<b>Q1.</b> By adding x to 1254934, the resulting number divisible y 1, while adding y 1, y = -1 (g) x = -1, y =	Mathematics					
to 125934 makes the resulting number divisible $y_3$ . Which one of the following is the set of values for x and $y^2$ (a) $x = 1, y = 1$ (b) $x = 1, y = -1$ (c) $x = -1, y = 1$ (d) $x = -1, y = -1$ (e) $x = -1, y = 1$ (d) $x = -1, y = -1$ (e) $x = -1, y = 1$ (d) $x = -1, y = -1$ (e) $x = -1, y = 1$ (d) $x = -1, y = -1$ (e) $x = -1, y = 1$ (d) $x = -1, y = -1$ (e) $x = -1, y = 1$ (d) $x = -1, y = -1$ (e) $x = -1, y = 1$ (d) $x = -1, y = -1$ (e) $x = -1, y = 1$ (d) $x = -1, y = -1$ (e) $x = -1, y = 1$ (d) $x = -1, y = -1$ (e) $x = -1, y = 1$ (d) $x = -1, y = -1$ (e) $x = -1, y = 1$ (d) $x = -1, y = -1$ (e) $x = -1, y = 1$ (f) $x = -1, y = -1$ (g) $x = -1, y = 1$ (d) $x = -1, y = -1$ (e) $x = -1, y = 1$ (f) $x = -1, y = -1$ (g) $x = -1, y = 1$ (f) $x = -1, y = -1$ (g) $x = -1, y = 1$ (f) $x = -1, y = -1$ (g) $x = -1, y = 1$ (f) $x = -1, y = -1$ (g) $x = -1, y = 1$ (f) $x = -1, y = -1$ (g) $x = -1, y = 1$ (f) $x = -1, y = -1$ (g) $x = -1, y = 1$ (f) $x = -1, y = -1$ (g) $x = -1, y = 1$ (f) $x = -1, y = -1$ (g) $x = -1, y = 1$ (f) $x = -1, y = -1$ (g) $x = -1, y = 1$ (f) $x = -1, y = -1$ (g) $x = -1, y = 1$ (f) $x = -1, y = -1$ (g) $x = -1, y = 1$ (f) $x = -1, y = -1$ (g) $x = -1, y = 1$ (f) $x = -1, y = -1$ (g) $x = -1, y = 1$ (g) $x = -1, y = -1$ (g) $x = -1, y = -1, y = -1$ (g) $x = -1, y = -1, y = -1$ (g) $x = -1, y = -$	<b>Q1.</b> By adding x to 1254934, the resulting number becomes divisible by 11, while adding y	(a) 692 (b) 764 (c) 1080 (d) 1092				
(a) $x = 1, y = 1$ (b) $x = 1, y = -1$ (c) $x = -1, y = 1$ (c) $x = -1, y = -1$ (c) $x = -1, y = -1, y = -1$ (c) $x = -1, y = -1, y = -1$ (c) $x = -1, y = -1, y = -1$ (c) $x = -1, y = -1, y = -1$ (c) $x = -1, y = -1, y = -1$ (c) $x = -1, y = -1, y = -1$ (c) $x = -1, y = -1, y = -1$ (c) $x = -1, y = -1, y = -1$ (c) $x = -1, y = -1, y = -1, y = -1$ (c) $x = -1, y = -1, y = -1, y = -1$ (c) $x = -1, y = -1, y = -1, y = -1$ (c) $x = -1, y = -1, y = -1, y = -1, y = -1$ (c) $x = -1, y = $	to 1254934 makes the resulting number divisible by 3. Which one of the following is the set of values for x and y?	<b>Q15.</b> The product of two numbers is 6912 and their GCD is 24. What is their LCM? (a) 280 (b) 286 (c) 288 (d) 296				
(c) $x = -1$ , $y = 1$ (d) $x = -1$ , $y = -1$ (g) $x = -1$ , $y = 1$ (d) $x = -1$ , $y = -1$ (g) (16. For any integer n, what is HCF (22n + 7, 33n + 10) equal to <sup>2</sup> (a) n (b) 1 (c) 11 (d) None of these (g) Only 18(b) Only 42 (c) Only 60(d) Both b and c (g) What is the sum of all prime numbers hetween 100 and 120? (h) 650 (c) 644 (d) 533 (g) 7 (d) 9 (g) 1 (b) 1 (c) 7 (d) 9 (g) 1 (b) 1 (c) 7 (d) 9 (g) 1 (b) 2 (c) 7 (d) 9 (g) 1 (b) 1 (c) 17 (d) 9 (g) 0 (f) 1 (c) 2 (d) 3 (g) 0 (f) 1 (c) 2 (d) 4 (g) 1 (b) 2 (c) 3 (d) 4 (g) 1 (b) 2 (c) 2 (d) 4 (g) 3 (b) 7 (c) 2 (d) 4 (g) 3 (b) 7 (c) 2 (d) 4 (g) 3 (b) 7 (c) 2 (d) 4 (g) 3 (b)	(a) $x = 1, y = 1$ (b) $x = 1, y = -1$	(a) 200 (b) 200 (c) 200 (a) 200				
<b>Q2.</b> If the numbers $q, q + 2$ and $q + 6$ are all prime, then what can be the value of $3, q + 92$ (a) Only 18(b) Only 42 (c) Only 60(d) Both b and c <b>Q3.</b> What is the sum of all prime numbers between 100 and 120? (a) 650 (b) 650 (c) 644 (d) 533 <b>Q4.</b> The angles of a triangle are in AP and the greatest angle is double the least. What is the trait of angles in the radium measure? (a) $21, 215$ can be written as a terminating decimal. III. 1/16 can be written	(c) $x = -1$ , $y = 1$ (d) $x = -1$ , $y = -1$	<b>Q16.</b> For any integer n, what is HCF $(22n + 7, 33n + 10)$ equal to?				
prime, then what due to the value of $\sqrt{4} + 9^{2}$ (a) Ohly 18(0) Ohly 42(2) Ohly 60(2) Ohly 60(4) Ohly 6 back <b>Q3.</b> What is the sum of all prime numbers between 100 and 120? (a) 652 (b) 650 (c) 644 (d) 533 <b>Q4.</b> The angles of a triangle are in AP and the greatest angle is double the least. What is the ratio of angles in the radium measure? (a) 2: 3: 4 (b) 1: 2: 3 (c) 3: 3: 6 (d) 4: 5: 7 <b>Q5.</b> What is the last digit in the expansion of $3^{1769}$ ? (a) 1 (b) 3 (c) 7 (d) 9 <b>Q6.</b> If three sides of a right angled triangle are integers in their lowest form, then one of its sides is always divisible by (a) 1 (b) 13 (c) 7 (d) 9 <b>Q6.</b> If three sides of a right angled triangle are integers in their lowest form, then one of its sides is always divisible by (a) 1 (b) 14 (c) 15 (d) None of these <b>Q7.</b> How many numbers between - 11 and 11 are multiples of 2 or 39 (a) 1 (b) 14 (c) 15 (d) None of these <b>Q8.</b> What is the harmonic mean of 10, 20, 25, 40 and 50? (a) 1 (b) 2 (c) 6 (d) None of these <b>Q9.</b> If k is a positive integer, then every square integers is of the form (a) only 4k (b) 4k or 4k + 1 <b>Q10.</b> If N <sup>3</sup> - 33, N <sup>3</sup> - 31 and N <sup>3</sup> - 29 are prime numbers, then what is the number of possible values of N, where N is an integer? (a) 1 (b) 2 (c) 6 (d) None of these <b>Q1.</b> The difference between the squares of two (a) 5 (b) 7 (c) 8 (d) 16 <b>Q1.</b> The difference between the squares of two (a) 0 (b) 1 (c) 2 (d) 3 <b>Q2.</b> if the radius of the base and the height of a right circular cone are increased by 20%, then what is the eapproximate percentage increase in volume? (a) 1 (b) 2 (c) 3 (d) 4 <b>Q13.</b> What is the HCF of (x <sup>2</sup> + bx - x - b) and [x <sup>4</sup> x (a (-1) - a]? (a) 1 (b) 2 (c) 3 (d) 4 <b>Q23.</b> 10 years ago, Ram was 5 times as old as Shyam blow for a sold as Shyam. How many years old is Shyam?	<b>Q2.</b> If the numbers q, $q + 2$ and $q + 6$ are all prime, then what each has the value of $2q + 02$	(a) n (b) 1 (c) 11 (d) None of these				
