

**D.K.M.COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1.**

**NON – MAJOR FUNCTIONAL MATHEMATICS**

**UNIT – I**

**SECTION-A**

**2 Marks**

1. Define Ratio.
2. Define Proportion.
3. If  $A : B = 3 : 4$  &  $B : C = 8 : 9$  find  $A : C$ .
4. If  $2A = 3B$  and  $4B = 5C$  find  $A : C$ .
5. Divide Rs. 672 in the ratio 5 : 3.
6. Divide ₹ 1162 among  $A : B : C$  in the ratio 35:28:20.

**SECTION-B**

**10 Marks**

1. A bag contains 50 p, 25p and 10p coins in the ratio 5 : 9: 4 amounting to Rs. 206 find the no. of coins of each type.
2. Find the fourth proportional to 5 , 8, 15.
3. If  $x : y = 2 : 1$  then  $(x^2 - y^2) : (x^2 + y^2)$  is ?

**UNIT – II**

**SECTION-A**

**2 Marks**

1. Define Percentage.
2. Define Depreciation.
3. Find 0.08% .
4. Find 28 % .
5. Evaluate 28% of 450 + 45 % of 280
6. 2 is what percent of 50%
7. 9% of ? = 6.3
8. Find selling price when cost price = ₹ 56.25, gain = 20%
9. If the cost price is 96% of the selling price then what is the profit % ?

**SECTION-C**

**10 Marks**

1. The difference between two no's is 1660. If 7.5% of one number is 12.5 % of the other number. Find the two numbers.
2. The population of a town is 1,76,400. It increases at the rate of 5 % per annum. What will be its population two years hence what was its two years ago?
3. If 50% of  $(x - y) = 30\%$  of  $(x + y)$  then what percent of  $x$  is  $y$

**UNIT – III**

**SECTION-A**

**2 Marks**

1. Define Profit.
2. Define Discount.

3. When a commodity is sold for Rs. 34.80 there is a loss of 25% what is the cost price of the commodity?
4. The cost price 21 articles is equal to selling price of 18 articles find the gain or loss % ?
5. The manufacturer gains 10% the wholesale dealer 15% and the retailer 25% . Find the cost of production of a table, the retail price of which is 1265.

#### **SECTION-B**

**10 Marks**

1. A man brought a horse and carriage for Rs.3000. He sold the horse at a gain of 20% and the carriage at a loss of 10% there by gaining 2 % on the whole. Find the cost of the horse.
2. A book was sold for 27.50 with a profit of 10% if it were sold for 25.75 then what would have been the percentage profit or loss.
3. Alfred buys an old scooter for 4700 and spends Rs.800 on its repairs. It he sells the scooted for 5800 find the gain %.

#### **UNIT – IV**

#### **SECTION-A**

**2 Marks**

1. Define simple interest.
2. Define Compound interest
3. Find the simple interest on Rs.68000 at  $16 \frac{2}{3}$  % per anum for 9 months.
4. At what rate % per annum will a sum of money doubt in 16 years.
5. Find the compound interest 7500 at 4% per annum 2 yrs, compound annually.
6. Write the formula for rate.

#### **SECTION-B**

**10 Marks**

1. A sum of Rs.800 amounts to 920 in 3 yrs at simple interest. If the simple interest is increased by 3 % it would amount to how much?
2. Find the compound on 16,000 at 20% per annum for a months compounded quarterly.
3. If Rs.500 amounts to 583.20 in 2 years compounded annually. Find the rate of interest per annum.

#### **UNIT – V**

#### **SECTION-A**

**2 Marks**

1. A number is as much greater than 36 as is less than 86. Find the number.
2. The difference between a number and its  $\frac{3}{5}$ <sup>th</sup> is 50. What is the number?
3. The average of 4 consecutive even no's is 27. Find the largest of these number.
4. The sum of a rational no. of its reciprocal is  $\frac{13}{6}$  .
5. Rajeev's age after 15years will be 5 times his age five years back. What is the percent age of Rajeev.

#### **SECTION-B**

**10 Marks**

1. The product of the ages of Ankit and Nikita is 240 if twice the age of Nikita is more than Ankita's age by 4 years what is Nikita's age.

2. Sachin is younger than Rahul by 4 years. If their ages are in the respective ratio of 7 : 9 How old is Sachin?
3. The ages of two persons differ by 16 years. If 6 years ago, the elder one be 3 times as old as the younger one find their present ages?