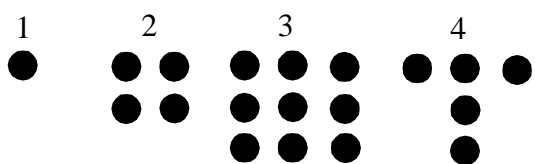


Q. 1 Half of the class 2 students like cricket, half of the remaining like football and the remaining 8 students like tennis. How many students are there in class 2?
 (1) 16 (2) 24 (3) 32 (4) 40

Q. 2. If yesterday was Wednesday, what will be day after tomorrow ?
 (1) Thursday (2) Friday (3) Sunday (4) Saturday

Q. 3. Jerry has 4 pencils. They are coloured red, yellow, green and blue. The red pencil is longer than the yellow pencil but is shorter than the blue pencil. The green pencil is longer than the yellow pencil, but shorter than the red pencil. If Jerry gives you the shortest of the pencils he has, what colour is the pencil you will have?
 (1) Blue (2) Green (3) Yellow (4) Red

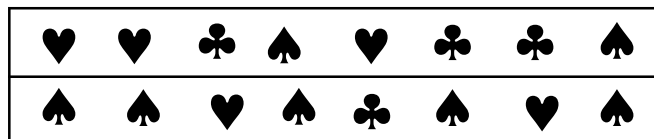
Q. 4. Observe the following pattern. How many circles you must draw in the 4th group to complete the pattern ?
 (1) 16 (2) 11
 (3) 12 (4) 9

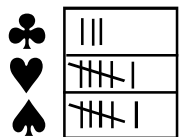
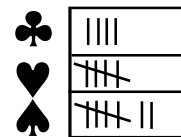
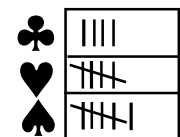
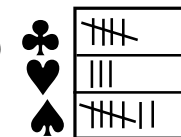


Q. 5. Jack is writing the numbers from 1 to 78. If you were to guess the number of times he writes the digit 7, what would be your correct guess?
 (1) 17 (2) 15 (3) 13 (4) 11

Q. 6. Sachin has an equal number of coins of 50 paise and 25 paise. Which of the following could be the amount with him ?
 (1) Rs. 2 and 75 paise (2) Rs. 5 and 75 paise
 (3) Rs. 3 and 75 paise (4) Rs. 4 and 75 paise


Q. 7. In which of the charts given below the correct number of the shapes in the picture is represented?



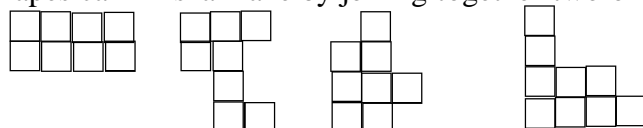
(1)  (2)  (3)  (4) 

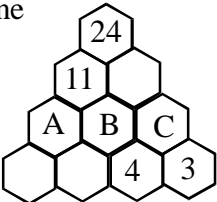
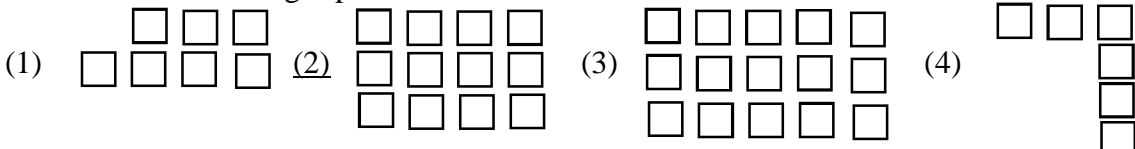
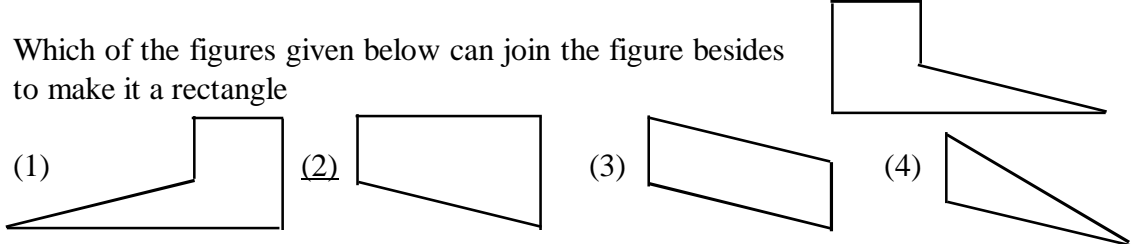
Q. 8. What digit would be in the place of ♠ in the multiplication of the two numbers given besides?
 (1) 5 (2) 6 (3) 8 (4) 9

