

MT

2017 ____ ____ 1100

Seat No.

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MT GENERAL MATHEMATICS (71) ALGEBRA - SEMI PRELIM - I - PAPER - 2 (E)

Time : 2½ Hours

(Pages 3)

Max. Marks : 40

Q.1. Solve the following : (Any 5) 5

- (i) Find the next three terms of the sequence given below :
2, 4, 8, 16,
- (ii) If $x = 2$ and $y = 5$ is the solution of $7x + by = 54$. Find the value of b ?
- (iii) Determine whether the given sequence is an Arithmetic progression :
1, 3, 5, 7,
- (iv) Younus has got rebate of ₹15 on a flower pot in Handicraft Emporium. He paid ₹120 for the article. What must be the marked price of flower pot ?
- (v) Express the following information in mathematical form using two variables. (Use variables x and y). Ajit bought 2 dozens of oranges and 3 dozens of bananas for ₹210. If bought 3 dozens of organs and 2 dozens of bananas, he had to pay ₹240. What were the rates of oranges and bananas per dozen ?
- (vi) What is the commission of estate agent at 2% on the sale of house for ₹600000.

Q.2. Solve the following : (Any 4) 8

- (i) Solve the following simultaneous equations by method of equating the coefficient $2x + 3y = 19$; $2x - 3y = 11$.
- (ii) Find the first three terms of the sequence for which S_n is given below : $S_n = n^2 (n + 1)$

- (iii) The printed price of a doll is ₹100. A shopkeeper sold 4 such dolls at ₹360. Find the percentage discount.
- (iv) If $t_n = 3n + 5$, find A.P.
- (v) Solve the following simultaneous equations by the method of substitution : $4x + y = 5$; $7x - 2y = 20$.
- (vi) What is the commission of estate agent at 5% on the sale of house for ₹650000.

Q.3. Solve the following : (Any 3)**9**

- (i) Find S_{25} of an A.P. 4, 8, 12, 16,
- (ii) Solve the following simultaneous equations by method of equating the coefficients : $5x + 15 = 20 - 5y$, $2x - 6y = 10$.
- (iii) Anthony purchased 2 bed sheets for ₹160 each at a rebate of 20%, a silk saree for ₹600 at rebate 12% and 2 bottles of honey for ₹300 each at rebate 15%. Find the total amount of rebate and the amount he paid.
- (iv) Solve the following simultaneous equations by the method of substitution : $-7a = 14 - 28b$; $5b = 15a - 25$.
- (v) A cupboard was sold for ₹2376. If its printed price is ₹2700, find the percentage discount.

Q.4. Solve the following : (Any 2)**8**

- (i) Meenakshi saved ₹33000 in ten years. In each year after the first, she saved ₹200 more than she did in the preceding year. How much did she saved in the first year ?

- (ii) The length of playground of Samata colony is twice, its breadth. Its perimeter is 600 m. What is the length and the breadth of playground of colony ?
- (iii) A salesman was appointed on a fixed monthly salary of ₹6000 with 4% incentive on the excess of sale over ₹48000. If he sold goods worth of ₹50000 find the monthly income of salesman ?

Q.5. Solve the following : (Any 2)**10**

- (i) In a two digit number digit at unit's place is less by 4 than digit at ten's place. Sum of the original number and the number obtained by interchanging the digits is 154. Find both the numbers.
- (ii) Farm equipments are sold for ₹8000 cash or for ₹2000 cash down payment and balance payment in 6 equal monthly instalments. If the rate of interest is 8 p.c.p.a. find the amount of each instalment.
- (iii) A man repays a loan of ₹6500 by paying ₹610 in the first month and decreases the payment by ₹30 every month. How long will it take to clear his loan ?

Best Of Luck 