

Q.P. SET CODE
A

MT - W

Seat No.

2017 ___ ___ 1100 - MT - W - GENERAL MATHEMATICS (71)ALGEBRA- SET - A (E)

Time : 2 Hours

(Pages 4)

Max. Marks : 40

Note :

- (i) All questions are compulsory.
- (ii) Use of calculator is not allowed.

Q.1. Solve ANY FIVE of the following :

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- (i) Write any two Arithmetic progressions with common difference 3.
- (ii) Check whether the following equation is a quadratic equation :
$$\frac{1}{x^2} + x = 10$$
- (iii) Write the equation $7y = 3x + 23$ in general form of linear equation in two variables.
- (iv) Find M.P when
S.P = ₹ 1920 and discount = ₹ 48
- (v) If sale price is ₹ 1800 and rate of CST is 2% then find CST and selling price.
- (vi) Determine whether the given sequence is an Arithmetic progression :
1, 3, 5, 7,

Q.2. Solve ANY FOUR of the following :**8**

- (i) The n^{th} term of a sequence is given below. Find the first five terms of the sequence : $t_n = n(n + 1)$.
- (ii) Decide whether $x = 2$ is the root of the quadratic equation $x^2 + 5x - 14 = 0$.
- (iii) If $x = 2$ and $y = 5$ is the solution of $7x + by = 54$. Find the value of b ?
- (iv) If $x \propto y$ and $x = 20$ when $y = 5$ find,
 (a) constant of variation.
 (b) the equation of variation.
- (v) Complete the following table by solving the example given in the table :

Marked Price (M.P)	Rate of Discount	Selling Price
₹ 25000	₹ 23500

- (vi) Calculate the education cess at the rate of 3% on the income tax for F.Y. 2012-13 as given below : ₹ 2000.

Q.3. Solve ANY THREE of the following :**9**

- (i) Find the 15th term of an A.P. 10, 14, 18, 22,
- (ii) Solve the following quadratic equation by factorization method :
 $p^2 + 9p + 18 = 0$
- (iii) Complete the following table in which 'n' is directly proportional to 'm'.

m	4	5	12	-	3.5
n	16	20	-	28	-

- (iv) A shopkeeper allows his customer 10% off on the marked price of goods and still gets a profit of 25%. What is the actual cost of the article marked ₹ 250?
- (v) Observe the table and state whether the income tax is to be paid or not for the following persons having taxable income of F.Y. 2012-13 as given below .

Sr. No.	Person	Age in year	Taxable income in ₹	Tax is to be paid or not
(a)	Ms. Seema	25	1,25,000	
(b)	Mr. Anand	32	2,70,000	
(c)	Mrs. Bagwan	80	2,70,000	

Q.4. Solve ANY TWO of the following :

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- (i) Solve the following quadratic equation by completing square method :
 $4x^2 + 7 - 12x = 0$
- (ii) The wave length of a sound and its frequency are inversely proportional to each other. If the frequency is 280 Hertz then the wave length is 60 cm. Find the frequency when the wave length is 100 cm.
- (iii) Mr. A.P. Deshpande (45 years) serving in a company and earns ₹ 23,700 per month. (excluding travelling allowance). He deposited ₹ 2300 per month towards provident fund. He bought N.S.C. of ₹ 10,000 and donated ₹ 6000 to C.M. relief fund. Find the income tax he has to pay for F.Y. 2012-13.

Q.5. Solve ANY TWO of the following :

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- (i) A farmer borrowed ₹ 8000, and agreed to repay with a total interest of ₹ 1360 in 12 monthly instalments, each instalment being less than the preceding one by ₹ 40. Find the amount of the first and the last instalment ?
- (ii) Sum of the present ages of Reshma and her mother is 60 years. Five years ago mother's age was 4 times the age of Reshma. Find their present ages.
- (iii) Maganlal purchased the following articles from a Mangaldeep Khadi Bhandar. The percentage rebate is given in brackets. Find the total rebate and the amount paid.
- 2 sarees for ₹ 280 each (15%)
 - 3 bed sheets for ₹ 120 each (20%)
 - 2 depreated brass vessels for ₹ 375 each (15%)

Best Of Luck 🍀