Mathematics - I
Practice Paper - I

Time : 2 Hrs. **Total Marks : 40**

Q. 1 (A) Solve the following questions. (Any four) **[4 Marks]**

1. What is the mode of 19, 19, 15, 20, 25, 15, 20, 15 ?
2. MUN = {1, 2, 3, 4, 5, 6} and M = {1, 2, 4} then which of the following represent set N ?

   (A) {1, 2, 3 } (B) {3, 4, 5, 6}

   (C) {2, 5, 6} (D) {4, 5, 6}
3. There are 't' trees in a city. If number of trees increases per year by 'i', then write equation for total number of trees after 'x' years.
4. 24 Bananas were distributed between Shubham and Anil in the ratio 3 : 5, then how many bananas did Shubham get ?
5. If $3x + 5y = 9$ and $5x + 3y = 7$ then what is the value of $x + y$?
6. If class mark is 10 and class width is 6 then find the class.

Q. 1 (B) Solve the following questions. (Any Two) **[4 Marks]**

1. The ratio of present ages of Komal and her mother is 2 : 7. After 2 years, the ratio of their ages will be 1 : 3. What is Komal's present age ?
2. Sunil spends 60% of his income. From the balance he donates ₹ 300 to an orphanage. He is then left with ₹ 3,200. What is his income ?
3. Solve : $\frac{x^2 + 12x - 20}{3x - 5} = \frac{x^2 + 8x + 12}{2x + 3}$

Q. 2 (A) Choose the correct alternatives. **[4 Marks]**

1. To find the cost of one share at the time of buying the amount of Brokerage and GST is to be ..... the MV of share.

   (a) added to (b) substracted from

   (c) Multiplied with (d) divided by
2. There are 40 cards in a bag. Each bears a number from 1 to 40. One card is drawn at random. What is the probability that the card bears a number which is a multiple of 5 ?

   (a) $\frac{1}{5}$ (b) $\frac{3}{5}$ (c) $\frac{4}{5}$ (d) $\frac{1}{3}$

3. The median of the distances covered per litre shown in the above data is in the group . . . . . .

Distance Covered per litre (km)	12 - 14	14 - 16	16 - 18	18 - 20
No. of cars	11	12	20	7

(A) 12 - 14 (B) 14 - 16 (C) 16 - 18 (D) 18 - 20

4. In an A. P. 1st term is 1 and the last term is 20. The sum of all terms is = 399 then n = ...

(A) 42 (B) 38 (C) 21 (D) 19

Q. 2 (B) Solve the following questions. (Any two) **[4 Marks]**

1. Below is the given distribution of money (in ₹) collected by students for flood relief fund.

Money (in ₹)	0-10	10-20	20-30	30-40	40-50
No. of Students	5	7	5	2	6

Find mean of money (in ₹) collected by a student by using 'Direct Method'.

2. For following experiment write sample space 'S' and number of sample points n (S). Also write event sets A, B, C and also n (A), n (b), n (c).

Three coins are tossed simultaneously.

Event A : To get atleast one head. Event B : To get tail on second coin.

Event C : To get no head.

3. Krishna ordered a laptop from 'Flipkart' with the discount of 12 % on the printed price of ₹ 36,000. Rate of GST charged was 18 %. Find the purchase price of laptop.

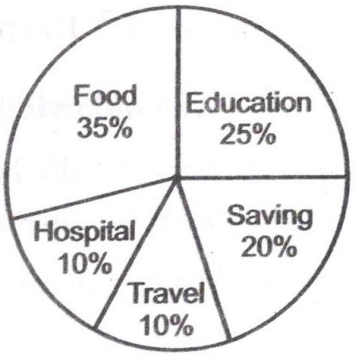
Q. 3 (A) Complete the following activities. (Any Two) **[4 Marks]**

1. Complete the following table.

Sr. No.	FV	Share is at	MV
(i)	₹ 120	premium of ₹ 23	. . . . .
(ii)	₹ 75	. . . . .	₹ 233

2. A survey of 240 middle-class families having similar income level is carried out with focus on their manner of annual expenditure.