<b>93.</b> What is the sum of all prime numbers between 100 and 1207 (a) 650 (c) 644 (d) 533 (c) 71 (d) 9 (d) 753 (c) 71 (d) 9 (c) 7 (d) 9 (c) 8 (d) 1 (c) 2 (c) 7 (d) 9 (c) 8 (d) 1 (c) 2 (c) 7 (d) 9 (c) 8 (d) 1 (c) 2 (c) 7 (d) 9 (c) 8 (d) 1 (c) 2 (c) 7 (d) 9 (c) 8 (d) 1 (c) 2 (c) 7 (d) 9 (c) 8 (d) 1 (c)	(a) Only 18(b) Only 42 (c) Only 60(d) Both b and c	<b>Q17.</b> Consider the following statements: I. 1/22 cannot be written as a terminating				
between 100 and 120? (a) 652 (b) 550 (c) 644 (d) 533 <b>Q4.</b> The angles of a triangle are in AP and the greatest angle is double the least. What is the tratio of angles in the radium measure? (a) 2: 3: 4 (b) 1: 2: 3 (c) 3: 3: 6 (d) 4: 5: 7 <b>Q5.</b> What is the last digit in the expansion of grows? (a) 1 (b) 3 (c) 7 (d) 9 <b>Q6.</b> If three sides of a right angled triangle are integers in their lowest form, then one of its sides is always divisible by (a) 5 (b) 5 (c) 7 (d) None of these <b>Q7.</b> How many numbers between - 11 and 11 are multiples of 2 or 3? (a) (a) 11 (b) 14 (c) 15 (d) None of these <b>Q8.</b> What is the harmonic mean of 10, 20, 25, 40 and 50? (a) (a) 12 (b) 30 (c) 26.1 (d) 21.3 <b>Q9.</b> If k is a positive integer, then every square integer is of the form (a) only 4 (b) 4k or $4k + 3$ (c) $4k + 1$ or $4k + 3$ (d) 4k or $4k + 1$ <b>Q10.</b> If N <sup>2</sup> - 33, N <sup>2</sup> - 31 and N <sup>2</sup> - 29 are prime numbers, then what is the number of possible values of N, where N is an integer? (a) 1 (b) 2 (c) 6 (d) None of these <b>Q11.</b> The difference between the squares of two consecutive odd integers is always divisible by (a) 1 (b) 2 (c) 3 (d) 4 <b>Q13.</b> What is the HCF of (x <sup>2</sup> + bx - x - b) and [x <sup>2</sup> + x(a - 1) - a]? (a) X + b (b) x + a (c) x + 1 (d) x - 1 <b>Q14.</b> Consider those number between 300 and 400 such that when each number is divided by 6, ond 420 it lowes 4 cor x = moninder in each corso. <b>Q23.</b> I O years ago, Ram was 5 times as old as Shyme? (a) 1 (b) 2 (c) 3 (d) 4 <b>Q33.</b> 10 years ago, Ram was 5 times as old as Shyme? (a) 10 year (b) are sold as Shym. How many years old is Bhyma? (b) $4k = 0x + 1 (d) x - 1$ <b>Q14.</b> Consider those number between 300 and 400 such that when each number is divided by 6, ond 420 it lowes 4 cor x = moninder in each corso. (b) 1 (c) 2 (d) 4 <b>Q33.</b> 10 years ago, Ram was 5 times as old as Shyme?	<b>Q3.</b> What is the sum of all prime numbers	decimal.				
<b>Q4.</b> The angles of a triangle are in AP and the greatest angle is double the least. What is the ratio of angles in the ratio an measure? (a) 2: 3: 4 (b) 1: 2: 3 (c) 3: 3: 6 (d) 4: 5: 7 <b>Q5.</b> What is the last digit in the expansion of $\frac{1}{3}\sqrt{598}$ , (a) 1 (b) 3 (c) 7 (d) 9 <b>Q6.</b> If three sides of a right angled triangle are integers in their lowest form, then one of its sides is always divisible by (a) 1 (b) 1 (c) 1 (d) None of these <b>Q7.</b> How many numbers between - 11 and 11 are multiples of 2 or 3? (a) 1 (b) 1 (c) 15 (d) None of these <b>Q7.</b> How many numbers between - 11 and 11 are multiples of 2 or 3? (a) 1 (b) 1 (c) 15 (d) None of these <b>Q8.</b> What is the harmonic mean of 10, 20, 25, 40 and 50? (a) 2 (c) 6 (d) None of these <b>Q9.</b> If k is a positive integer, then every square integer is of the form (a) only 4k (b) 4k or 4k + 3 (c) 4k + 1 or 4k + 3 (d) 4k or 4k + 1 <b>Q10.</b> If $N^2 - 33$ , $N^2 - 31$ and $N^2 - 29$ are prime numbers, then what is the number of possible values of N, where N is an integer? (a) 1 (b) 2 (c) 6 (d) None of these <b>Q11.</b> The difference between the squares of two consecutive odd integers is always divisible by (a) 1 (b) 2 (c) 6 (d) None of these <b>Q12.</b> What is the HCF of (x <sup>2</sup> + bx - x - b) and [x <sup>2</sup> (a) 1 (b) 2 (c) 3 (d) 4 <b>Q13.</b> What is the HCF of (x <sup>2</sup> + bx - x - b) and [x <sup>2</sup> (a) $(3 + b)$ (b) $x^+ a$ (c) $x + 1$ (d) $x - 1$ <b>Q14.</b> Consider those number between 300 and 400 such that when each number is divided by 6, (a) $(x + b)$ (b) $x^+ a$ (c) $x + 1$ (d) $x - 1$ <b>Q14.</b> Consider those number between 300 and 400 such that when each number is divided by 6, (a) $(1 + b)$ (b) $(2 + c)$ 2 (d) 4 <b>Q23.</b> 10 years ago, Ram was 5 times as old as Shyam. How many years old is Shyam?	(a) 652 (b) 650 (c) 644 (d) 533	III. 1/16 can be written as a terminating decimal. Which of the statements given above is/are				
