

**Maharashtra State Board
Class X Mathematics - Algebra
Board Paper – 2015**

Time: 2 hours

Total Marks: 40

Note:- (1) All questions are compulsory.
(2) Use of calculator is not allowed.

1. Attempt any five question from the following: 5

- i. Find the next two terms of the following sequence :
1, 3, 5, 7,
- ii. If $t_n = 4n$, find t_1 .
- iii. Compare quadratic equation $x^2 + 3x - 1 = 0$ with the general form $ax^2 + bx + c = 0$ and write the value of 'a' and 'b'.
- iv. Write any one linear equation using the variables 'x' and 'y'.
- v. Find the discount when the marked price is Rs. 25 and the selling price is Rs. 23.
- vi. Mohan paid tax Rs. 1,000 on purchase value and collected Rs. 1,200 tax on sale value. Find the M-VAT payable by Mohan.

2. Attempt any four sub-questions from the following : 8

- i. Mr. Deshpande (below 60 years) has a gross annual income of Rs. 2,60,000 from all sources for the financial year 2012-13. Calculate his taxable income for the same year.
- ii. Vishwasrao purchased Khadi shirt and trouser having printed price Rs. 500 together, getting 11% rebate on printed price. Find the amount of rebate.
- iii. Find the 9th term of an A.P.
2, 5, 8, 11,
- iv. Check whether $m = 2$ is a root of the quadratic equation :
 $m^2 + 4m + 3 = 0$
- v. Find 'm + n' for the following simultaneous equations :
 $3m + 4n = 7$ and
 $4m + 3n = 14$.
- vi. If $p \propto q$ and $p = 14$ when $q = 7$, find the constant of variation (k).

3. Attempt any three of the following sub-questions: 9

- i. Solve the following quadratic equation by factorization method :
 $x^2 + 9x + 8 = 0$.
- ii. If 'x' varies inversely as 'y' and $x = 7$ when $y = 9$:
 - (a) Find constant of variation (k).
 - (b) Write equation of variation.
 - (c) Find 'y' when $x = 9$.

- iii. Vimla purchased a microwave oven with the price Rs. 25,000. If 5% discount was given and 2% CST was paid, then find the amount paid by Vimla.
- iv. Mr. Kamath purchased 2 towels for Rs. 90 each, 3 shirts for Rs. 220 each and 4 trousers for Rs. 290 each from Swarajya Khadi Bhandar, Wardha. The Bhandar gave 30% rebate. Find the amount Mr. Kamath paid.
- v. Find S_{15} of an A.P. :
4, 8, 12, 16,

4. Attempt any two sub-questions from the following: 8

- i. The product of two consecutive odd natural numbers is 99. Find the numbers.
- ii. The electric current (I) flowing through a circuit is directly proportional to the potential difference (V) in it. When the potential difference is 60 volts, the electric current is 1.5 amperes. Find the electric current flowing through the circuit when the potential difference is 100 volts.
- iii. A wholesaler purchased electric material for Rs. 1,50,000. He sold it to a retailer for Rs. 1,80,000. Retailer sold the same material to customer for Rs. 2,20,000. Find the M-VAT payable at every stage of trading at the rate of 12.5%.

5. Attempt any two of the following subquestions: 10

- i. Devendra invested in a national saving certificate scheme. In the first year he invested Rs. 1,000, in second year Rs. 1,400, in the third year Rs. 1,800 and so on. Find the total amount that he invested in 12 years.
- ii. Sum of the present ages of Reshma and her mother is 60 years. Five years ago, her mother's age was 4 times the age of Reshma. Find their present ages.
- iii. An artificial jewellery item is available for Rs. 850 cash or Rs. 600 cash-down payment and Rs. 270 to be paid in one instalment after 6 months. Find the rate of interest charged under instalment scheme.