$$\begin{array}{r} 274 \\ \times 3 \\ \hline \spadesuit \square \square \end{array}$$

Q. 9. Krishna has many tiles of the given shape  How many of the following shapes can Krishna make by joining together two of the given tiles

(1) 4 (2) 3
 (3) 2 (4) 1

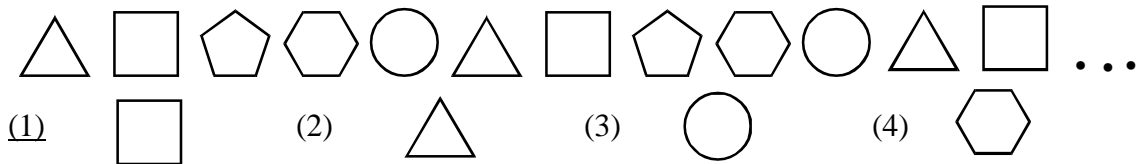


- Q. 10. In which of the following are the numbers in descending order?
 (1) 101, 95, 121, 85, 83 (2) 131, 111, 95, 85, 83
 (3) 141, 121, 131, 138, 99 (4) 151, 141, 121, 131, 111
- Q. 11. Sindhu practice badminton for 8 hours a day. What fraction of the day does she practice badminton?
 (1) $\frac{8}{12}$ (2) $\frac{16}{24}$ (3) $\frac{2}{3}$ (4) $\frac{1}{3}$
- Q. 12. When the hour hand on a clock turns clockwise 1 full round, then how much time has passed ?
 (1) 1 hour (2) Half an hour (3) 12 hours (4) 24 hours
- Q. 13. Sindhu, Batra and Sania each play any 1 of these games : Badminton , Table Tennis and Tennis. Sindhu does not play Badminton or Table Tennis. Sania does not play Badminton. Then which game does Batra play?
 (1) Table Tennis (2) Badminton (3) Tennis (4) None of these
- Q. 14. Anita has 30 coins in her purse as follows: 5 coins of 50 P, 7 coins of 25 P and an equal number of 20 P and 10 P coins. How much money does she have in her purse.
 (1) Rs. 5 & 35 P (2) Rs. 6 & 95 P (3) Rs. 7 & 25 P (4) Rs. 8 & 75 P
- Q. 15. A palendromic number is a number that remains the same when its digits are reversed. For example : 151. How many two digit palindromic numbers are there in all
 (1) 11 (2) 7 (3) 9 (4) None
- Q. 16. Each number is the total of the two numbers below it. Complete the tree and find the number at B.
 (1) 5 (2) 8
 (3) 13 (4) 6
- 
- Q. 17. Which of the following represents 3×4 ?
- 
- Q. 18. A rope 1 metre long is cut into 4 equal pieces. What is the length of one piece of the rope?
 (1) 200 mm (2) 25 mm (3) 25 cm (4) 40 cm
- Q. 19. Which of the figures given below can join the figure besides to make it a rectangle
- 
- Q. 20. The teacher asks the students to write a number for the following:
 15 Hundreds + 27 tens and 12 ones. What is the number you would answer
 (1) 152712 (2) 150027012 (3) 1782 (4) 17820

- Q. 21. On a Sunday morning Mr. Green decides to clean up his garden. He starts cleaning his garden at half past nine in the morning and completes the cleaning by quarter past twelve. How much time it took Mr. Green to complete the cleaning of the garden?
 (1) 2 hrs. 45 min. (2) 1 hrs. 45 min. (3) 2 hrs. 30 min. (4) 3 hrs.

