

Vidya Vikas Mandal's

Shree Damodar College of Commerce & Economics Margao Goa

F.Y.BBA (FS), Semester I, Semester End Examination, October 2016

QUANTITATIVE SKILLS

Duration: 2 Hours

Total Marks: 60

**Instructions:**

- I. Figures to the right indicate maximum marks
- II. Start each answer on a fresh page
- III. All questions are compulsory
- IV. Non-scientific calculators allowed

**Q.1 Attempt the following**

- A. Explain the meaning of statistics. (6)
- B. What is frequency distribution? Prepare a suitable frequency distribution table of the weights (in kgs) of 33 students of a class given below : (6)

42, 74, 40, 60, 82, 115, 41, 61, 75, 83,  
63, 53, 110, 76, 84, 50, 67, 65, 78, 77,  
56, 95, 68, 69, 104, 80, 79, 79, 54, 73,  
59, 81, 100

OR

- I. Write a short note on importance and scope of statistics. (6)
- II. The following table shows color choice preferences of 50 car buyers :

Red	Red	White	Green	White	Black	Red	Red	Black	Green
Black	White	White	Red	Green	White	Red	Green	Green	White
Red	Red	White	Red	Green	Red	White	Black	Black	Red
Black	Red	Green	White	Green	Red	Red	Black	White	White
Green	Red	Red	Red	Red	White	White	Black	White	Green

Prepare a suitable frequency distribution table for the above. (6)

**Q.2 Attempt the following**

- A. Find 3 numbers in G.P such that their product is 216 and the sum of the first and the third term is 20 (4)
- B. The sum of 3 numbers in A.P is 45 and the sum of their squares is 693. Find the 3 numbers (4)
- C. Find the sum of the first 20 terms of the sequence below (4)

$$9, 18, 36, 72, \dots$$

OR

- I. Find the sum  $5 + 55 + 555 + 5555 + \dots$  up to first  $n$  terms (6)
- II. Find  $n$  if the sum  $200 + 225 + 250 + \dots +$  up to  $n$  terms = 9450 (6)

**Q.3 Attempt the following**

- A. let the numbers  $a, b, c$  be in A.P then prove that  $b = \frac{a+c}{2}$  (3)
- B. solve the following simultaneous equations by elimination method (3)

$$3x + y = 11$$

$$4x - 2y = 8$$

- C. Solve the quadratic equation  $9 - \frac{20}{x} = x$  by using factorization method (6)

OR

- I. Write formula for  $n^{\text{th}}$  term of an A.P whose first term is  $a$  and the common difference is  $d$ . Also find 15<sup>th</sup> term of the sequence 3, 1, -1, -3, -5, ... (3)
- II. Solve the following simultaneous equations by substitution method (3)

$$x - y = 6$$

$$\frac{x}{3} + \frac{y}{4} = 9$$

- III. Solve the quadratic equation  $x^2 - x - 110 = 0$  by using formula (6)

**Q.4 Attempt the following**

- A. X tells Y "I am now thrice as old as you were when I was as old as you are" if the sum of their present ages is 90 years, find their present ages. (6)
- B. Ghanshyam gets Rs. 81200 after deduction of brokerage on selling a house. If the rate of brokerage is  $3\frac{1}{3}\%$ , find the brokerage and the cost of house. (6)

**OR**

- I. The sum of two numbers is 150. Twice of the first number added to five times the second number is equal to 450. Find the numbers. (6)
- II. Sumit is 8 years elder than Rajesh. 4 years later their ages will be in the ratio 5:4. Find their present ages. (6)

**Q.5 Attempt the following**

- A. Due to increase in railway fair of 1<sup>st</sup> class by 40% the number of passengers in this class decreases by 30%. Find the percentage resultant change in revenue. (6)
- B. A manufacturer allows successive discounts  $d_1\%$ ,  $d_2\%$ ,  $d_3\%$  on the sale of an article. Show that the amount due is given by  $p\left(1 - \frac{d_1}{100}\right)\left(1 - \frac{d_2}{100}\right)\left(1 - \frac{d_3}{100}\right)$  (6)

**OR**

- I. The monthly incomes of two persons A and B are in the ratio 4:7 and their expenses are in the ratio 6:11. If each saves Rs. 430 per month, find their monthly income. (6)
- II. Find the amount of ordinary annuity of 12 monthly payments of Rs. 1500 that earn interest at 12% per year compounded monthly. (6)