

B. Sc. DEGREE (C.B.C.S.S) EXAMINATION, OCTOBER 2018
(2017 Admission Improvement / Supplementary and 2015 & 2016 Admission
Supplementary)
SEMESTER I - COMPLEMENTARY COURSE (STATISTICS)
ST1CMP01B - BASIC STATISTICS
(Common for Mathematics and Physics)

Time: Three Hours

Maximum Marks: 80

Use of Scientific calculators and Statistical tables are permitted.

PART A**I. Answer all questions. Each question carries 1 mark.**

1. What is Tabulation?
2. Define Standard Deviation
3. Define Harmonic Mean
4. First and Third Quartiles of a Frequency distribution are 30, and 75. The coefficient of skewness is 0.6. What is the value of Median?
5. What are the different partition values ?
6. Define Unit test of an Index number.

(6x1=6)**PART B****II. Answer any seven questions. Each question carries 2 marks**

7. Distinguish between Census and Sample survey
8. Explain Stratified Sampling
9. Distinguish between a Histogram and a Bar diagram
10. Calculate Median and Mode of the following numbers 13,18,12,17,16,5,18
11. The A.M of 20 observations is 8.5. If one observation 11.5 is replaced by 1.5, what is the new A.M ?
12. Find the first 4 moments about 4 of the numbers 2,3,7,8,10
13. For a distribution the mean is 10, Variance is 16, $\beta_1 = 1$, $\beta_2 = 4$. Obtain the first 4 moments about 0
14. Distinguish between Raw and Central moments.
15. Distinguish between simple and Weighted Index numbers.
16. Examine whether Paasche's Index number satisfies Factor reversal test.

(7x2 = 14)**PART C****III. Answer any five questions. Each question carries 6 marks.**

17. What are the parts of a table?
18. What are the rules to be followed while preparing a questionnaire?
19. Calculate the coefficient of Quartile deviation from the following data.

Wages in Rs.	Below35	35-37	38-40	41-43	over 43
No. of wage earners	14	62	99	18	7
20. What are the desirable properties of a good measure of Central tendency?
21. Find the Coefficient of Kutosis for the following data

C.I	0-10	10-20	20-30	30-40
F	1	3	4	2

22. Establish the relation between raw and central moments.
 23. Explain the steps in the construction of an index Number.
 24. Compute Consumer Price Index Number from the following data

Group	Base Year Price(Rs.)	Current Year Price(Rs.)	Weight
Food	400	550	35
Rent	250	300	25
Clothing	500	600	15
Fuel	200	350	20
Entertainment	150	225	15

(5x6 = 30)

PART D

IV. Answer any two questions. Each question carries 15 marks.

25. Calculate Mean Deviation about Median for the following data

C.I	2-4	4-6	6-8	8-10
F	3	4	2	1

(b) Explain Stem and Leaf chart.

26. An Analysis of monthly wages paid to workers in two firms A and B belonging to the same Industry, gives the following results.

	Firm A	Firm B
No. Of wage earners	550	650
Average monthly wages	50	45
Variance of the distribution of wages	90	120

- (a) Which firm A or B pays out larger amount as monthly wages?
 (b) In which firm A or B is there greater variability in Individual wages?
 (c) What are the measures of average and Standard deviation of monthly wages of all the workers in the two firms taken together ?
 27. Calculate Laspeyer's , Paasche's and hence Fisher's Index numbers for the following data.

Commodity	Price(Rs per unit)		Quantity (Kg)	
	Base year	Current year	Base year	Current year
A	20	30	12	18
B	30	42	10	14
C	22	34	6	10
D	18	28	8	12

28. (a) Show that $\beta_2 > 1$ for a Discrete distribution.
 (b) Calculate Pearson's Coefficient of Skewness for the following distribution

Variable	0-5	5-10	10-15	15-20	20-25	25-30	30-35
Frequency	3	5	9	15	21	10	7

(2x15 = 30)