



I Semester B.B.M. Examination, November/December 2014
(Repeaters) (Prior to 2012-13)

Business Management
Paper – 1.6 : BUSINESS MATHEMATICS

100 – 2011-12 Only

90 – Prior to 2011-12

Time : 3 Hours

Max. Marks : 100/90

- Instructions :**
- Answers should be written in **English**.
 - All** rough work must be shown on the right **hand** margin.
 - Section **A, B & C** to be answered by **all** repeaters (**90** marks).
 - Section **D** to be answered by students of **2011-12** only (**100** marks).

SECTION – A

Answer **any ten** of the following sub-questions. **Each** sub-question carries **two** marks. (10×2=20)

- Define irrational number.
 - Find HCF of 28, 42, 98.
 - What is linear equation ?
 - Sum of 4 consecutive numbers is 166. Find out those numbers.
 - Find 12th term of A.P. 4, 7, 10...
 - Insert 4 Arithmetic means between 5 and 20.
 - What is permutation ?
 - What is Identity matrix ?

i) If $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} -3 & 3 \\ 2 & 2 \end{bmatrix}$ find AB.

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- j) Find rate of interest for Rs. 175 to earn 140 interest in 20 years.
- k) The last three terms of a proportions are 8, 12, 16. What is the first term ?
- l) Find the value of X if $\frac{x+2}{x-1} = \frac{5}{2}$.

SECTION - B

Answer **any five** of the following. **Each** question carries **5** marks. (5×5=25)

2. Find the greatest number which will divide 14490 and 31530 as to leave the remainder - 6 in each case.
3. Find two number whose sum is 64 and whose difference is 16.
4. If the fifth term of G.P. is 81 and 2nd term is 24. Find C.R. and 1st term.
5. If $A = \begin{bmatrix} 1 & 2 \\ 2 & 4 \end{bmatrix}$ $B = \begin{bmatrix} 3 & 4 \\ 1 & 2 \end{bmatrix}$. Find $3A + 2B$.
6. Solve by Crammer rule $6x + 5y = 2$, $4x - 3y = 14$.
7. In what time Rs. 4,000/- amounts to Rs. 4,410 at 5% C.I. ?
8. Find three no. in A.P. such that their sum is 27, their product is 504.

SECTION - C

Answer **any three** of the following. **Each** question carries **15** marks. (3×15=45)

9. a) Solve $\frac{x}{x+1} + \frac{x}{x-1} = 2\frac{1}{12}$.

b) Find the value of x and y if

$$\begin{vmatrix} x & 3 & y \\ 4 & 3 & 1 \\ 1 & 2 & 4 \end{vmatrix} = 16 \text{ and } \begin{vmatrix} 1 & 2 & -1 \\ -x & 1 & 2 \\ y & -1 & 1 \end{vmatrix} = 28.$$



10. a) The sum of three number in G.P. is 26 and their product is 216. Find the number.
- b) A man borrowed ₹ 6,250 from a bank and after two years paid ₹ 6,760 in full settlement of his debt. Find the rate of compound interest charged by bank ?
11. a) A man gave $\frac{2}{3}$ of a certain sum of money to his wife $\frac{1}{5}$ to his son and the remainder was divided between his two daughters aged 12 years 10 years in proportion to their ages. If younger daughter got Rs. 235 what did the elder daughter get ?
- b) 5 men each working 9 hours a day can finish a work in 30 days. How many men are required to finish 8 times the work in 25 days each working 8 hours a day ?

12. a) Find $\frac{dy}{dx}$ if $Y = \frac{2x^3 - x^2 + x - 2}{x^2}$.

b) Evaluate

$$\lim_{x \rightarrow 3} \frac{x^2 - 5x + 6}{x^2 - 4x + 3}$$

13. a) Solve by formula method $6x^2 + 5x - 4 = 0$.
- b) Find the difference between compound interest and simple interest on ₹ 6,000 for 5 years at 10%.

SECTION - D

To be answered by students of 2011-12 only.

(1×10=10)

Find the Inverse of the matrix

$$\begin{bmatrix} 4 & 13 \\ 2 & 7 \end{bmatrix}$$
