(21218) Roll No. .....

BBA-I Sem.

18037

B. B. A. Examination, Dec. 2018

BUSINESS MATHEMATICS

(BBA-102)

(New)

Time : Three Hours] *[Maximum Marks : 75*

Note : Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Questions)

Attempt all the *five* questions. Each question carries 3 marks. Very short answer is required. 3×5=15

1. Find triplicate ratio of 3 : 4. 3

2. If 19% population of a town is 399, find the total population. 3

3. Find the amount of ₹ 1,000 @ 4% per annum compound interest for 3 years. 3

4. Differentiate $e^{\sin x}$. 3

5. Find the value of : 3
   (i) 12% of 75
   (ii) 33% of 240 litres
   (iii) 5% of 4.45 meter.

Section-B

(Short Answer Questions)

Attempt any *two* questions out of the following three questions. Each question carries 7½ marks. Short answer is required. 7½×2=15

6. In how many ways can the letters of the word 'ASSASSINATION' be arranged so that all the S's are together ? 7½

7. The salary of Gaurav in first year is ₹600 per month. He gets an increment of ₹20 per month. Find his total earning during 6 years service. 7½

8. Find the average marks : 7½

Marks	Students
more than 10	40
more than 20	31
more than 30	15
more than 40	7
more than 50	3

Section-C

(Detailed Answer Questions)

Attempt any *three* questions out of the following five questions. Each question carries 15 marks. Answer is required in detail. 15×3=45

9. Solve by Gauss's elimination method the following : 15

$$6x + 3y + 2z = 6$$
$$6x + 4y + 3z = 0$$
$$20x + 15y + 12z = 0.$$

10. (a) Solve : 7½

$$\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ a^2 & b^2 & c^2 \end{vmatrix} = (a-b),(b-c),(c-a).$$

(b) Find out maxima and minima of $\sin x + \cos x$, where x lies between 2 and 2π. 7½

11. Write short notes on any two of the following : 7½×2

(i) Multiplication law of matrices

(ii) Union of sets

(iii) Integration by substitution.

12. (a) A trains runs 25 miles at a speed of 30 mph another 50 miles at a speed of 40 mph. Then due to repairs of the track travel for 6 minutes at a speed 10 mph and finally covers the remaining distance of 24 miles at a speed of 24 mph. What is the average speed in miles per hour ? 7½

(b) Calculate the average from the following table by shortcut method taking deviation from 9 : 7½

x	6	7	8	9	10	11	12
F	5	8	9	12	6	6	4

13. If $A = \begin{bmatrix} 1 & 2 \\ 3 & -4 \end{bmatrix}$, find A^2 and A^3. 15