From this, the data is collected and shown in pie-diagram as percentage distribution. Using this complete following table.



Mode of expenditure	Angular measure	Number of Families
Food	☐	☐
Education	90°	60
Travel	☐	☐
Hospital	☐	☐
Saving	72°	☐

3. Find sum of all odd numbers from 1 to 200 by fill in the boxes below.

a = ☐, d = ☐ and n = ☐

$S_n = \frac{n}{2} \times$ ☐ ... (Std. formula)

$\therefore S_n =$ ☐

$S_n =$ ☐ × ☐

$\therefore S_n =$ ☐

Q. 3 (B) Solve the following questions. (Any two) **[4 Marks]**

1. M/s Beauty Products paid 18% GST on cosmetics worth ₹ 6,000 and sold to a customer for ₹ 10,000. What are the amounts of CGST and SGST shown in the tax invoice issued ?
2. A box contains 5 red, 8 blue and 3 green pens. Rutuja wants to pick a pen at random. What is the probability that the pen is blue ?
3. Mary got a job with a starting salary of ₹ 15,000 per month. She will get an incentive of ₹ 100 per month. What will be her salary after 20 months.

Q. 4 Solve the following questions (Any three) **[9 Marks]**

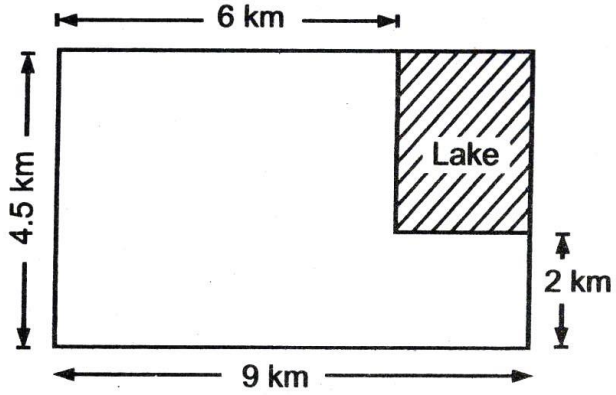
1. The faces of a die bear numbers 0, 1, 2, 3, 4, 5. If the die is rolled twice, then find the probability that the product of digits on the upper face is zero.
2. The sum of squares of two consecutive natural numbers is 164; find the numbers.
3. Find the sum of all even numbers from 1 to 320.

4. Smt. Malhotra purchased solar panels for the taxable value of ₹ 85,000. She sold them for ₹ 90,000. The rate of GST is 5 %. Find the ITC of Smt. Malhotra. What is the amount of GST payable by her ?

Q. 5 Solve the following questions (Any One) **[4 Marks]**

1. A rectangular playground is 420 sq. m. in area. If its length is increased by 7 m. and breadth is decreased by 5 metres, the area remains the same. Find the length and breadth of the playground.

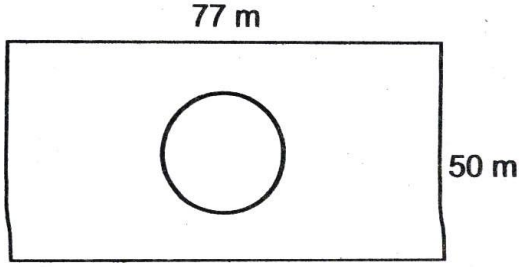
   A missing helicopter is reported to have crashed somewhere in the rectangular region shown in fig. What is the probability that it crashed inside the lake shown in the figure ?



Q. 6 Solve the following questions. (Any One) **[3 Marks]**

1. Out of 1900 km, Vishal travelled some distance by bus and some by aeroplane. Bus travels with average speed 60 km/hr and the average speed of aeroplane is 700 km/hr. It takes 5 hours to complete the journey. Find the distance, Vishal travelled by bus.

2. Length and breadth of a rectangular garden are 77 m and 50 m. There is a circular lake in the garden having diameter 14 m. Due to wind, a towel from a terrace on a nearby building fell into the garden. Then find the probability of the event that it fell in the lake.



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