BRIHANMUMBAI MUNICIPAL CORPORATION
SECONDARY EDUCATION DEPARTMENT
SSC- PRACTICE PAPER - 1
(2023-2024)

TIME: 2HRS SUBJECT: MATHS 1 MEDIUM: ENGLISH MARKS: 40 M

NOTE:

ALL QUESTIONS ARE COMPULSORY.
USE OF CALCULATOR IS NOT ALLOWED.
TOTAL MARKS ARE SHOWN ON RIGHT SIDE OF THE QUESTION.
FOR QUESTION NO. 1 (A) MCQ MARKS WILL BE GIVEN ONLY FOR THE FIRST ATTEMPT.
WHILE WRITING ANSWER OF MCQ QUESTION, WRITE SUBQUESTION NUMBER AND CORRECT ALPHABET (ALTERNATIVE).

Q.1 (A) Choose the correct alternative for each of the following subquestions. (4)

1) $ax + by = c$ and $mx + ny = d$ and $an \neq bm$ then these simultaneous equations have -
(A) Only one common solution. (B) No solution.
(C) Infinite number of solutions. (D) Only two solutions.

2) What is the amount of dividend received per share of face value ₹ 10 and dividend declared is 50%.
(A) ₹ 50 (B) ₹ 5 (C) ₹ 500 (D) ₹ 100

3) There A die is rolled. What is the probability that the number appearing on upper face is less than 3 ?
(A) $\frac{1}{6}$ (B) $\frac{1}{3}$ (C) $\frac{1}{2}$ (D) 0

4) The Cumulative frequencies in a grouped frequency table are useful to find . . .
(A) Mean (B) Median (C) Mode (D) All of these

Q.1 (B) Solve the following subquestions. (4)

1) Write the following equations in the form $ax^2 + bx + c = 0$, then write the values of a, b, c for equation $3m^2 = 2m^2 - 9$

2) Find the first term and common difference of the A.P 5, 1, -3, -7, . . .

3) 'Pawan Medical' supplies medicines. On some medicines the rate of GST is 12%, then what is the rate of CGST and SGST?

4) Find the classmark of 30-40

Q.2 (A) Complete the following activities and rewrite it. (any two). (4)

1) First term and common difference of an A.P. are 6 and 3 respectively ; find S_{27}

$a = 6, d = 3, S_{27} = ?$

$S_n = \frac{n}{2}[\ldots\ldots + (n-1) \times d]$

$S_{27} = \frac{27}{2}[12 + (27-1) \times \ldots\ldots]$

$S_{27} = \frac{27}{2} \times [\ldots\ldots]$

$= 27 \times 24$

$S_{27} = \ldots\ldots$

2) If $\alpha = 2$ and $\beta = 5$ then find the quadratic equation.

$x^2 - (\ldots\ldots + \ldots\ldots)x + (\ldots\ldots \times \ldots\ldots) = 0$

$x^2 - 7x + 10 = 0$

3) Complete the following table to draw graph of the equation $x + y = 3$

$x + y = 3$

x	3	.....	.....
y	.....	5	3
(x,y)	(3,0)	.....	(0,3)

Q.2 (B) Solve the following subquesstions. (any four). (8)

1) Find the value of discriminant $2y^2 - 5y + 10 = 0$

2) Find the 19th term of the following A.P. 7, 13, 19, 25, . . .

3) Smt. Deshpande purchased shares of FV ₹ 5 at a premium of ₹ 20. How many shares will she get for ₹ 20,000 ?

4) For the following experiment write sample space 'S' and number of sample points n(S).
Two digit numbers are formed using digits 2, 3 and 5 without repeating a digits.

5) A card is drawn at random from a pack of well shuffled 52 playing cards. Find the probability that the card drawn is - an ace.

Q.3 (A) Complete the following activity and rewrite it. (any one) (3)

1) Write the correct number in the given boxes from the following A. P.

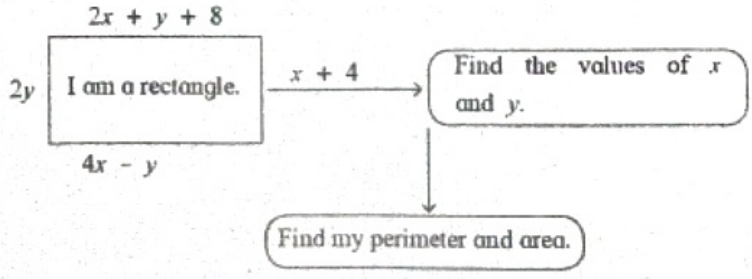
70, 60, 50, 40, . . .

Here $t_1 = \ldots\ldots\ldots$, $t_2 = \ldots\ldots$, $t_3 = \ldots\ldots$, $t_4 = \ldots\ldots\ldots$

$\therefore a = \ldots\ldots$, $d = \ldots\ldots\ldots$

2)

Complete the following.



Q.3 (B) Solve the following subquestions. (any two) (6)

1) Sum of the present ages of Manish and Savita is 31. Manish's age 3 years ago was 4 times the age of Savita. Find their present ages

2) Solve the following quadratic equation by completing the square method. $x^2 + 2x - 5 = 0$

3) Six faces of a die are as shown below.

If the die is rolled once, find the probability of -
(1) 'A' appears on upper face.
(2) 'D' appears on upper face.

4) The following table shows the classification of number of vehicles and their speeds on Mumbai-Pune express way. Find the median of the data.

Average Speed of Vehicles(Km/hr)	60-64	64-69	70-74	75-79	79-84	84-89
No. of vehicles	10	34	55	85	10	6

Q.4 Solve the following subquestions. (any two) (8)

1) The sum of squares of two consecutive natural numbers is 841; find the numbers.

2) The daily wages of 130 workers is shown in the following frequency distribution table. Find the mode of the daily wages.

Daily Wages	140 – 144	145 – 149	150 – 154	155 – 159	160 – 164	165 – 169
No. of workers	10	20	25	40	30	5

3) Shri. Vijay Shah purchased a liquid soap for ₹ 5900 (with GST) and sold it to the consumers for ₹ 8260 (with GST). Rate of GST is 18%. Find the amount of CGST and SGST.

Q.5 Solve the following subquestions. (any one) (3)

1) Frame a word problem on simultaneous linear equation in 2 variables, such that the value of one variable will be 10 (persons, rupees, metres, years, etc.) and solve it.

2) The marks obtained by a student in different subjects are shown. Draw a pie diagram showing the information.

Subject	Marathi	English	Science	Math	Total
Marks	85	85	90	100	360