Q.1 **A) Solve the following questions. (Any four)** **4**
1. A boy attempts x + y sums, of which only y – 2z sums are correct. Find the number of wrong sums.
2. Represent the union of the following two sets by Venn diagram. A = {3, 4, 5, 7},   B = {1, 4, 8}
3. Find the class mark of the class 35 – 40.
4. If 2x – 5y = 1 and 5x + 5y = 20, then find the value of x.
5. Classify the given pair of surds into like surds or unlike surds. $\sqrt{52}, 5\sqrt{13}$
6. If $p(y) = 2y^3 - 6y^2 - 5y + 7$, then find p(2).

B) Solve the following questions. (Any two) **4**
1. Rationalize the denominator of $\frac{1}{\sqrt{7}+\sqrt{2}}$
2. Three persons can build a small house in 8 days. to build the same house in 6 days, how many persons are required ?
3. Alka spends 90% of the money that she receives every month, and saves Rs. 120. How much money does she get monthly ?

Q.2 **A) Choose the correct alternative.** **4**
1. For the following table, the values of f_1, f_0 and f_2 are respectively _____.

Class	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60
Frequency	2	5	10	8	4

a) 5, 10, 8   b) 10, 5, 8   c) 8, 10, 5   d) 10, 8, 5
2. 149 is the _____ term of the given A.P. 5, 11, 17, 23, 29, ...
a) 24th b) 25th c) 30th d) 31st
3. If x + y = 10 and x – y = 12, then
a) x = 11, y = 1   b) x = 11, y = –1   c) x = –11, y = 1   d) x = –11, y = –1
4. For $\sqrt{2}x^2 - 5x + \sqrt{2} = 0$, find the value of the discriminant.
a) –5   b) 17   c) $\sqrt{2}$ d) $2\sqrt{2} - 5$

B) Solve the following questions. (Any two) **4**
1. 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 by direct method.

Time (hrs.)	0 – 2	2 – 4	4 – 6	6 – 8	8 – 10
No. of students	7	18	12	10	3

2. Find the root of the quadratic equation $m^2 - 11 = 0$
3. There is an auditorium with 27 rows of seats. There are 20 seats in the first row, 22 seats in the second row, 24 seats in the third row and so on. Find the number of seats in the 15th row.

Q.3 **A) Complete the following activities. (Any two)** **4**
1. Complete the following activity to solve the simultaneous equations.

   5x + 3y = 9   …(i)
   2x – 3y = 12   …(ii)
   Add equations (i) and (ii).
   5x + 3y = 9
   2x – 3y = 12
   ⎯⎯⎯⎯⎯⎯⎯⎯
   ☐x   = ☐

$$\therefore x = \frac{\boxed{}}{\boxed{}}$$

$$\therefore x = \boxed{}$$

Put $x = 3$ in equation (i).

$$\therefore 5 \times \boxed{} + 3y = 9$$

$$\therefore 3y = 9 - \boxed{}$$

$$\therefore 3y = \boxed{}$$

$$\therefore y = \frac{\boxed{}}{3}$$

$$\therefore y = \boxed{}$$

$$\therefore \text{ Solution is } (x, y) = \left(\boxed{}, \boxed{}\right)$$

2. Complete the following table.

No.	Services	SAC	GST rate
(a)	Railway transport services	996511	------
(b)	Airways services (economy)	996411	------
(c)	Currency exchange services	997157	------
(d)	Brokerage services	997152	------

3. For each sequence, find the next two terms and complete the table.

Sequence a) 192, −96, 48, −24, $\boxed{}$, $\boxed{}$ b) $\frac{1}{2}, \frac{1}{6}, \frac{1}{18}, \frac{1}{54}, \boxed{}, \boxed{}$

