SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Define Quartile and percentiles. Show the graphical determination of them.

17. Write the significances of arithmetic mean and harmonic mean.

18. Calculate mean, variation and standard deviation of the following frequency distribution.

Classes	Frequency
1-10	11
10-20	29
20-30	18
30-40	4
40-50	5
50-60	3

19. The first four moments of a distribution are 1,4,10 and 46 respectively. Compute the moment coefficients of skewness and kurtosis and comment upon the nature of distribution.

20. For the table below with the values out of 100.

	A	B	C	D	E	F	G
x:	73	76	78	65	86	82	91
y:	77	78	79	80	86	89	95

Calculate Spearman's rank correlation coefficient.

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APRIL/MAY 2019

BACS32 — STATISTICAL METHODS AND THEIR APPLICATIONS — I

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Give an example for time series data.
2. Mention the scope of statistical methods.
3. Find the mean and median for the following data: 57, 64, 43, 67, 49, 59, 44, 47, 61, 59
4. Define Harmonic mean
5. Find the mean deviation about the mean of the distribution

Size :	20	21	22	23	24
Frequency :	6	4	5	1	4

6. Define. Quartile Deviation.
7. What is Skewness?
8. How to define, moment of order(r)?
9. What is correlation?
10. What is regression?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Show how data can be represented diagrammatically and graphically.

Or

(b) Consider the following data and find the decile for the given data.

Class	Frequency
[0, 10)	5
[10, 20)	7
[20, 30)	15
[30, 40)	4
[40, 50)	10
[50, 60)	8

12. (a) Give the formula for finding Mean, Median and mode. Find them with an example.

Or

(b) Give the formula for finding geometric and harmonic mean. Find them with an example.

13. (a) Calculate the average and standard deviation for the given data: 4, 6, 8, 10, 12, 14.

Or

(b) Show that the two formulae for the standard deviation of ungrouped data.

$\sigma = \sqrt{\frac{(x_i - \bar{x}^2)}{n}}$ and $\sigma' = \sqrt{\frac{x_i^2}{n} - \bar{x}^2}$ are equivalent.

14. (a) Calculate the Karl-Pearson's coefficient of skewness from the following data :

Marks (above) :	0	10	20	30	40	50	60	70	80
No. of Students :	150	140	100	80	80	70	30	14	0

Or

(b) The first four moments of a distribution are 0, 2.5, 0.7 and 18.75. Compute the moment coefficients of skewness and kurtosis.

15. (a) The table below shows the height, x, in inches and the pulse rate, y, per minute, for 9 people. Find the correlation coefficient and the interpret your result.

x :	68	72	65	70	62	75	78	64	68
y :	90	85	88	100	105	98	50	65	71

Or

(b) Write short notes on regression analysis.