BOARD QUESTION PAPER: July 2019

Maths Part - I

Time: 2 Hours

Max. Marks: 40

Note:

- i. *All* questions are compulsory.
- ii. Use of calculator is not allowed.
- iii. Figures to the right of questions indicate full marks.

1. (A) Solve the following questions (Any four):

[4]

- i. If $|7| \times |-4| = a$, then find the value of a.
- ii. If x + y = 5 and x y = 1, then find the value of x.
- iii. Find the median of the scores 7, 10, 5, 8, 9.
- iv. Write the degree of Polynomial $5x^2 + 2x + 3x^4 + 4$.
- v. If $A = \{1, 2, 3, 4, 5\}$ and $B = \{1, 3, 7\}$, then $A \cap B = ?$
- vi. Find out the ratio of 1 mm to 1 cm.

(B) Solve the following questions (Any two):

[4]

- i. Find the factors of the Polynomial $3x^2 2x 1$.
- ii. $\Box ABCD$ is a parallelogram. The ratio of measures of $\angle A$ and $\angle B$ is 5 : 4. Find the measure of $\angle B$.
- iii. Alka spends 90% of the money that she gets every month and saves ₹120. How much money does she get monthly?

2. (A) Choose the correct alternative:

[4]

- i. Find the value of $\begin{vmatrix} 5 & 3 \\ -7 & -4 \end{vmatrix}$
 - (A) -1
- (B) -41
- (C) 41
- (D)
- ii. Out of the following equations which one is not a quadratic equation?
 - (A) $x^2 + 4x = 11 + x^2$

(B) $x^2 = 4x$

(C) $5x^2 = 90$

(D) $2x - x^2 = x^2 + 5$

iii. If
$$n(A) = 2$$
, $p(A) = \frac{1}{5}$, then $n(S) = ?$

- (A) 10
- (B) 2

- (C)
- (D) 20

(C) 103.5

(D) 104.5

(B) Solve the following questions (Any two):

[4]

- i. Find the value of k, if x = 3 is a root of the equation $kx^2 10x + 3 = 0$
- ii. Market value of a share is ₹ 200. If the brokerage rate is 0.3%, then find the purchase value of the share.
- iii. The following table shows the number of students and the time they utilized daily for their studies. Find the mean time, spent by students for their studies:

Time (hrs.)	No. of Students
0 - 2	8
2 - 4	14
4 – 6	18
6 – 8	10
8 – 10	10

3. (A) Complete the following activities (Any two):

i. There are 9 tickets in a box, each bearing one of the numbers from 1 to 9. One ticket is drawn at random from the box.

[4]

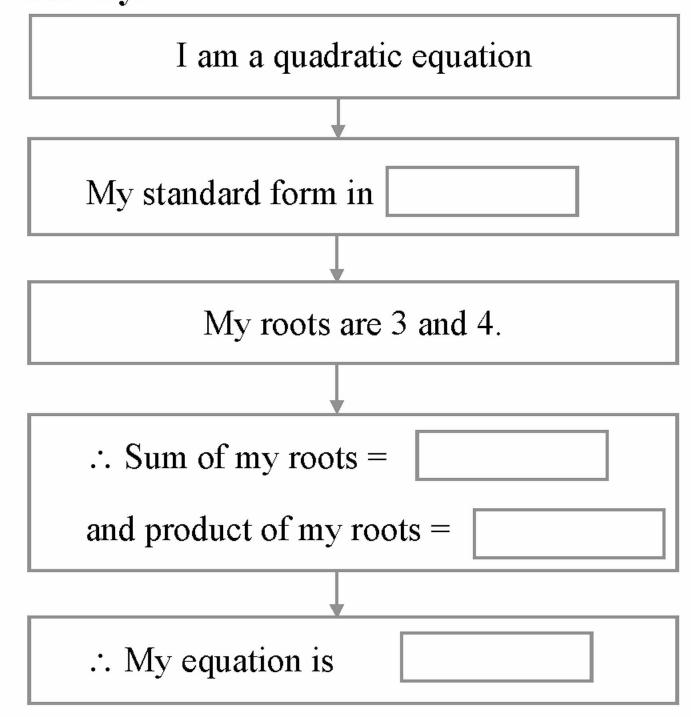
Event A: Ticket shows an even number.