- Q. 22. Find the number between 1 and 9 such that, it is not smaller than 5, it is an even number and when you take away 4 from it the result is larger than 3.
 (1) 4 (2) 6 (3) 8 (4) 7

- Q. 23. Observe the following shapes in the series given below and find out which shape would be there in the 37th place?



- Q. 24. If your mother takes 45 minutes to prepare lunch for the family, what fraction of an hour does she take to prepare the lunch?
 (1) $\frac{1}{3}$ (2) $\frac{3}{4}$ (3) $\frac{1}{4}$ (4) $\frac{4}{5}$

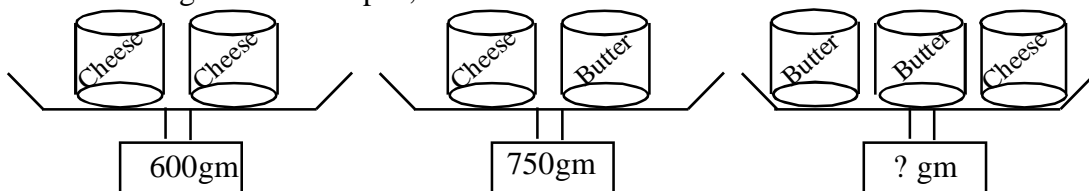
- Q. 25. Write the numbers 1, 2, 4, 6, 7, & 8 in the correct place in the square so that each side of the square adds to 12.

What number would the letter A represent?

- (1) 8 (2) 7 (3) 2 (4) 4

	5	
A		
		3

- Q. 26. The weights of the cheese and butter tins are shown in the following weighing scales. Find the weight of the 3rd pan,



- (1) 1200 gm (2) 1400 gm (3) 1050 gm (4) 1350 gm
- Q. 27. In a small packet there are 6 cookies. How many packets would you buy if 12 friends are to be served with 3 cookies each at a tea party?
 (1) 5 (2) 4 (3) 6 (4) 3

- Q. 28. Rahul's father gives him 50 P everyday and his mother gives him 25 P every day. In 10 days Rahul will have how much money?

- (1) Rs. 5 and 75 P (2) Rs. 6 and 50 P (3) Rs. 7 and 75 P (4) Rs. 7 and 50 P

- Q. 29. The capacity of the tank of a motorcycle is 15 litres and that of a car is 55 litres. On a Sunday Mr. Jacob gets both his vehicles completely filled by petrol. He notices that 37 litres of petrol filled the two tanks completely. How much petrol was there in the two tanks before going to the petrol pump?

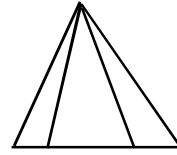
- (1) 31 (2) 27 (3) 33 (4) 43

Q. 30. Which of the following set of coins make Rs. 8 and 75 P?

- (1) Rs. 5 + Rs.2 + 50 P + 25 P (2) Rs. 5 + Rs. 1 + Four 50 P + Three 25 P
 (3) Rs. 5 + Rs. 2 + 50 P + Three 25 P (4) Rs. 5 + Rs. 2 + Two 50 P + 25 P

Q. 31. How many triangles are there in the figure given besides:

- (1) 4 (2) 5 (3) 6 (4) 8



Q. 32. In the following figure, what is the least number of boxes you will shade so that the whole figure will be shaded more than half ?

- (1) 1 (2) 3 (3) 2 (4) 4



Q. 33. The mirror image of the following $\begin{array}{l} \diagup \\ \diagdown \end{array} \begin{array}{l} \diagdown \\ \diagup \end{array}$ will be ?