greatest angle is double the least, what is the ratio of angles in the radian measure? (a) 2: 3: 4 (b) 1: 2: 3 (c) 3: 3: 6 (d) 4: 5: 7 <b>Q5.</b> What is the last digit in the expansion of $3^{4795}$ ? (a) 1 (b) 3 (c) 7 (d) 9 <b>Q6.</b> If three sides of a right angled triangle are integers in their lowest form, then one of its sides is always divisible by (a) 6 (b) 5 (c) 7 (d) None of these <b>Q7.</b> How many numbers between = 11 and 11 are multiples of 2 or 3? (a) 11 (b) 14 (c) 15 (d) None of these <b>Q8.</b> What is the harmonic mean of 10, 20, 25, 40 and 50? (a) 25 (b) 30 (c) 26.1 (d) 21.3 <b>Q9.</b> If k is a positive integer, then every square integer is of the form (a) only 4k (b) 4k or 4k + 3 (c) 4k + 1 or 4k + 3 (d) 4k or 4k + 1 <b>Q10.</b> If N <sup>2</sup> - 33, N <sup>2</sup> - 31 and N <sup>2</sup> - 29 are prime numbers, then what is the number of possible values of N, where N is an integer? (a) 1 (b) 2 (c) 6 (d) None of these <b>Q11.</b> The difference between the squares of two consecutive odd integers is always divisible by (a) 3 (b) 7 (c) 8 (d) 16 <b>Q12.</b> What is the HCF of (x <sup>2</sup> + bx - x - b) and [x <sup>2</sup> + x(a - 1) - a]? (a) x + b (b) x + a (c) x + 1 (d) x - 1 <b>Q14.</b> Consider those number between 300 and 400 such that when each number is divided by 6, num 4/2 it bareat 40 are ramainder is always divisible by (a) x + b (b) x + a (c) x + 1 (d) x - 1 <b>Q14.</b> Consider those number between 300 and 400 such that when each number is divided by 6, num 4/2 it bareat 40 are ramainder is an optical bar of x <sup>2</sup> (a) 1/3 (b) ½ (c) 2 (d) 4 <b>Q23.</b> 10 years ago, Ram was 5 times as old as Shyam?	<b>Q4.</b> The angles of a triangle are in AP and the	correct?				
(a) 2: 3: 4 (b) 1: 2: 3 (c) 3: 3: 6 (d) 4: 5: 7 <b>Q5.</b> What is the last digit in the expansion of $3^{1796}$ ? (a) 1 (b) 3 (c) 7 (d) 9 (a) 5 (c) 7 (d) 9 (a) 6 (b) 5 (c) 7 (d) None of these <b>Q7.</b> How many numbers between - 11 and 11 are multiples of 2 or 3? (a) 11 (b) 14 (c) 15 (d) None of these <b>Q8.</b> What is the harmonic mean of 10, 20, 25, 40 and 50? (a) 25 (b) 30 (c) 26.1 (d) 21.3 <b>Q9.</b> If k is a positive integer, then every square integer is of the form (a) only 4k (b) 4k or 4k + 3 (c) 4k + 1 or 4k + 3 (d) 4k or 4k + 1 <b>Q10.</b> If N <sup>2</sup> - 33, N <sup>2</sup> - 31 and N <sup>2</sup> - 29 are prime numbers, then what is the number of possible values of N, where N is an integer? (a) 1 (b) 2 (c) 6 (d) None of these <b>Q11.</b> The difference between the squares of two consecutive odd integers is always divisible by (a) 3 (b) 7 (c) 8 (d) 16 <b>Q12.</b> What is the HCF of (x <sup>2</sup> + bx - x - b) and [x <sup>2</sup> + x (a - 1) - a]? (a) x + b (b) x + a (c) x + 1 (d) x - 1 <b>Q14.</b> Consider those number between 300 and 400 such that when each number is divided by 6, ord 1.2 is the weat An expensioned weat <b>Q13.</b> Other adjustes of two consecutive odd integers is always divisible by (a) 1 (b) 2 (c) 3 (d) 4 <b>Q13.</b> What is the HCF of (x <sup>2</sup> + bx - x - b) and [x <sup>2</sup> + x (a - 1) - a]? (a) x + b (b) x + a (c) x + 1 (d) x - 1 <b>Q14.</b> Consider those number between 300 and 400 such that when each number is divided by 6, ord 1.2 is the ward An a charmonic regard and form (a) x + b (b) x + a (c) x + 1 (d) x - 1 <b>Q14.</b> Consider those number is divided by 6, ord 1.2 is the ward An a expensioned weap (a) (b) 14 (c) 2 (d) 4 <b>Q23.</b> 10 years ago, Ram was 5 times as old as Shyam but 20 years later from now he will be only twice as old as Shyam. How many years old is hyam but 20 years later from now he mill be only twice as old as Shyam. How many years old	ratio of angles in the radian measure?	(a) Only I (b) Only II (c) Only I and III (d) II and III				
<b>Q5.</b> What is the last digit in the expansion of $\frac{34798}{2}$ ? (a) 1 (b) 3 (c) 7 (d) 9 <b>Q6.</b> If three sides of a right angled triangle are integers in their lowest form, then one of its sides is always divisible by (a) 6 (b) 5 (c) 7 (d) None of these <b>Q7.</b> How many numbers between - 11 and 11 are multiples of 2 or 3? (a) 11 (b) 14 (c) 15 (d) None of these <b>Q8.</b> What is the harmonic mean of 10, 20, 25, 40 and 50? (a) 25 (b) 30 (c) 26.1 (d) 21.3 <b>Q9.</b> If k is a positive integer, then every square integer is of the form (a) only 4k (b) 4k or 4k + 3 (c) 4k + 1 or 4k + 3 (d) 4k or 4k + 1 <b>Q10.</b> If N <sup>2</sup> - 33, N <sup>2</sup> - 31 and N <sup>2</sup> - 29 are prime numbers, then what is the number of possible values of N, where N is an integer? (a) 1 (b) 2 (c) 6 (d) None of these <b>Q11.</b> The difference between the squares of two conscutive odd integers is always divisible by (a) 3 (b) 7 (c) 8 (d) 16 <b>Q12.</b> What is the HCF of (x <sup>2</sup> + bx - x - b) and [x <sup>2</sup> + x(a - 1) - a]? (a) x + b (b) x + a (c) x + 1 (d) x - 1 <b>Q14.</b> Consider those number between 300 and 400 such that when each number is divided by 6, or 71 (c) 2 (d) 4 <b>Q23.</b> 10 years ago, Ram was 5 times as old as Shyam. How many years old is only by (c) 2 (d) 4 <b>Q23.</b> 10 years ago, Ram was 5 times as old as Shyam. How many years old is Shyam but 20 years later from now he will be only twice as old as Shyam. How many years old is Shyam but 20 years later from now he mill be only twice as old as Shyam. How many years old is Shyam but 20 years later from now he mill be only twice as old as Shyam. How many years old is Shyam?	(a) 2: 3: 4 (b) 1: 2: 3 (c) 3: 3: 6 (d) 4: 5: 7	018				
