QP CODE: 21101987

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Name : .....

# B.COM DEGREE (CBCS)EXAMINATION, AUGUST 2021

## Third Semester

## Core Course - CO3CRT08 - QUANTITATIVE TECHNIQUES FOR BUSINESS- 1

(Common to all B.Com Degree Programmes)

2017 Admission Onwards

14CC0E31

Time: 3 Hours

Max. Marks : 80

### Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. List the limitations of statistics.
2. Discuss on non sampling error.
3. Discuss on simple classification.
4. Write a note on partition values.
5. Compute the artihmetic average of the weights of 8 persons: 80,88,67,72,65,73,69,82
6. Find median from the following;

| Wages (Rs.) | 250 | 450 | 650 | 850 |
|---|---|---|---|---|
| No of Workers | 12 | 27 | 21 | 20 |

7. Find out the harmonic mean of 2, 3 , 4 and 5.
8. Calculate mean deviation.
   10, 15, 19, 21, 25
9. What do you mean by a symmetrical distribution?
10. You are given the following values of Moments : $\mu_2$ is 44.553 , $\mu_3$ is 9.774 , $\mu_4$ is 5508.567 . Calculate Kurtosis.
11. Give the formula for 'Lagrange's method.
12. Write a short note on Extrapolation.

(10×2=20)

### Part B

*Answer any **six** questions.*

*Each question carries 5 marks.*

13. "Statistics is a rainbow of lies- An ounce of truth can produce tons of Statistics"- Comment on these statements.

14. Draft a questionnaire for collecting socio-demographic details of women workers in a factory.

15. Explain the theoretical base of sampling .

16. The mean of 100 items was 46. Later it was found out that one item was misread as 61 instead of 16 and another item 43 was misread as 34.The number of items was also wrongly taken as 90 instead of 100. what is the correct mean?

17. The following table gives the length of life of 150 electric lamps. Calculate mode.

| Life | 0-400 | 400-800 | 800-1200 | 1200-1600 | 1600-2000 | 2000-2400 | 2400-2800 | 2800-3200 |
|---|---|---|---|---|---|---|---|---|
| Frequency | 04 | 12 | 40 | 41 | 27 | 13 | 09 | 04 |

18. An economy grows at the rate of 2 % in the first year, 2.5% in the second year, 3 % in the third year, 4 % in the fourth year and so on : 10% in the tenth year. What is the average rate of growth of the economy?

19. The following is the distribution of wages of some workers.Determine quartile deviation and coefficient of quartile deviation.

| Wages (in Rs) | 20 | 32 | 61 | 75 | 82 | 95 |
|---|---|---|---|---|---|---|
| No. of Workers | 2 | 4 | 7 | 5 | 4 | 2 |

20. Explain the merits and demerits of standard deviation?

21. Applying Newton's method, calculate the premium payable on policies at an age of 26 & 42

    Age 20 25 30 35 40

    Premium 23 26 30 35 42

(6×5=30)

## Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Find out mean from the following

| Size(Below) | 5 | 10 | 15 | 20 | 25 | 30 | 35 |
|---|---|---|---|---|---|---|---|
| Frequency | 1 | 3 | 13 | 17 | 27 | 36 | 38 |

23. The following data relate to the daily wages paid to workers in two factories X and Y and No. of workers in two factories.

| Daily wages in Rs | 10-11 | 11-12 | 12-13 | 13-14 | 14-15 | 15-16 | 16-17 |
|---|---|---|---|---|---|---|---|
| No. of Workers in Factory X | 15 | 30 | 44 | 60 | 30 | 14 | 7 |
| No. of Workers in Factory y | 25 | 40 | 60 | 35 | 20 | 15 | 5 |

Calculate the Coefficient of Variation for both the factories and offer your comments.

24. Assume that a firm has selected a random sample of 100 items from its production line and has obtained the data shown in the table below:

| Class Interval | 130-134 | 135-139 | 140-144 | 145-149 | 150-154 | 155-159 | 160-164 |
|---|---|---|---|---|---|---|---|
| Frequency | 3 | 12 | 21 | 28 | 19 | 12 | 5 |

Compute the following Karl Pearson's Co efficient of skewness.

25. The following data gives the profits of a firm (in lakh rupees). Interpolate the missing figures.

| Year | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 |
|---|---|---|---|---|---|---|
| Profits (in lakhs Rs) | 7 | ? | 13 | 15 | ? | 25 |

(2×15=30)