

Department of Management
School of Management & Business Studies
Jamia Hamdard, New Delhi
BBA - I Semester Special Examination, April – May 2019
Business Mathematics; BBA - P - 01

Max Marks: 75

Time Allowed: 3 Hours

*Calculators are allowed.

Section A

Attempt any 6 (Six) questions. Each Question carries 5 marks. [6*5=30]

Q1. If A & B are two matrices given below, find (i) $A+B$, (ii) $A-B$

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

Q2. If A & B are two matrices as given above in Q1, find AB.

Q3. The sum of two numbers is 84. If the two numbers are in the ratio of 4:3, find the two numbers.

Q4. 56 % of a number is 448. What is 98% of the same number?

Q5. Differentiate between simple average & weighted average with the help of an example.

Q6. Find the sum of first 10 terms of an AP with the first term being 2 & common difference being 5.

Q7. Find the sum of first 8 terms of a GP with the first term being 2 & common ratio being $\frac{4}{3}$.

Q8. What will Rs100 amount to in 5 years time at a simple interest of 7% p.a.?

Q9. What will Rs1200 amount to in 5 years time if the interest is compounded annually @ 5% p.a.?

Section B

Attempt any 3 (three) questions. Each question carries 15 marks [3*15=45]

Q10. Calculate the value of x, y & z using matrix inversion method for the following system of equations
 $2x + 4y - z = 9$; $3x + y + 2z = 7$; $x + 3y - 3z = 4$

Q11. Solve the following system of linear equations using the Gauss Elimination Method

$$x + 2y + z = 4; 2x + 3y + 4z = 19; 3x - y + z = 9$$

Q12 (i) In how many ways three different rings can be worn in four fingers with at most one in each finger?

(ii) Seven athletes are participating in a race. In how many ways can the first three prizes be won?

(iii) How many different signals can be made by 5 flags from 8 flags of different colours?

Q13 (i) Three gentlemen & three ladies are candidates for two vacancies. A voter has to vote for two candidates. In how many ways can one cast his vote?

(ii) If there are 12 persons in a party and if each two of them shake hands with each other, how many handshakes happen in the party?

(iii) A question paper has 2 parts, part A & part B, each containing 10 questions. If the student has to choose 8 from part A and 5 from part B, in how many ways can he choose the questions?

Q14 Find the derivative of the following:

(i) $f(x) = 6x^3 - 9x + 4$

(ii) $h(y) = y^4 - 9y^3 + 8y^2 + 12$

(iii) $g(y) = (y-4)(2y+y^2)$

Q15. Find the integral of the following:

(i) $\int (4x^6 - 2x^3 + 7x - 4) dx$

(ii) $\int (\frac{1}{t^2} - 1)(4+3t) dt$

(iii) $\int 4e^z + 15 - (1/6z) dz$