(a) 1 (b) 3 (c) 7 (d) 9 (a) 1 (b) 3 (c) 7 (d) 9 (b) (c) 7 (d) 9 (c) 1 (three sides of a right angled triangle are intregers in their lowers form, then one of its sides is always divisible by (a) 6 (b) 5 (c) 7 (d) None of these (c) (x) $3 + \sqrt{6}$ (c) (x) $\sqrt{2} + \sqrt{7}$ (d) (x) $\sqrt{2} + \sqrt{7}$ (d) (x) $\sqrt{2} + \sqrt{5}$ (e) (x) $\sqrt{2} + \sqrt{5}$ (f) (g) (x) $\sqrt{2} + \sqrt{5}$ (g) 1 (k) is a positive integer, then every square integer is of the form (a) only 4k (b) 4k or 4k + 3 (c) 4k + 1 or 4k + 3 (d) 4k or 4k + 1 (g) 4k or 4k + 3 (c) 4k + 1 or 4k + 3 (d) 4k or 4k + 1 (g) (1) If N <sup>2</sup> - 33, N <sup>2</sup> - 31 and N <sup>2</sup> - 29 are prime numbers, then what is the number of possible values of N, where N is an integer? (a) 1 (b) 2 (c) 6 (d) None of these (g) 1. The difference between the squares of two consecutive odd integers is always divisible by (a) 3 (b) 7 (c) 8 (d) 16 (g) 22. What is the remainder obtained when 1421 x 1423 x 1425 is divided by 12? (a) 1 (b) 2 (c) 3 (d) 4 (g) 24. Consider those number between 300 and 400 such that when each number is divided by 6, (a) 1/3 (b) $\sqrt{2}$ (c) 2 (d) 4 (g) 3. (b) 5 (a) x + a (c) x + 1 (d) x - 1 (g) 44. Consider those number between 300 and 400 such that when each number is divided by 6, (a) 1 (b) 2 (c) 2 (d) 4 (g) 4. Consider those number is divided by 6, (g) 4. Consider th	<b>Q5.</b> What is the last digit in the expansion of	What is the square root of $9 + 2\sqrt{14}$ ?				
<b>96.</b> If three sides of a right angled triangle are integers in their lowest form, then one of its sides is always divisible by (a) 6 (b) 5 (c) 7 (d) None of these <b>97.</b> How many numbers between = 11 and 11 are multiples of 2 or 3? (a) 11 (b) 14 (c) 15 (d) None of these <b>98.</b> What is the harmonic mean of 10, 20, 25, 40 and 50? (a) 25 (b) 30 (c) 26.1 (d) 21.3 <b>99.</b> If k is a positive integer, then every square integer is of the form (a) only 4k (b) 4k or 4k + 3 (c) 4k + 1 or 4k + 3 (d) 4k or 4k + 1 <b>91.</b> If $\sqrt{1 + \frac{93}{196}} = 1 + \frac{x}{14}$ , then what does x equal to? (a) 0 (b) 1 (c) 2 (d) 3 <b>92.</b> If the radius of the base and the height of a right circular cone are increased by 20%, then what is the number of possible values of N, where N is an integer? (a) 1 (b) 2 (c) 6 (d) None of these <b>91.</b> The difference between the squares of two consecutive dod integers is always divisible by (a) 3 (b) 7 (c) 8 (d) 16 <b>92.</b> What is the remainder obtained when 1421 × 1423 × 1425 is divided by 12? (a) 1 (b) 2 (c) 3 (d) 4 <b>92.</b> I. An employee is required to contribute 10% of his payment to General Provident Fund. If he gets Rs13500 as net pay in a month, then what is the monthly General Provident Fund (a) 150 (e) 1500 (d) 1650 <b>922.</b> x varies inversely as the square of y in such a way that, if $x = 1$ , then $y = 6$ . If $y = 3$ , then what is the tHCF of $(x^2 + bx - x - b)$ and $[x^2 + (x - 1) - a]^2$ (a) $x + b$ (b) $x + a$ (c) $x + 1$ (d) $x - 1$ <b>92.</b> If $x = 3$ , then what is the watue of $x$ ? (a) 1/3 (b) $\frac{1}{2}$ (c) 2 (d) 4 <b>923.</b> 10 years ago, Ram was 5 times as old as Shyam but 20 years later from now he will be only twice as old as Shyam. How many years old is Shyam?	3 <sup>4798</sup> ? (a) 1 (b) 3 (c) 7 (d) 9	(a)				
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<b>Q9.</b> If k is a positive integer, then every square integer is of the form (a) only 4k (b) 4k or 4k + 3 (c) 4k + 1 or 4k + 3 (d) 4k or 4k + 1 <b>Q10.</b> If N <sup>2</sup> - 33, N <sup>2</sup> - 31 and N <sup>2</sup> - 29 are prime numbers, then what is the number of possible values of N, where N is an integer? (a) 1 (b) 2 (c) 6 (d) None of these <b>Q11.</b> The difference between the squares of two consecutive odd integers is always divisible by (a) 3 (b) 7 (c) 8 (d) 16 <b>Q12.</b> What is the remainder obtained when 1421 × 1423 × 1425 is divided by 12? (a) 1 (b) 2 (c) 3 (d) 4 <b>Q13.</b> What is the HCF of $(x^2 + bx - x - b)$ and $[x^2 + x (a - 1) - a]?$ (a) x + b (b) x + a (c) x + 1 (d) x - 1 <b>Q14.</b> Consider those number between 300 and 400 such that when each number is divided by 6, or and 1/2 it leaves 4 as remainder in each case and the height of a right circular cone are increased by 20%, then what is the monthy General Provident Fund. If he gets Rs13500 as net pay in a month, then what is the monthly General Provident Fund contribution (assuming no other deductions)? (a) 1215 (b) 1350 (c)1500 (d) 1650 <b>Q22.</b> x varies inversely as the square of y in such a way that, if $x = 1$ , then $y = 6$ . If $y = 3$ , then what is the value of x? (a) 1/3 (b) ½ (c) 2 (d) 4 <b>Q23.</b> 10 years ago, Ram was 5 times as old as Shyam but 20 years later from now he will be only twice as old as Shyam. How many years old is Shyam?	(a) 25 (b) 30 (c) 26.1 (d) 21.3	If $\sqrt{1+\frac{93}{11}} = 1+\frac{x}{11}$ , then what does x equal to?				
(a) only 4k (b) 4k or $4k + 3$ (c) $4k + 1$ or $4k + 3$ (d) 4k or $4k + 1$ <b>Q20.</b> if the radius of the base and the height of a right circular cone are increased by 20%, then what is the number of possible values of N, where N is an integer? (a) 1 (b) 2 (c) 6 (d) None of these <b>Q11.</b> The difference between the squares of two consecutive odd integers is always divisible by (a) 3 (b) 7 (c) 8 (d) 16 <b>Q12.</b> What is the remainder obtained when 1421 $\times 1423 \times 1425$ is divided by 12? (a) 1 (b) 2 (c) 3 (d) 4 <b>Q13.</b> What is the HCF of ( $x^2 + bx - x - b$ ) and [ $x^2$ $+ x (a - 1) - a$ ]? (a) $x + b$ (b) $x + a$ (c) $x + 1$ (d) $x - 1$ <b>Q14.</b> Consider those number between 300 and 400 such that when each number is divided by 6, or and 12 it heaves 4 as remainder in each case.	<b>Q9.</b> If k is a positive integer, then every square integer is of the form	(a) 0 (b) 1 (c) 2 (d) 3				
