N (Printed Pages 7)

(21216) Roll No. .....

B.B.A.-I Sem.

18037

B.B.A. Examination, Dec. - 2016

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)

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

P.T.O.

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1. Explain Diagonal matrix and Identify matr with example.

2. Find the minors and cofactors of the follow ing matrix :

$$A=\begin{bmatrix}-2 & 3\\ -5 & 4\end{bmatrix}$$

3. The ratio of two numbers in the lowest form is 11:9. If the sum of numbers is 40. Find the numbers.

4. If ${}^{n}P_{4} = 20\times{}^{n}P_{2}$, find n.

5. Integrate $\int\frac{1}{b^2+a^2x^2}dx$

Section-B

(Short Answer Questions)

Note : This section contains three questions, attempt any **two** questions. Each question carries 7½ marks. Short answer is required. $7\frac{1}{2}\times2=15$

6. If $y=x^3-x^2-16x+16$, then find the maxima and minima of the function y.

7. Explain simple interest and compound interest. Find the rate of interest of a sum that becomes triple of itself in 12 years on simple interest.

8. Define rank of a matrix. Find the rank of matrix $A=\begin{bmatrix}1 & 2 & 3\\ 3 & 1 & 2\\ 2 & 3 & 1\end{bmatrix}$.

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Section-C

(Detailed Answer Questions)

Note : This section contains five questions, attempt any **three** questions. Each question carries 15 marks. Answer is required in detail. $15 \times 3 = 45$

9. (a) Using matrix method, solve the following system of linear equation : 7½

$$6x+7y+2=0$$

$$4x+3y+6=0$$

(b) Find the Inverse of the matrix: 7½

$$A=\begin{bmatrix} 1 & 2 & 5 \\ 2 & 3 & 1 \\ -1 & 1 & 1 \end{bmatrix}$$

10. Solve the following equations by Gauss elimination method:

$$x + 3y+6z=2$$

$$3x-y+4z=9$$

$$x - 4y+2z=7$$

11. (a) A candidate secures 25% in an examination but fails by 30 marks. While the other candidate who secures 50 marks get 20 marks more than the minimum passing marks. Find the minimum passing percentage.

(b) The 5^{th} term of Arithmetic series is 21 and 11th term of Arithmetic series is 39, then find first term, common difference, and sum of 55^{th} terms of series.

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12. (a) If A = {1, 2, 3, 4}, B={2,3,4,5} and c= {3,4,5,6}

then prove that

$$A\cap(B\cap C) = (A\cap B)\cap C$$

and $A\cup(B\cup C) = (A\cup B)\cup C$

(b) Find n, if

(i) ${}^{n}C_{7} = {}^{n}C_{9}$

(ii) ${}^{24}C_{n+5} = {}^{24}C_{3n-1}$

(iii) ${}^{2n}C_{2} : {}^{n}C_{3} = 9:2$

13. (a) If $y=\frac{x-4}{2\sqrt{x}}$, then find

$\frac{dy}{dx}$ at x=4

(b) Prove that

$$\int_0^{\pi/2} \frac{\sqrt{\sin x}}{\sqrt{\sin x}+\sqrt{\cos x}}\,dx=\frac{\pi}{4}$$

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13. (a) 85 kg. of a mixture contains milk and water in the ratio of 27:7. How much more water is to be added to get a new mixture containing milk and water in the ratio of 3:1 ?

(b) At what rate percent per annum will be Rs. 1,200 amount to Rs. 1,350 in 3 years, interest being calculated yearly ?

(c) The population of a town is 1,80,000. If it increases @ 6% per annum, what will be its population after two years ?

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(201217) Roll No. .....

B.B.A.-I Sem.

18037

B. B. A. Examination, Dec. 2017

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. Explain square matrix.

2. What is diagonal matrix ?

3. Explain inverse of matrix.

4. Find the simple interest on Rs. 8,000 for 6 years at an annual rate of 5%.

5. Find the value of $^{50}C_{47}$.

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. Find the rank of matrix :

$$A=\begin{bmatrix}1 & 2 & 3\\ 3 & 1 & 2\\ 2 & 3 & 1\end{bmatrix}.$$

7. A cricket club has 18 members among whom are 1 wicket-keeper, 5 are bowlers and rest are batsman. In how many ways can a team of 14 players be selected out of them so that it may have 1 wicket-keeper and at least three bowlers ?

8. Integrate :

$$\int\left[\frac{1}{\log x}-\frac{1}{(\log x)^2}\right]dx.$$

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. If $y=x^3-x^2-16x+16$, then find the maxima and minima of the function y.

10. If $A=\begin{bmatrix}1 & 2\\ 3 & 4\end{bmatrix}$, $B=\begin{bmatrix}3 & 1\\ 4 & 5\end{bmatrix}$ and $C=\begin{bmatrix}1 & 1\\ 2 & 2\end{bmatrix}$, prove that $A(B+C)=AB+AC$.

11. (a) If $A=\{1,2,3,4\}$, $B=\{2,3,4,5\}$ and $C=\{3,4,5,6\}$, then prove that :

$$A\cap(B\cap C)=(A\cap B)\cap C$$

and $A\cup(B\cup C)=(A\cup B)\cup C$.

(b) If $y=\dfrac{x-4}{2\sqrt{x}}$, then find $\dfrac{dy}{dx}$ at $x=4$.