B) Solve the following questions. (Any two)   **4**

1. Observe the following frequency polygon and write the answers of the questions below it.
    i. Which class has the maximum number of students ?
    ii. Write the classes having zero frequency.
    iii. What is the class mark of the class, having frequency of 50 students ?
    iv. Write the lower and upper class limits of the class whose class mark is 85.
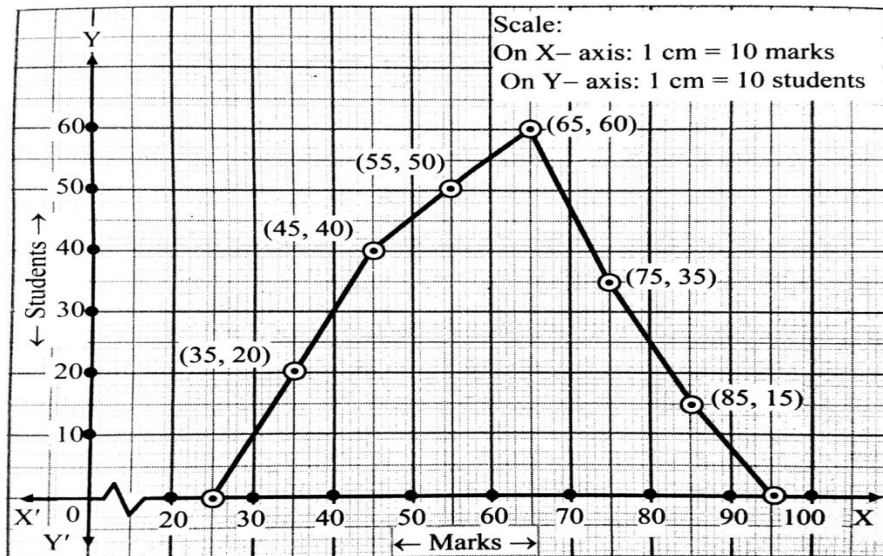

2. Market value of a share is Rs. 200. If the brokerage rate is 0.3% then find the purchase value of the share.

3. In an A.P. 17th term is 7 more than its 10th term. Find the common difference.

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

1. There are six cards in a box, each bearing a number from 0 to 5. Find the probability of each of the following events, that a card drawn shows,
   i. a natural number   ii. a number less than 1   iii. a whole number

2. Shri Shantilal has purchased 150 shares of FV Rs. 100, for MV of Rs. 120. Company has paid dividend at 7%. Find the rate of return on his investment.

3. Observe the following frequency polygon and write the answers of the questions below it.
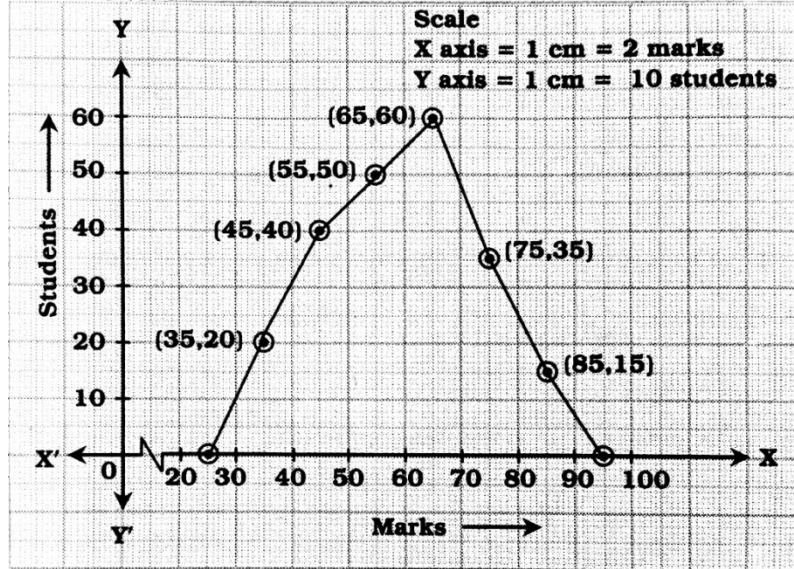
   i. Which class has the maximum number of students ?
   ii. Write classes having zero frequency ?
   iii. What is the class mark of class, having frequency of 50 students ?
   iv. Write the lower and upper class limits of the class whose class mark is 85.
   v. How many students are in the class 80 – 90 ?
   vi. Which class has the minimum number of students ?

4. Solve the following simultaneous equation : $\frac{2}{x} + \frac{2}{3y} = \frac{1}{6}; \frac{3}{x} + \frac{2}{y} = 0$

Q.5 Solve the following questions. (Any one)   **4**

1. A jar contains 24 marbles. Some are green and others are blue. If a marble is drawn at random from the jar, the probability of it being green is $\frac{2}{3}$. Find the number of blue marbles in the jar.

2. Sum of areas of two squares is 244 cm^2 and the difference between their perimeter is 8 cm. Find the ratio of their diagonals.

    3

  Q.6 Solve the following questions. (Any one)

1. The denominator of a fraction is 4 more than twice its numerator. Denominator becomes 12 times the numerator, if both the numerator and the denominator are reduced by 6. Find the fraction.

2. Find k, if kx(x – 2) + 6 = 0 has real and equal roots.

*This question paper is for practice purpose only.