(c) $4k + 1$ of $4k + 3$ (d) $4k$ of $4k + 1$ <b>Q10.</b> If $N^2 - 33$ , $N^2 - 31$ and $N^2 - 29$ are prime numbers, then what is the number of possible values of N, where N is an integer? (a) 1 (b) 2 (c) 6 (d) None of these <b>Q11.</b> The difference between the squares of two consecutive odd integers is always divisible by (a) 3 (b) 7 (c) 8 (d) 16 <b>Q12.</b> What is the remainder obtained when 1421 $\times 1423 \times 1425$ is divided by 12? (a) 1 (b) 2 (c) 3 (d) 4 <b>Q13.</b> What is the HCF of $(x^2 + bx - x - b)$ and $[x^2 + x (a - 1) - a]$ ? (a) $x + b$ (b) $x + a$ (c) $x + 1$ (d) $x - 1$ <b>Q14.</b> Consider those number between 300 and 400 such that when each number is divided by 6, 9 and 12 it leaves 4 as remainder in each case	(a) only $4k$ (b) $4k$ or $4k + 3$	<b>020</b> if the radius of the base and the height of a				
<b>Q10.</b> If $N^2 - 33$ , $N^2 - 31$ and $N^2 - 29$ are prime numbers, then what is the number of possible values of N, where N is an integer? (a) 1 (b) 2 (c) 6 (d) None of these <b>Q11.</b> The difference between the squares of two consecutive odd integers is always divisible by (a) 3 (b) 7 (c) 8 (d) 16 <b>Q12.</b> What is the remainder obtained when 1421 $\times 1423 \times 1425$ is divided by 12? (a) 1 (b) 2 (c) 3 (d) 4 <b>Q13.</b> What is the HCF of $(x^2 + bx - x - b)$ and $[x^2 + x (a - 1) - a]$ ? (a) x + b (b) x + a (c) x + 1 (d) x - 1 <b>Q14.</b> Consider those number between 300 and 400 such that when each number is divided by 6, 0 and 12 it leaves 4 as remainder in each case	(c) $4K + 1$ or $4K + 3$ (d) $4K$ or $4K + 1$	right circular cone are increased by 20%, then				
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<b>Q11.</b> The difference between the squares of two consecutive odd integers is always divisible by (a) 3 (b) 7 (c) 8 (d) 16 <b>Q12.</b> What is the remainder obtained when 1421 $\times 1423 \times 1425$ is divided by 12? (a) 1 (b) 2 (c) 3 (d) 4 <b>Q13.</b> What is the HCF of $(x^2 + bx - x - b)$ and $[x^2 + x (a - 1) - a]$ ? (a) $x + b$ (b) $x + a$ (c) $x + 1$ (d) $x - 1$ <b>Q14.</b> Consider those number between 300 and 400 such that when each number is divided by 6, 9 and 12 it leaves 4 as remainder in each case	(a) 1 (b) 2 (c) 0 (a) None of these	<b>Q21.</b> An employee is required to contribute 10%				
(a) 3 (b) 7 (c) 8 (d) 16 (a) 3 (b) 7 (c) 8 (d) 16 (a) 3 (b) 7 (c) 8 (d) 16 (c) 122 (c) 3 (d) 4 (c) 123 (c) 125 (c) 1250 (c)	<b>Q11.</b> The difference between the squares of two	of his payment to General Provident Fund. If he gets Rs13500 as net pay in a month, then what				
<b>Q12.</b> What is the remainder obtained when 1421 $\times 1423 \times 1425$ is divided by 12? (a) 1 (b) 2 (c) 3 (d) 4 <b>Q13.</b> What is the HCF of $(x^2 + bx - x - b)$ and $[x^2 + x (a - 1) - a]$ ? (a) $x + b$ (b) $x + a$ (c) $x + 1$ (d) $x - 1$ <b>Q14.</b> Consider those number between 300 and 400 such that when each number is divided by 6, 9 and 12 it leaves 4 as remainder in each case	(a) 3 (b) 7 (c) 8 (d) 16	is the monthly General Provident Fund				
(a) 1 (b) 2 (c) 3 (d) 4 <b>Q13.</b> What is the HCF of $(x^2 + bx - x - b)$ and $[x^2 + x (a - 1) - a]$ ? (a) $x + b$ (b) $x + a$ (c) $x + 1$ (d) $x - 1$ <b>Q22.</b> x varies inversely as the square of y in such a way that, if $x = 1$ , then $y = 6$ . If $y = 3$ , then what is the value of x? (a) $1/3$ (b) $\frac{1}{2}$ (c) 2 (d) 4 <b>Q23.</b> 10 years ago, Ram was 5 times as old as Shyam but 20 years later from now he will be only twice as old as Shyam. How many years old is Shyam?	<b>Q12.</b> What is the remainder obtained when 1421 x 1423 x 1425 is divided by 122	(a) 1215 (b) 1350 (c)1500 (d) 1650				
<b>Q13.</b> What is the HCF of $(x^2 + bx - x - b)$ and $[x^2 + x (a - 1) - a]$ ? (a) $x + b$ (b) $x + a$ (c) $x + 1$ (d) $x - 1$ <b>Q14.</b> Consider those number between 300 and 400 such that when each number is divided by 6, 9 and 12 it leaves 4 as remainder in each case	(a) 1 (b) 2 (c) 3 (d) 4	<b>Q22.</b> x varies inversely as the square of y in such a way that, if $x = 1$ , then $y = 6$ . If $y = 3$ , then what				
(a) $x + b$ (b) $x + a$ (c) $x + 1$ (d) $x - 1$ Q23. 10 years ago, Ram was 5 times as old as Shyam but 20 years later from now he will be only twice as old as Shyam. How many years old is Shyam?	<b>Q13.</b> What is the HCF of $(x^2 + bx - x - b)$ and $[x^2 + x (a - 1) - a]$ ?	is the value of x? (a) $1/3$ (b) $\frac{1}{2}$ (c) 2 (d) 4				
<b>Q14.</b> Consider those number between 300 and 400 such that when each number is divided by 6, 9 and 12 it leaves 4 as remainder in each case	(a) $x + b'(b) x + a$ (c) $x + 1$ (d) $x - 1$	<b>023.</b> 10 years ago Ram was 5 times as old as				
400 such that when each number is divided by 6, 9 and 12, it leaves 4 as remainder in each case is Shyam?	<b>Q14.</b> Consider those number between 300 and	Shyam but 20 years later from now he will be				
	400 such that when each number is divided by 6, 9 and 12, it leaves 4 as remainder in each case	only twice as old as Shyam. How many years old is Shyam?				

