

B : 86 84 80 88 89 85 86 82 79 86 80 82 76 86 89

Which player may be considered to be more consistent player ?

- (b) What are the advantages of Median ?

25. The following numbers given the weights of 36 students of a class. Prepare a suitable frequency table :

42 74 40 60 82 115 41 61 75 83 63 53 110 76 84 50 67 65 78 77
56 95 68 69 104 80 79 79 54 73 59 81 100 66 49 77

- (a) Draw a histogram and frequency polygon of the above data.
(b) Explain secondary method of data collection.

(2 × 15 = 30)