LONG ANSWER TYPE QUESTIONS

1. Solve for *x* and *y*

1/ 2[2x+3y] + 12/7[3x-2y] = ½ ,

7/ [2x+3y] + 4/[3x-2y] = 2

for $2x + 3y \neq 0$ and $3x - 2y \neq 0$

2. Solve for *p* and *q*

[p+q] / pq =2

and [p-q] / pq =6

3. Solve for *x* and *y* ,

2/[3x+2y] + 3/[3x-2y]=17/5 ;

5/[3x+2y] + 1/[3x-2y]=2

4. Solve for *x* and *y* .

6 /[x+y] = 7/ [x-y] + 3 ;

1/ 2[x+y] = 1/ 3[x-y]

5. . Solve for *x* and *y* ;

2/√x + 3/√y =2 ;

4/√x - 9/√y =2 ;

6. *ax* + *by* = 1 ;

bx+ay = $[(a+b)^2]/ [a^2 +b^2]$ - 1

7. If from twice the greater of two nos., 20 is subtracted, the result is the other no. If from twice the smaller no., 5 is subtracted, the result is the greater no. Find the nos.

8. 27 pencils and 31 rubbers together costs Rs. 85 while 31 pencils and 27 rubbers together costs Rs. 89. Find the cost of 2 pencils and 1 rubber.

9. The area of a rectangle remain the same if its length is increased by 7 cm and the breadth is decreased by 3 cm. The area remains unaffected if length is decreased by 7 cm and the breadth is increased by 5 cm. Find length and breadth.

10. A two digit no. is obtained by either multiplying the sum of the digits by 8 and adding 1; or by multiplying the difference of the digits by 13 and adding 2. Find the no. How many such nos. are there.

11. *A* no. consists of three digits whose sum is 17. The middle one exceeds the sum of other two by 1. If the digits are reversed, the no. is diminished by 396. Find the no.

12. A boatman rows his boat 35 km upstream and 55 km down stream in 12 hours. He can row 30 km. upstream and 44 km downstream in 10 hours. Find the speed of he stream and that of the boat in still water. Hence find the total time taken by the boat man to row 50 cm upstream and 77 km downstream.

13. Ashok covers 60 km in 1½ hours with the wind and 2 hours against the wind. Find the speed of the Ashok and speed of the wind.

14. The distance between school and metro station is 300 m. Kartikay starts running from school towards metro station, while Ashu starts running from metro station to school. They meet after 4 minutes. Had Kartikay doubled his speed and Ashu reduced his speed to third of the original they would have met one minute earlier. Find their speeds.

15. Puru chase Vinayak who is 5 km ahead. Vinayak is travelling at a speed of 80 km/h and Puru chase at an average speed of 90 km/h. After how much time Puru met Vinayak.

16. In a unit-test the no. of hose that passed and the no. of these that failed were in the ratio 3:1. Had 8 more appeared and 6 less passed, the ratio of passes to failures would have been 2:1. Find how many appeared?

17. In a function if 10 guests are sent from room *A* to *B*, the no. of guests in room *A* and *B* are same. If 20 guests are sent from *B* to *A*, the no. of guests in *A* is double the no. of guests in *B*. Find no. of guests in both the rooms in the beginning.

18. In a function Madhu wished to give Rs. 21 to each person present and found that she fell short of Rs. 4 so she distributed Rs. 20 to each and found that Rs. 1 were left over. How much money did she gave and how many persons were there.

19. A mobile company charges a fixed amount as monthly rental which includes 100 minutes free per month and charges a fixed amount these after for every additional minute. Abhishek paid Rs. 433 for 370 minutes and Ashish paid Rs. 398 for 300 minutes. Find the bill amount under the same plain, if Usha use for 400 minutes.

20. Places A and B are 80 km apart from each other on a highway. A car starts from A and another from B at the same time . If they moves in the same direction, they meet in 8 hours and if they move in opposite directions, they meet in 1 hours and 20 minutes. Find the speed of the cars.

21 Points A and B are 100 km apart on a highway. One car starts from A and another from B at the same time. If the car travel in the same direction at a constant speed, they meet in 5 hours if the car travel towards each other, they meet in 1 hour. What are the speeds of the two cars.

22 A boat goes 12 km upstream and 40 km downstream in 8 hours. It can go 16 km upstream and 32 km downstream is the same time. Find the speed of the boat in still water and the speed of the stream.

23. A boat goes 16 km upstream and 24 km down stream in 6 hours. It can go 12km upstream and 36km downstream in the same time. Find the speed of the boat in still water and the speed of the stream.

24. A Person can row 8 km upstream and 24 km down stream in 4 hours. He can row 12 km downstream and 12 km upstream in4 hours. Find the speed of the person in still water and also the speed of the current.

25. There are two class rooms A and B containing students. If 5 students are shifted from room A to room B, the resulting number of students in the two rooms become equal. If 5 student are

shifted from room B to room A, the resulting number of student's in room A becomes double the number of student left in room B. find the original number of student in the two rooms seperately.

26. The coach of a cricket team buys three bats and six balls for Rs. 3900. Later, she buys another bat and two more balls of the same kind for Rs. 1300. Represent this situation algebraically and geometrically(graphically).
[x + 2y = 1300 and x + 3y = 1300, where x = cost in Rs. of one ball and y = cost in Rs. of bat].

27. The cost of 2 kg of apples and 1 kg of grapes on a day was found to be Rs 160. After a month, the cost of 4 kg of apples and 2 kg of grapes is Rs 300. Represent the situation algebraically and geometrically(graphically).
[2x + y = 160 and 4x + 2y = 300, where x = price of 1 kg (in Rs.) of apple and y = price of 1 kg (in Rs.) of grapes].

28. Akhila went to a fair with Rs. 20 and want to have rides on the Giant Wheel and play Hoopla. The number of times she played Hoopla is half the number of rides she had on the Giant Wheel. If each ride costs Rs. 3 and a game of Hoopla costs Rs. 4, how would you find out the number of rides she had and how many times she played Hoopla.
[x – 2y = 0 and 3x + 4y = 20 ; the value of x = 4 and y = 2].

29. Romila went to a stationary shop and purchased 2 pencils and 3 erasers for Rs. 9. Her friend Sonali saw the new variety of pencils and erasers with Romila, and she also bought 4 pencils and 6 erasers of the same kind for Rs. 18. Represent this situation algebraically and graphically.
[2x + 3y = 9 and 4x + 6y = 18].

30. Two rails are represented by the equations x + 2y – 4 = 0 and 2x + 4y – 12 = 0. Represent this situation geometrically.