400 such that when each number is divided by 6, 9 and 12, it leaves 4 as remainder in each case. What is the sum of the numbers?

### **Mathematics**

(a) 20 years (b) 30 years (c) 40 years (d) 50 years

**Q24.** Three numbers are in the ratio 3: 2: 5 and the sum of their squares is 1862. What are the three numbers?

(a) 18, 12, 30 (b) 24, 16, 40 (c) 15, 10, 25 (d) 21, 14, 35

**Q25.** If x: y = 7: 5, then what is the value of (5x - 2y): (3x + 2y)? (a) 5/4 (b) 6/5 (c) 25/31 (d) 31/42

**Q26.** A milkman claims to sell milk at its cost price only, but he is making a profit of 20% since he has mixed some amount of water in the milk. What is the percentage of milk in the mixture? (a) 80% (b) 250/3% (c) 75% (d) 200/3%

**Q27.** Out of 250 observations, the first 100 observations have mean 5 and the average of the remaining 150 observations is 253. What is the average of the whole group of observations? (a) 6 (b) 7 (c) 8 (d) 9

**Q28.** The compound interest on a sum for 2 years is Rs 832 and the simple interest on the same sum at the same rate for the same period is Rs 800. What is the rate of interest? (a) 6% (b) 8% (c) 10% (d) 12%

**Q29.** What is the compound interest on Rs 1600 at 25% per annum of 2 years compounded annually? (a) Rs 700 (b) Rs 750 (c) Rs 800 (d) Rs 900

**Q30.** A man buys 4 tables and 5 chairs for Rs 1000. If he sells the tables at 10% profit and chairs 20% profit, he earns a profit of Rs 120. What is the cost of one table? (a) Rs 200 (b) Rs 220 (c) Rs 240 (d) Rs 260

**Q31.** One saree was purchased for Rs 564 after getting a discount of 6% and another saree was purchased for Rs 396 after getting a discount of 1%. Taking both the items as a single transaction, what is the percentage of discount? (a) 3.5 (b) 4 (c) 7 (d) 7.5

**Q32.** A cloth store is offering buy 3, get 1 free. What is the net percentage discount being offered by the store? (a) 20% (b) 25% (c) 30% (d) 100/3%

**Q33.** A train crosses a telegraph post in 8s and a bridge 200 m long in 24 s. What is the length of the train? (a) 100 m (b) 120 m (c) 140 m (d) 160 m

**Q34.** Two trains of lengths 100 m and 150 m are travelling in opposite directions at speeds of 75 km/h and 50 km/h, respectively. What is the time taken by them to cross each other? (a) 7.4 s (b) 7.2 s (c) 7 s (d) 6.8 s **Q35.** A person travels a certain distance at 3 km/h and reaches 15 min late. If he travels at 4 km/h, he reaches 15 min earlier. The distance he has to travel is

(a) 4.5 km (b) 6 km (c) 7.2 km (d) 12 km

**Q36.** A car travels the first one-third of a certain distance with a speed of 10 km/hr, the next one-third distance with a speed of 20 km/hr and the last one-third distance with a speed of 60 km/hr. The average speed of the car for the whole journey is

(a) 18 km/hr (b) 24 km/hr (c) 30 km/hr (d) 36 km/hr

**Q37.** Ram can do a piece of work in 6 days and Shyam can finish the same work in 12 days. How much work will be finished, if both work together for 2 days?

(a) One-fourth of the work(b) One-third of the work(c) Half of the work(d) Whole of the work

**Q38.** Four taps can individually fill a cistern of water in 1h, 2h, 3h and 6h, respectively. If all the four taps are opened simultaneously, the cistern can be filled in how many minutes? (a) 20 (b) 30 (c) 35 (d) 40

**Q39.** 18 men can earn Rs 360 in 5 days. How much money will 15 men earn in 9 days? (a) Rs 600 (b) Rs 540 (c) Rs 480 (d) Rs 360

**Q40.** A and B can do a piece of work in 10 h. B and C can do it in 15 h, while A and C take 12 h to complete the work. B independently can complete the work in (a) 12h (b) 16h (c) 20h (d) 24h

**Q41.** If (x + y + z = 0), then what is (x + y) (y + z)(z + x) equal to? (a) -xyz (b)  $x^2 + y^2 + z^3$ (c)  $x^3 + y^3 + z^3 + 3xyz$ (d) xyz

**Q42.** If  $x^2 - 11x + a$  and  $x^2 - 14x + 2a$  have a common factor, then what are the values of a? (a) 0, 7 (b) 5, 20 (c) 0, 24 (d) 1, 3

**Q43.** Which one of the following statements is correct?

(a) Remainder theorem is a special case of factor theorem

(b) Factor theorem is a special case of remainder theorem

(c) Factor theorem and remainder theorem are two independent results(d) None of the above