12. (a) A person decides to save Rs. 400 in January, Rs. 800 in February, Rs. 1,600 in March, Rs.3,200 in April up to the end of the year. What will be his total savings during whole year ?

(b) If 7th term of a H.P. is 1/10 and 12th term is 1/25, find the 20th term.

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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

G

(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. If $C = x^3 - 2x^2 + 4x + 15$, find average cost and marginal cost.

12. (a) Show that the sequence :

$$1, \frac{1}{4}, \frac{1}{7}, \frac{1}{10}, \ldots\ldots\ldots\ldots$$

is a H.P. Also finds its 10th term.

(b) Find the 9th term and the general term of the progression $\frac{1}{4} - \frac{1}{2}, 1, -2, \ldots\ldots\ldots$

13. (a) If the population of a town is 18,000 in beginning of the year 1996, find what will be population at the end of 1999 at the rate of increase of 6% p.a. ?

(b) A shopkeeper borrowed some money from a nationalised bank under SSI scheme to expand his business at the rate of 10.5% p.a., S.I after 3 years he paid back ₹ 9,862. So to the bank and settled his account. What some did he borrow from the bank ?

A

(21119)

Roll No. .....

Total Questions : **13**] [Printed Pages : **4**

18037

B.B.A. Ist Semester Examination, Nov., 2019

BUSINESS MATHEMATICS

(BBA–102)

Time : 3 Hrs.] ***[M.M. : 75***

Note :– Attempt questions from all Sections as per instructions.

Section–A

(Very Short Answer Type Questions) 3×5=15

Note :– Attempt all the *five* questions. Each question carries 3 marks. Very short answer is required.

1. Find Duplicate Ratio of 8 : 15.
2. If 32 is added to the 80% of a number, the result is the number itself find the number.

3. The following table given the marks obtained by 10 students of B.B.A. II in Business Mathematics :

Serial No.	1	2	3	4	5	6	7	8	9	10
Marks	88	42	6	74	31	98	80	16	52	33

4. Find the simple interest on ₹ 25,000 for 146 days at the rate of 6% per annum.

5. Differentiate $\log x^2$.

Section–B

(Short Answer Type Questions) 7½×2=15

Note :– Attempt any *two* questions out of the following three questions. Each question carries 7½ marks. Short answer is required not exceeding **200** words.

6. Find AB if :

$$A = \begin{bmatrix} 1 & 3 & 1 \\ 4 & 0 & 2 \end{bmatrix}, B = \begin{bmatrix} 3 & -4 \\ 1 & 5 \\ -2 & 2 \end{bmatrix}$$

7. Calculate the arithmetic mean (average) of 54, 61, 93, 104, 75 and 99 by the routine method.

8. Find the number of permutations of word 'ACCOUNTS'.

Section–C

(Long Answer Type Questions) 15×3=45

Note :– Attempt any *three* questions out of the following five questions. Each question carries 15 marks. Answer is required in detail.

9. Write short notes on any *two* of the following :
   (i) Multiplication law of matrices
   (ii) Union of sets
   (iii) Integration by substitution
   (iv) Gaussian elimination method

10. (a) $A \cup B = A \cap B$ if and only if $A = B$ prove it.

    (b) Out of 1000 students who appeared for an examination, 750 failed in maths, 600 failed in accounts and 600 failed in costing, 450 failed in both maths and accounts, 400 failed in both maths and costing. The students who failed in all the three subjects were 75. Prove that the above data is not correct.

13. What is Resistance to charge? How can resistance to charge be implemented or overcome?

D

(Printed Pages 4)

(20321)

Roll No. .....

B.B.A.-I Sem.

18074

B.B.A. Examination, Dec.-2020

Organizational Behaviour

(BBA-102)

(New)

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

Note : Attempt **all** the questions as per instructions.

Section-A

(Very Short Answer Questions)

Note : Attempt all **five** questions. Each question carries 3 marks. Very short answer is required not exceeding 75 words. 3×5=15

1. Discuss Autocratic model of Organisational Behaviour is brief.

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(20222) Roll No. .....

B.B.A-I Sem.

18074 (CV-III)

BBA Examination, Dec.-2021

Organizational Behaviour

BBA-102

(New Course)

Time : 1½ Hours] *[Maximum Marks : 75*

Note : Attempt **all** the sections as per instructions.

Section-A

Note : Attempt any **two** questions. Each question carries 7.5 marks. Very short answer is required not exceeding 75

4. What is group dynamics?
5. What do you understand by organisational change?

Section-B

Note : Attempt any **one** question out of the following three questions. Each question carries 15 marks. Short answer is required not exceeding 200 words. 1×15=15

6. Explain Vroom's Expectancy theory in brief.
7. Make a difference between formal and informal communication.
8. Explain different types of Groups.

Section-C

Note : Attempt any **two** questions out of the following five questions. Each question carries 22.5 marks. Answer is required in detail. 2×22.5=45

9. Discuss the nature of organisational goals. Why should organisations specify their goals clearly?

10. What is Personality? Explain various factors that play an important role in determining the personality of a person?
11. What is Leadership? Explain various styles of Leadership.
12. Explain the Likert's model of effectiveness. What are the factors for achieving organisational effectiveness?
13. Explain in detail the importance of group decision making and give reasons why groups can make higher quality decisions than individuals?