QUESTION 2012

Group – A
(Multiple Choice Type Questions)

1. Choose the correct alternatives for any ten of the following:

i) Standard Deviation is dependent on

   a) origin only   ✓b) scale only   c) both (a) & (b)   d) none of these

ii) The G.M. of 3, 12 and 48 is

   ✓a) 12   b) 9   c) 6   d) none of these

iii) Correlation coefficient lies between

   ✓a) – 1 to + 1   b) 0 to 1   c) 1 to 2   d) none of these

iv) For a distribution A. M = 105, S.D. = 21. The coefficient of variation is

   a) 30%   ✓b) 20%   c) 19.5%   d) none of these

BBA StI-130

vi) The price index of the base year considered as

a) 200　　　　b) 10　　　　c) 1000　　　　✓d) 100

vii) A.M. of 1, 2, 3, ... m is

a) m/2　　　✓b) (m + 1) /2　　　c) (m − 1)/2　　　d) none of these

viii) For perfect positive correlation

a) $r \pm 1$　　　　b) $r = 0$　　　✓c) $r = +1$　　　d) $r = -1$

viii) A component of time series which records short term periodic movement, where period is not longer than one year is

a) Secular Trend

✓b) Seasonal variation

c) Cyclical variation

d) Irregular variation

ix) At the point of intersection of the two ogives we get

a) mean　　　✓b) median　　　c) mode　　　d) none of these

x) Mean deviation is a measure of

a) Central tendency　　✓b) Dispersion　　c) Both (a) & (b)　　d) None of these

xi) When one regression coefficient is negative, the other would be

✓a) Negative　　　b) Positive　　　c) Zero　　　d) none of these

xii) The range of the values, 40, 51, 47, 39, 60, 64, 57 is

✓a) 25　　　b) 35　　　c) 45　　　d) none of these

Group – B
(Short Answer Type Questions)

2. a) Define primary data and secondary data with examples.
See Topic: COLLECTION AND PRESENTATION OF DATA, Short Answer Type Question No. 6.

b) What is the relation between A.M., G.M. and H.M. of n observations.
See Topic: MEASURES OF CENTRAL TENDENCY, Short Answer Type Question No. 11.

3. Following data on the mode of transport people use to get to their work place were obtained from a survey of 100 office-goers in a city.

Auto	Bus	Train	Taxi	Private Car
24	22	25	15	14

Draw an appropriate bar diagram for the above data.
See Topic: FREQUENCY DISTRIBUTION, Short Answer Type Question No. 3.

4. What is the relation between mean, median and mode. Find mode of the following data:

Monthly income (Rs.)	1000–1500	1500–2000	2000–2500	2500–3000	3000–3500	3500–4000
No. of workers	30	50	75	68	43	24

See Topic: **MEASURES OF CENTRAL TENDENCY, Short Answer Type Question No. 12.**

5. Calculate the S.D. from the following table:

Marks	0–10	10–20	20–30	30–40	40–50	50–60
No. of students	10	20	30	40	50	30

See Topic: **MEASURES OF VARIATIONS, Short Answer Type Question No. 8.**

6. What do you understand by 'Secular Trend' in the analysis of a time series? Explain with examples.

See Topic: **TIME SERIES ANALYSIS, Short Answer Type Question No. 2.**

Group – C
(Long Answer Type Questions)

7. The data below given is the marks secured by 70 candidate in a certain examination:

21	31	35	52	64	74	89	53	42	7
22	35	43	67	76	35	46	26	32	40
72	43	38	41	63	71	28	32	45	54
15	18	52	73	86	50	39	55	47	12
44	58	67	85	39	40	50	65	72	69
57	63	5	56	79	37	24	54	82	49
51	54	68	29	34	44	62	62	59	65

a) Construct a frequency distribution of the marks, taking classes of uniform width of 10 marks and '0' as the lower limit of the lower most class.

b) Find cumulative frequency of both less than and more than type and draw ogive from this frequency distribution.

See Topic: **FREQUENCY DISTRIBUTION, Long Answer Type Question No. 7.**

8. a) The following table gives the prices and quantities of a number of commodities in Kolkata. Compute index numbers of prices for 1984 with 1979 as base year using Laspeyre's and Paasche's formulae.

Commodity	Unit	1979		1984	
		Price(Rs.)	Quantity	Price(Rs.)	Quantity
Rice	Kg	8	4	10	8
Ghee	Kg	25	2	29.50	3
Egg	dozen	5	5	6.50	6
Milk	Liter	2	3	4	7

See Topic: **INDEX NUMBER, Long Answer Type Question No. 10.**

BBA StI-132

b) The ranks of same 16 students in Mathematics and Physics are as follows. Two numbers within brackets denote the ranks of the students in Mathematics and Physics: (1, 1) (2, 10) (3, 3) (4, 4) (5, 5) (6, 7) (7, 2) (8, 6) (9, 8) (10, 11) (11, 15) (12, 9) (13, 14) (14, 12) (15, 16) (16, 13). Calculate the rank coefficient for proficiencies of this group in Mathematics and Physics.

See Topic: CORRELATIVE ANALYSIS, Long Answer Type Question No. 12.

9. a) Find the regression line of Y when X is an independent variable from the following data:

Y	18	20	25	28	30	24	15	25
X	25	22	28	26	35	20	15	10

Estimate the value of Y and X is 45 from the above regression line.

See Topic: CORRELATIVE ANALYSIS, Long Answer Type Question No. 13.

b) Calculate Quartile Deviation and its coefficient from the following table:

Salary (Rs.)	4−8	8−12	12−16	16−20	20−24	24−28	28−32	32−36	36−40
No of Workers	6	10	18	30	15	12	10	6	2

See Topic: MEASURES OF VARIATIONS, Short Answer Type Question No. 9.

10. a) The weights (in Kg) of 6 persons are 64, 60, 60, 64, 60 and 64. Calculate the mean deviation about mean.

See Topic: MEASURES OF VARIATIONS, Short Answer Type Question No. 10.

b) Fit a trend equation to the following data by the method of least squares.

Year :	1975	1976	1977	11978	1979
Production:	83	92	71	90	169

Estimate also the production for 1980.

See Topic: TIME SERIES ANALYSIS, Long Answer Type Question No. 4.

11. a) If the two regression lines are $3y + 9x = 46$ and $3x + 12y = 19$, determine which one of these is the regression lines y on x and which one is that of x on y. Also, find the means, correlation coefficient and the ratio of variance.

See Topic: CORRELATIVE ANALYSIS, Long Answer Type Question No. 14.

b) For a moderately skewed distribution, mean = 10, C.V. = 35%, coefficient of skewness = 0.2, find the median and mode of the distribution.

See Topic: MOMENTS, SKEWNESS AND KURTOSIS, Long Answer Type Question No. 4.