**Q44.** What is the remainder when  $(x^{11} + 1)$  is divided by (x + 1)? (a) 0 (b) 2 (c) 11 (d) 12

Mathematics **Q45.** If the expression  $x^3 + 3x^2 + 4x + k$  has a If  $sin(x + 54^{\circ}) = cos x$ , where 0 < x,  $x + 54^{\circ} < 90^{\circ}$ , factor then what is the value of x? x + 5, then what is the value of k? (a) 54° (b) 36° (c) 27° (d) 18° (a) -70 (b) 70 (c) 48 (d) -48 Q52. **Q46.** If  $(49)^2 - (25)^2 = 37x$ , then what is x equal If  $\tan^2 y \csc^2 x - 1 = \tan^2 y$ , then which one of the to? following is correct? (a) 64 (b) 74 (c) 48 (d) 42 (a) x - y = 0 (b) x = 2y (c) y = 2x (d)  $x - y = 1^{\circ}$ **Q47.** If a set A contains 60 elements and another Q53. set B contains 70 elements and there are 50 If  $x + \left(\frac{1}{x}\right) = 2 \cos \alpha$ , then what is the value of elements in common, then how many elements does A U B contain? (a) 130 (b) 100 (c) 80 (d) 70  $\mathbf{x}^2 + \left(\frac{1}{\mathbf{x}^2}\right)?$ Q48. If  $\theta \in \mathbb{R}$  be such that  $\sec \theta > 0$  and  $2 \sec^2 \theta + \sec \theta -$ (a)  $4 \cos^2 a$ (b)  $4 \cos^2 a - 1$ 6 = 0. Then, what is the value of cosec  $\theta$ ? (c)  $2\cos^2 a - 2\sin^2 a$  (d)  $\cos^2 a - \sin^2 a$ (a) Q54.  $\sqrt{5}$ If  $\cot \theta = \frac{2xy}{x^2 - y^2}$ , then what is  $\cos \theta$  equal to? (b) Тí. (a) √3  $x^2 - y^2$ 2 (c) $\frac{x^2 + y^2}{x^2 - y^2}$ (d) (c)2xy  $x^{2} + y^{2}$ Q49. If  $2x^2 \cos 60^\circ - 4 \cot^2 45^\circ - 2 \tan 60^\circ = 0$ , then what is (d) the value of x? 2xy (a) 2  $\sqrt{x^2 + y^2}$ (b) 3 (c) 055.  $\sqrt{3} - 1$ In a  $\triangle ABC$ ,  $\angle ABC = 90^\circ$ ,  $\angle ACB = 30^\circ$ , AB = 5 cm. (d) What is the length of AC?  $\sqrt{3}+1$ (a) 10 cm (b) 5 cm **Q50.** Which one of the following is correct? (c) (a)  $\tan x > 1$ ,  $45^{\circ} < 90^{\circ}$  $5\sqrt{2}$  cm (d)  $\sin x > \frac{1}{2}, \ 0^{\circ} < x < 30^{\circ}$  $5\sqrt{3}$  cm (c) **Q56.** Two sides of an acute angle triangle are 6  $\cos x > \frac{1}{2}, \ 60^{\circ} < x < 90^{\circ}$ cm and 2 cm, respectively. Which one of the following represents the correct range of the third (d) sin x = cos x for some value of x,  $30^{\circ}$  < x <  $45^{\circ}$ side in cm? (a) (4,8) Q51.

Mathematics					
(b)	(c) Both I and II (d) Neither I nor II				
$(4, 2\sqrt{10})$ (c)	<b>Q65.</b> The area of an isosceles triangle ABC with $AB = AC$ and altitude $AD = 3$ cm is 12 sq cm.				
$(4\sqrt{2}, 8)$	what is its perimeter? (a) 18 cm (b) 16 m (c) 14 cm (d) 12 cm				
$\left(4\sqrt{2}, 2\sqrt{10}\right)$	<b>Q66.</b> Consider an equilateral triangle of a side of unit length. A new equilateral triangle is formed by joining the mid-points of one, then a third				
<b>Q57.</b> A unit radian is approximately equal to (a) 57° 17' 43" (b) 57° 16' 22" (c) 57° 17' 47" (d) 57° 17' 49	equilateral triangle is formed by joining the mid- points of second. The process is continued. The perimeter of all triangles, thus formed is (a) 2 units (b) 3 units (c) 6 units (d) Infinity				
<b>Q58.</b> Consider the following statements: I. There is only one value of x in the first quadrant that satisfies $six + cos x = 2$ . II. There is only one value of x in the first quadrant that satisfies $sin x - cos x = 0$ . Which of the statements above is/are correct? (a) Only I (b) Only II (c) Both I and II (d) Neither I nor II	<ul> <li>Q67. The total surface area of a cone, whose generator is equal to the radius R of its base, is S. If A is the area of a circle of radius 2R, then which one of the following is correct?</li> <li>(a) A = S (b) A = 2S (c) A = S/2 (d) A = 4S</li> <li>Q68. If the number of square centimetres on the surface area of a sphere is three times the</li> </ul>				
<b>Q59.</b> A round balloon of unit radius subtends an angle of $90^{\circ}$ at the eye of an observer standing at a point, say A.	number of cubic centimetres in its volume, then what is its diameter? (a) 1 cm (b) 2 cm (c) 3 cm (d) 6 cm				
from the point A? (a) $1/2$ (b) $\sqrt{2}$ (c) 2 (d) $1/2$	<b>Q69.</b> A solid metallic cube of edge 4 cm is melted and recast into solid cubes of edge 1 cm. If x is the surface area of the melted cube and y is the total surface area of all the cubes recast, then				
<b>Q60.</b> Two poles of heights 6 m and 11 m stand vertically upright on a plane ground. If the distance between their feet is 12 m, what is the	what is x: y? (a) 2: 1 (b) 1: 2 (c) 1: 4 (d) 4: 1				
distance between their tops? (a) 11 m (b) 12 m (c) 13 m (d) 14 m	<b>Q70.</b> If a sphere of radius 10 cm is intersected by a plane at a distance 8 cm from its centre, what is the radius of the curve of intersection of the				
<b>Q61.</b> From a rectangular sheet of cardboard of size 5 cm × 2 cm, the greatest possible circle is	plane and the sphere? (a) 8 cm (b) 6 cm (c) 5 cm (d) 4 cm				
cut-off. What is the area of the remaining part? (a) $(25 - p) \text{ cm}^2$ (b) $(10 - p) \text{ cm}^2$ (c) $(4 - p) \text{ cm}^2$ (d) $(10 - 2p) \text{ cm}^2$	<b>Q71.</b> A hemispherical bowl of internal radius 20 cm contains sauce. The sauce is to be filled in conical shaped bottles of radius 5 cm and height				
<b>Q62.</b> What is the radius of the circle inscribed in a triangle having side lengths 35 cm, 44 cm and 75 cm?	8 cm. What is the number of bottles required? (a) 100 (b) 90 (c) 80 (d) 75				
(a) $3 \text{ cm}$ (b) $4 \text{ cm}$ (c) $5 \text{ cm}$ (d) $6 \text{ cm}$	<b>Q72.</b> A figure is formed by revolving a rectangular sheet of dimensions 7 cm × 4 cm				
<b>Q63.</b> If the area of a DABC is equal to area of square of side length 6 cm, then what is the length of the altitude of AB, where AB = 9 cm? (a) 18 cm (b) 14 cm (c) 12 cm (d) 8 cm	about its length. What is the volume of the figure, thus formed? (a) 352 cu cm (b) 296 cu cm (c) 176 cu cm (d) 616 cu cm				
<b>Q64.</b> Consider the following statements I. Area of a segment of a circle is less than area of its corresponding sector. II. Distance travelled by a circular wheel of diameter 2d cm in one revolution is greater	<b>Q73.</b> The material of a solid cone is converted into the shape of a solid cylinder of equal radius. If the height of the cylinder is 5 cm, what is the height of the cone? (a) 15 cm (b) 20 cm (c) 25 cm (d) 30 cm				

of diameter 2d cm in one revolution is greater than 6d cm.

Which of the above statements is/are correct? (a) Only I (b) Only II

**Q74.** What will be the cost to plaster the inner surface of a well 14 m deep and 4 m in diameter at the rate of Rs 25 per sq m?

