PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Solve the following equations by Cramer's rule.

$2x + 4y + z = 26$

$3x + 2y + 3z = 32$

$2x - 3y + 4z = 16$.

17. Find the amount of the bills if the bill of 6 months is discounted for Rs. 6,500 @ 9% discount p.a.

18. Compute the median and mode from the following data :

Mid value :	115	125	135	145	155	165	175	185	195
Frequency :	6	25	48	72	116	60	38	22	3

19. Calculate the standard deviation of the following :

X :	0-10	10-20	20-30	30-40	40-50	50-60
f :	12	18	35	42	40	45

20. In a competition the remarks of three judges are as follows. Decide which pair have nearest approach. (Use rank correlation)

Judge A :	1	5	4	8	9	6	10	7	3	2
Judge B :	4	8	7	6	5	9	10	3	2	1
Judge C :	6	7	8	1	5	10	9	2	3	4

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(For the candidates admitted from 2008–2009 onwards)

B.B.A. (CA) DEGREE EXAMINATION,
APRIL/MAY 2018.

First Semester

QUANTITATIVE TECHNIQUES — I

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Define Matrix.

2. What are the properties of matrix multiplication?

3. What is simple interest?

4. What is annuity?

5. Define Statistics.

6. What is a Questionnaire?

7. What do you understand by Dispersion?

8.	What is time series analysis?

9.	What is linear correlation?

10.	What are regression lines?

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11.	(a)	Prove the matrix $\begin{bmatrix} 4 & 3 & -3 \\ -1 & 0 & -1 \\ -4 & -4 & -3 \end{bmatrix}$ is non

singular.

Or

(b)	If $A = \begin{bmatrix} 2 & 3 \\ 4 & 7 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & 3 \\ 1 & 2 \end{bmatrix}$ prove that

$(AB)^T = B^T A^T$.

12.	(a)	Find the present value of an annuity of Rs. 1,500 per year at the rate of interest 6% compounded for 10 years.

Or

(b)	The difference between simple interest and compound interest is Rs. 121. Number of years is 5, rate of interest 8%. Find out the sum.

13.	(a)	Explain the limitations of statistics.

Or

(b)	Calculate harmonic mean of the following data :

Marks :	10-20	20-30	30-40	40-50	50-60
Frequency :	30	75	70	135	220

14.	(a)	Find the range and its co-efficient from the following data :

X :	10-20	20-30	30-40	40-50	50-60	60-70
f :	5	4	4	5	3	2

Or

(b)	Co-efficient of variations of two series are 60% and 80% respectively. Their standard deviation are 20 and 16 respectively. What are their arithmetic mean?

15.	(a)	Calculate correlation co-efficient from the following :

$N = 10$; $\Sigma dx = 40$; $\Sigma dy = 0$; $\Sigma dxdy = 50$; $\Sigma dx^2 = 180$; $\Sigma dy^2 = 215$.

Or

(b)	From the following find the value of 'y' when X is 2.

	X	Y
Arithmetic mean	7.6	14.8
Standard deviation	3.6	2.5

$r = 0.99$