- (1) $\begin{array}{l} \diagdown \\ \diagup \end{array} \begin{array}{l} \diagup \\ \diagdown \end{array}$ (2) $\begin{array}{l} \diagdown \\ \diagup \end{array} \begin{array}{l} \diagdown \\ \diagup \end{array}$ (3) $\begin{array}{l} \diagdown \\ \diagup \end{array} \begin{array}{l} \diagup \\ \diagdown \end{array}$ (4) $\begin{array}{l} \diagup \\ \diagdown \end{array} \begin{array}{l} \diagdown \\ \diagup \end{array}$

Q. 34. Each number in the number track is made by adding the previous 2 numbers together

Example

4	5	9	14	23
---	---	---	----	----

 Complete the given number track and find the total of

A + B + E in the number track

A	B	12	19	E
---	---	----	----	---

- (1) 43 (2) 50 (3) 47 (4) 31

Q. 35. In the month of February 2020 which of the following days appeared 5 times . It is given that 14th February 2020 was on Friday.

- (1) Monday (2) Friday (3) Sunday (4) Saturday

Q. 36. The digit 3 is in the hundreds place of which number ?

- (1) 3456 (2) 4536 (3) 5364 (3) 6543

The chart given besides shows the number of Flamingos migrated to India from Monday to Friday Study the chart and answer the Q. 37 to Q.39

Mon	→ → → → → →
Tue	→ → →
Wed	→ →
Thu	→ → → →
Fri	→ → → → →

Q. 37. How many Flamingos migrated on Monday?

- (1) 6 (2) 30
 (3) 20 (4) 25

→ = 5 Flamingos

Q. 38. On which day did the Flamingos migrate the least?

- (1) Monday (2) Thursday (3) Friday (4) Wednesday

Q. 39. What was the total number of Flamingos migrated from Monday to Friday?

- (1) 100 (2) 80 (3) 150 (4) 120

Q. 40 Harry has 6 toy cars. Three of his friends have 5 toy cars each and two friends have only 2 toy cars each. All of them meet one evening with all the cars they have.

How many cars were there altogether?

- (1) 23 (2) 25 (3) 27 (4) 31



- Q. 1. The sum of the ages of father, mother and son in the year 2020 was 79 years. In which year will the sum of their ages be 100?
(1) 2041 (2) 2030 (3) 2027 (4) 2037
- Q. 2. What is the result of : $\frac{11}{15} + \frac{3}{15} - \frac{7}{15} + \frac{8}{15}$
(1) 1 (2) 0 (3) $\frac{8}{15}$ (4) $\frac{1}{15}$
- Q. 3. On the 15th August sale at Big Bazar an offer on Parle-G Biscuit costing Rs. 10 was, buy 5 and get 2 free. If you have Rs.100, how many packets of Parle-G would you get?
(1) 7 (2) 10 (3) 12 (4) 14
- Q. 4. In a class there are 30 to 50 students. If the students are grouped by 4 in a group then 2 students remain. If grouped by 5, then 1 student remain. How many students are there in the class?
(1) 32 (2) 44 (3) 46 (4) 37
- Q. 5. Which of the following can be the measures of the two angles of an isosceles triangle?
(1) 25° , 125° (2) 50° , 60° (3) 110° , 35° (4) 90° , 55°
- Q. 6. A container contains 12 litre 325 millilitre of oil. If 7 litre 775 millilitre is used for frying potato-chips, how much oil remains in the container?
(1) 4 litre 55 millilitre (2) 5 litre 550 millilitre
(3) 4 litre 450 millilitre (4) 4 litre 550 millilitre
- Q. 7. When asked, how many pencils do you have? Kia replied (a) It is between 20 and 40 (b) I have an odd number of pencils (c) The sum of the digits of the number of pencils I have is 10. Find out the number of pencils Kia have?
(1) 19 (2) 27 (3) 37 (4) 28
- Q. 8. Which of the following represents the number of minutes in half a day?
(1) 12×50 (2) 24×30 (3) 12×30 (4) 24×50
- Q. 9. A shopkeeper has 15 kg 750 grams of sugar. He sold 7 kg 350 grams to the first customer and 5 kg 475 grams to the second customer, How much sugar does the shopkeeper has now?
(1) 3 kg 825 gm (2) 2 kg 925 gm (3) 3 kg 925gm (4) 2 kg 875 gm
- Q. 10. On which date is the 150th day of the year 2020 ?
(1) 31 April (2) 15 May (3) 1 June (4) 29 May
- Q. 11. Anil spent Rs. 20 on Rs.1 and Rs.2 envelopes. He bought three times as many Rs.1 envelopes as Rs.2 envelopes. How many envelopes of Rs. 1 did he buy ?
(1) 12 (2) 8 (3) 10 (4) 15