## Mathematics

(a) Rs 4000 (b) Rs 4200 (c) Rs 4400 (d) Rs 5400 **Q75.** A right circular metal cone (solid) is 8 cm high and the radius is 2 cm. It is melted and recast into a sphere. What is the radius of the sphere? (a) 2 cm (b) 3 cm (c) 4 cm (d) 5 cm **Q76.** The height of a cylinder is 15 cm. The lateral surface area is 660 sq cm. Its volume is (a) 1155 cu cm (b) 1215 cu cm (c) 1230 cu cm (d) 2310 cu cm **Q77.** What is the whole surface area of a cone of base radius 7 cm and height 24 cm? (a) 654 sq cm (b) 704 sq cm (c) 724 sq cm (d) 964 sq cm **Q78.** What is the volume of the double cone so formed? (a) 3124 cm3 (b) 3424 cm3 (c) 3768 cm3 (d) 3924 cm3 **Q79.** The radius of a sphere is equal to the radius of the base of a right circular cone, and the volume of the sphere is double the volume of the cone. The ratio of the height of the cone to the radius of its base is (a) 2: 1 (b) 1: 2 (c) 2: 3 (d) 3: 2 **Q80.** Consider the following statements Two lines intersected by a transversal are parallel, if I. the pairs of corresponding angles are equal. II. the interior angles on the same side of the transversal are supplementary. Which of the

statements given above is/are correct? (a) Only I (b) Only II (c) Both I and II (d) Neither I nor II

#### Q81. Consider the following statements

I. The locus of points which are equidistant from two parallel lines is a line parallel to both of them and drawn mid way between them

II. The perpendicular distances of any point on this locus line from two original parallel lines are equal. Further, no point outside this locus line has this property.

Which of the above statements is/are correct? (a) Only I (b) Only II (c) Both I and II (d) Neither I nor II

**Q82.** Consider the following statements A triangle can be constructed if its I. two sides and the included angles are given. II. three angles are given. III. two angles and the included side are given. Which of the statements given above are correct ?

(a) I and II (b) I and III (c) II and III (d) All of these

#### Q83. Consider the following statements

I. Congruent triangles are similar.

II. Similar triangles are congruent.

#### III. If the hypotenuse and a side of one right

triangle are equal to the hypotenuse and a side of another right triangle respectively, then the two right triangles are congruent.

# Which of the statement given above is/are correct?

a)	Only	Ι			
c)	Both	Π	and	III	

(b) Only I (d) Both I and III

**Q84.** Which one among the following is not correct?

(a) Two congruent triangles are necessarily similar

(b) All equiangular triangles are similar

(c) Two isosceles right triangles are similar

(d) All isosceles triangles are similar

**Q85.** Consider the following statements I. The perpendicular bisector of a chord of a circle does not pass through the centre of the circle. II. The angle in a semi-circle is a right angle. Which of the statements given above is/are correct?

(a) Only I (b) Only II (c) Both I and II (d) Neither I nor II

**Q86.** In a cricket match, the first 5 batsmen of a team scored runs: 30, 40, 50, 30 and 40. If these data represent a four sided figure with 50 as its one of the diagonals, then what does second diagonal represent? (a) 30 runs (b) 40 runs (c) 50 runs (d) 70 runs

**Q87.** If two parallel lines are cut by two distinct transversals, then the quadrilateral formed by the four lines is always a

(a) square (b) parallelogram

(c) rhombus (d) trapezium

**Q88.** How many equilateral triangles can be formed by joining any three vertices of a cube? (a) 0 (b) 4 (c) 8 (d) None of these

Q89



In the figure given above, C and D are points on the semicircle described on AB as diameter. If  $\angle ABD = 75^{\circ}$  and  $\angle DAC = 35^{\circ}$ , then what is the  $\angle BDC$ ?

(a)  $130^{\circ}$  (b)  $110^{\circ}$  (c)  $90^{\circ}$  (d)  $100^{\circ}$ 

**Q90.** What is the number of tangents that can be drawn to a circle from a point on the circle? (a) 0 (b) 1 (c) 2 (d) 3

**Q91**.

## Mathematics



In the figure given above, AD is a straight line, OP perpendicular to AD and O is the centre of both circles. If OA = 20 cm, OB = 15 cm and OP = 12 cm, then what is AB equal to ?

(a) 7 cm (b) 8 cm (c) 10 cm (d) 12 cm

#### Q92.



In the figure given above, If AP = 3 cm, PB = 5 cm, AQ = 2 cm and QC = x, then what is the value of x?

(a) 6 cm

(b) 8 cm

(c) 10 cm

(d) 12 cm

**Q93.** ABCD is a quadrilateral, the sides of which touch a circle. Which one of the following is correct? (a) AB + AD = CB + CD(b) AB: CD = AD: BC (c) AB + CD = AD + BC

(d) AB: AD = CB: CD

**Q94.** ABC is an equilateral triangle inscribed in a circle with AB = 5 cm. Let the bisector of the angle A meet BC in X and the circle in Y. What is the value of AX. AY? (a)  $16 \text{ cm}^2$ 

(b)  $20 \text{ cm}^2$ 

- (c)  $25 \text{ cm}^2$
- (d)  $30 \text{ cm}^2$

**Q95.** The locus of the mid-points of all equal chords in a circle is

(a) The circumference of the circle concentric with the given circle and having radius equal to the length of the chords.

(b) The circumference of the circle concentric with the given circle and having radius equal to the distance of the chords from the centre. (c) The circumference of the circle concentric with the given circle and having radius equal to half of

the radius of the given circle. (d) The circumference of the circle concentric

with the given circle and having radius equal to half of the distance of the chords from the centre. **Q96.** If the angle between the radii of a circle is 130°, then the angle between the tangents at the ends of the radii is

(a) 90°

- (b) 70°
- (c) 50°
- (d) 40°

**Q97.** Which one of the following statements is not correct with reference to a histogram? (a) Frequency curve is obtained by joining the mid

points of the top of the adjacent rectangles with smooth curves

(b) Histogram is drawn for continuous data (c) The height of the bar is proportional to the frequency of that class

(d) Mode of the distribution can be obtained from the histogram

**Q98.** Consider the following pairs of numbers:

I. (8, 12) II. (9, 11) III. (6, 24) Which pairs of number have the same harmonic means? (a) I and II (b) II and III (c) I and III

(d) I, II and III

**Q99.** The arithmetic mean of 100 numbers was computed as 89.05. It was later found that two numbers 92 and 83 have been misread as 192 and 33, respectively. What is the correct arithmetic mean of the numbers?

(a) 88.55

- (b) 87.55
- (c) 89.55
- (d) Cannot be determined

**Q100.** Which one of the following relations for the numbers 10, 7, 8, 5, 6, 8, 5, 8 and 6 is correct? (a) Mean = Median

(b) Mean = Mode

- (c) Mean > Median
- (d) Mean > Mode