Complete the following activity from the given information:

Activity:

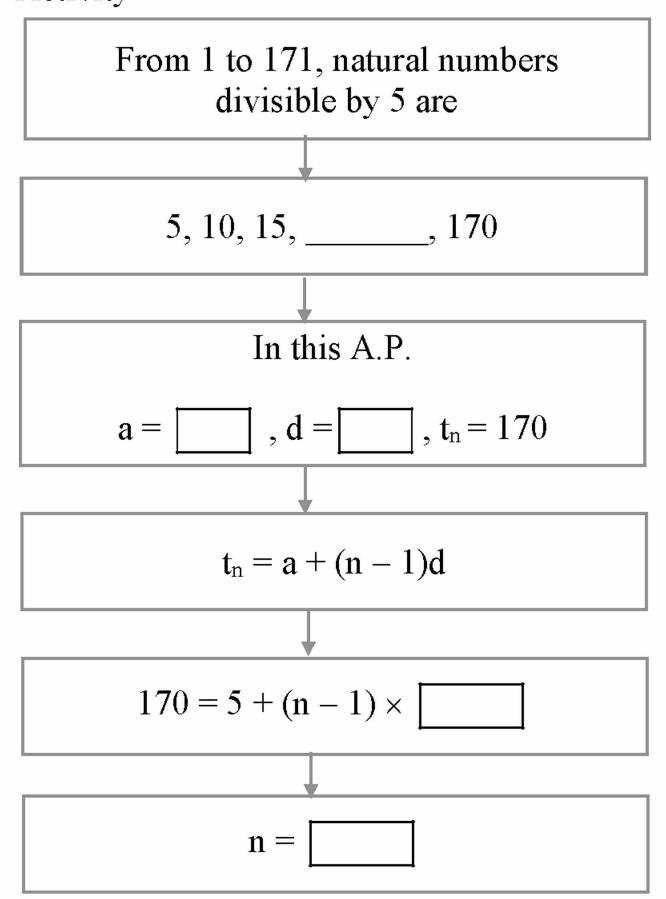
ii. Complete the following activity to form a quadratic equation.

Activity:



iii. Complete the following activity to find the number of natural numbers between 1 and 171, which are divisible by 5:

Activity



(B) Solve the following questions (Any two):

i. Solve the following simultaneous equations:

$$4x + 3y = 11$$
; $3x + 4y = 10$

ii. Find the 23rd term of the following A.P.:

$$9, 4, -1, -6, -11, \dots$$

iii. Find the mode from the following information:

$$L = 10, h = 2, f_0 = 58, f_1 = 70, f_2 = 42.$$

4. Solve the following questions (Any three):

i. Solve the following simultaneous equations graphically:

$$x + y = 2$$
; $x - y = 4$.

- ii. Sachin invested some amounts in National Saving Certificates in a specific way. In the first year he invested ₹ 4,000 in the second year ₹ 6,000 in the third year ₹ 8,000 and so on for 12 years. Find the total amount he invested in 12 years.
- iii. A readymade garment shopkeeper gives 5% discount on a dress of ₹ 2,000 and charges 5% GST on the remaining amount. What is the purchase price of the dress for the customer?
- iv. A bag contains 3 red, 3 white, 3 green and 3 black balls. One ball is picked up from the bag at random. What is the probability that the ball drawn is:
 - a. white
 - b. not white.

5. Solve the following questions (Any one):

[4]

[4]

[9]

- i. Out of 555 km, Vishal travelled certain distance by bus and remaining distance by car. Bus travels with an average speed of 60 km/hr and the average speed of car is 75 km/hr. He takes total 8 hours to complete the journey. Find the distance that Vishal travelled by bus.
- ii. The time required for some students to complete a science experiment and the number of students is shown in the following grouped frequency distribution table. Draw the frequency polygon with the help of histogram using given information:

Time required for experiment (minutes)	Number of Students
20 - 22	6
22 - 24	14
24 - 26	20
26 - 28	16
28 - 30	12
30 - 32	10

6. Solve the following questions (Any one):

[3]

- i. Construct a word problem on quadratic equation, such that one of its answers is 20 (years, rupees, centimetre etc.). Also solve it.
- ii. A student made a cube shaped die from a card sheet. Instead of writing numbers 1, 2, 3, 4, 5, 6 on its faces, he wrote letters a, b, c, d, e, f; one on each face, randomly. If he rolls the die twice, find the probability that he gets a vowel on the upper face both times.