

Group-A

Read the following stems and answer any three of the following questions:

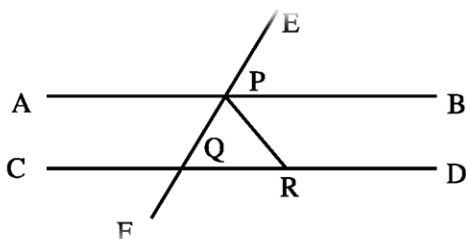
10×3=30

1. 23805 and 651201 are two numbers:
 - a) Give reason whether the number 21952 be a perfect square number or not. 2
 - b) What is the least number which is to be divided by the first number so that the quotient would be a perfect square number? 4
 - c) What is the least number which is to be subtracted from the second number, so that the difference is a perfect square number. 4

2. The ratio of weight of milk and water in first mixture is 6:7. The ratio of weight of water and sugar in second mixture is 8:5 and the weight of the second mixture is 650 gm.
 - a) Find the successive ratio of milk, water and sugar. 2
 - b) what will be the ratio of milk, water and sugar if we mix the two mixtures? 4
 - c) How much sugar is to be added in the second mixture to make the ratio 12:11. 4

3. $A = x^2 - xy + y^2$, $B = x + y$ and $C = x^6 - y^6$
 - a) Multiply B by $(x - y)$. 2
 - b) Prove that, $AB = x^3 + y^3$. 4
 - c) Find the value of $C \div AB$. 4

4.



- a) Find the pairs of alternate angles and write down two properties of alternate angles. 2
- b) Prove that $\angle BPQ = \angle PQC$. 4
- c) If $\angle APE = 120^\circ$ and $PQ = PR$, then prove that $\triangle PQR$ is an equilateral triangle. 4

Group-B

Choose the correct answer and write in answer script.

1×20=20

- 1) If 97969 trees are arranged in square form, what will be the number of rows and columns?
 - a) 303
 - b) 313
 - c) 323
 - d) 333
- 2) Which one is an irrational number?
 - a) 234
 - b) 3.45
 - c) $\frac{13}{7}$
 - d) 6.24381.....
- 3) What is the least number which is to be added with 136 so the summation would be perfect square?
 - a) 4
 - b) 8
 - c) 16
 - d) 36
- 4) What will be the digits in unit place in the square root of the numbers 169 and 289?
 - a) 7, 7
 - b) 7, 3
 - c) 3, 7
 - d) 3, 3
- 5)
 - i. 256 is a perfect square number.
 - ii. 1057 is not a perfect square number.
 - iii. the square root of 841 is 29.
 Which one of the following is correct?
 - a) i
 - b) i and ii
 - c) ii and iii
 - d) i, ii and iii
- 6) How many digits are there in the square root of 3228853329?

