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#### B.Sc. Business Economics (BBE) (2015 to 2017) (Sem.-1) QUANTITATIVE TECHNIQUES FOR ECONOMICS – I Subject Code : BBE-103 Paper ID : [72693]

Time: 3 Hrs.

Max. Marks: 60

# **INSTRUCTIONS TO CANDIDATES :**

- 1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 2. SECTION-B consists of FOUR Sub-sections : Units-I, II, III & IV.
- 3. Each Sub-section contains TWO questions each, carrying TEN marks each.
- 4. Student has to attempt any ONE question from each Sub-section.

## **SECTION-A**

- 1. Write note on the followings :
- N.FirstRanker.com i) Universal set and empty set.
  - Two main types of matrices. ii)
  - Skew Symmetric Matrix. iii)
  - Find value of iv)
    - $log_{81}27$ a)
    - $\log_{10} 100$ b)
  - Find n<sup>th</sup> term of an AP and sum to 'n' terms of an AP. v)
  - Find the value of x satisfying logl0(2x+x-41)=x(1-logl05)vi)
  - vii) Ratio.
  - viii) de Morgan's Law.
  - ix) Formulas of Simple and Compound Interest.
  - Find Simple Interest if P = Rs.400, R = 3% per three months, T = 2 months. x)

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#### **SECTION-B**

## **UNIT-I**

- 2. i) Discuss the main laws of the operation of sets.
  - ii) In a class of sixty boys, there are 45 boys who play cards and thirty play carom, find
    - a) How many boys play both the games?
    - b) How many boys play cards only?
    - c) How many boys play carom only?
- 3. Discuss the fundamental properties of logarithm with proofs.

#### **UNIT-II**

i) Solve the equation with the help of Cramer's rule 4.

Ranker.com x + 6y - z = 102x+3y+3z=173x - 3y - 2z = -9ii) Define adjoint of a Matrix Find the inverse of a matrix 5. i)  $\begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & 2 \\ 2 & 2 & 1 \end{bmatrix}$ 

ii) Define Transpose of a Matrix



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# **UNIT-III**

- 6. Find the sum of the series = 1 + 3.5 + 6 + 8.5 + ... + 101
- 7. i) Write down the first five terms of the geometric progression which has first term 1 and common ratio 1/2.
  - ii) Find the 10th and 20th terms of the GP with first term 3 and common ratio 2.
  - iii) Find the 7th term of the GP 2,-6,18,...,

## **UNIT-IV**

- 8. i) If the compound interest on a certain sum for two years at 10% p.a. is Rs 2,100 the simple interest on it at the same rate for two years will be.
  - ii) The compound interesiron a sum for 2 years is Rs. 832 and the simple interest on the same sum for the same period is Rs. 800. The difference between the compound and www.FirstRanker.com simple interest for 3 years will be.
- 9. Write note on the followings :
  - i) Bill Discounting
  - ii) Mark up