

Roll No.....

BBA-102(N)

**BBA (Semester I) (New Syllabus)
Examination – 2011
(Business Mathematics)**

Time: Three Hours] [Maximum Marks: 70

Note: Attempt any ten questions from Section A and any 2 questions from Section 'B'. (10x5=50)

Section A

1. If $A = \begin{bmatrix} -1 & 3 & 2 \\ 4 & 5 & 8 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & 0 & 1 \\ 5 & 3 & 0 \end{bmatrix}$
Find y so that $A + 2y = 4B$
2. The income of A, B and C are as 5:4:3 and their spending are as 8:5:4. If A saves Rs80 out of an income of Rs1200 find the savings of B and C.
3. Calculate the number whose $12\frac{1}{2}\%$ is $\text{Rs}175\frac{3}{2}$
4. Find the sum of all natural numbers between 10 and 200 which are divisible by 7.
5. The third term of a G.P. is 24 and 6th term is 192. Find the sum of nine terms.

6. A certain sum at simple becomes ₹540 after 5yrs and ₹576 after 7yrs. Find the amount after 15yrs.
7. Find the number of different permutations of the letters in the word 'REGRESSION' if
- The vowels are kept together
 - The vowels may not come together
8. If $A = \{1,2,3,4\}$ $B = \{2,3,4,5\}$ $C = \{1,3,4,5,6,7\}$ find (i) $A \cup B \cup C$ (ii) $A \cap B$
9. From 6 Red Balls and 4 Blue Balls, 5 are to be selected. In many ways can this be done, if there must be
- Exactly 2 blue balls
 - 2 Red and 3 blue balls
10. If 8 persons working 8hrs a day can complete a work in 15 days, then how many persons can complete this work in 6 days by working 10hrs a day?
11. Find out A^{-1} when $A = \begin{bmatrix} 8 & 4 \\ 2 & 2 \end{bmatrix}$
12. Find $\frac{dy}{dx}$ for the following:
 $y = x - 2e^x + 8 \log_e x - 9x^{-1/3}$

Section-B

Note : Attempt any two questions.

(10x2=20)

13. Show that $A = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & 2 \\ 2 & 2 & 1 \end{bmatrix}$ satisfies $A^2 - 4A - 5I = 0$, where I is identity matrix and 0 denotes zero matrix.

14. Find the maximum and minimum values of the function $f(x) = x^3 - 6x^2 + 12x - 8$

15. If $U = \{0,1,2,3,4,5,6,7,8,9\}$
 $A = \{0,3,4,7\}$
 $B = \{1,2,8,9\}$

Verify that $(A \cup B)' = A' \cap B'$