- Q. 12. The sum of the lengths of two pencils in Nitin's compass box is 15 cm. The longer pencil is 3 cm more in length than the shorter pencil. What is the length of the shorter pencil?
(1) 9 cm (2) 12 cm (3) 6 cm (4) 7 cm
- Q. 13. Mr. Joshi likes to collect ball point pens and fountain pens. He has in all 50 pens. If he has 36 more fountain pens than the ball point pens. How many fountain pens does he have?
(1) 40 (2) 43 (3) 14 (4) 36
- Q. 14. Suzie has 120 rose flowers. She is making bouquets for a birthday party. If she decides to have three rose flowers in a bouquet, how many bouquets will have 3 rose flowers in them?
(1) 15 (2) 25 (3) 40 (4) 18
- Q. 15. A milk can whose capacity is 20 litres has 16 litres 85 millilitres of milk in it. How much more milk can be poured into it?
(1) 4 litre 15 millilitre (2) 3 litre 915 millilitre
(3) 4 litre 150 millilitre (4) 3 litre 15 millilitre
- Q. 16. A shopkeeper wraps a gift in 15 seconds. How many gifts will he wrap in 5 minutes?
(1) 75 (2) 4 (3) 20 (4) 24
- Q. 17. Mr. James leaves India on 1st. January 2020. He returned after 12 weeks. For how many days was he abroad?
(1) 96 (2) 84 (3) 94 (4) 72
- Q. 18. Mrs. Anita offers two options of payments for her online math classes. You can pay Rs.45 per month or Rs.500 per year. How many rupees will you save by choosing the cheaper plan for one year of online math classes?
(1) Rs. 45 (2) Rs. 90 (3) Rs. 50 (4) Rs. 40
- Q.19. Which of the following Roman Numeral is correct according to the rule ?
(1) VXX (2) XVV (3) XIV (4) All are correct
- Q. 20. Wheat flour is used for making pizza bases. If one pizza base weighs 175 gm. how much wheat flour will be required to make 15 pizza bases?
(1) 2 kg 625 gm (2) 1 kg 895 gm
(3) 2 kg 500 gm (4) 2 kg 225 gm
- Q. 21. Krish wants to buy a toy which costs Rs.30. He saves Rs.2 and 50 paise every week. After how many weeks will he be able to buy the toy?
(1) 10 (2) 8 (3) 15 (4) 12

- Q. 22. A complete round around a circular cycle track is 250 meters. A boy cycles 8 rounds around it. How much distance did he cycle?
(1) 4 km (2) 3 km 500 m (3) 6 km (4) 2 km
- Q. 23. Your mother decides to give you a total of Rs. 100 in 5 days. Each day she gives Rs. 5 more than the previous day. What amount did you receive on the first day?
(1) Rs. 10 (2) Rs. 16 (3) Rs.5 (4) Rs.15
- Q. 24. When the given fractions are arranged in the ascending order of their values, which fraction would be in the middle ?
(1) $\frac{13}{17}$ (2) $\frac{8}{17}$ (3) $\frac{11}{17}$ (4) $\frac{19}{17}$
- Q. 25. 72 pencils were put in boxes. If one box can hold only 8 pencils, how many boxes will be required?
(1) 6 (2) 8 (3) 12 (4) 9
- Q. 26. A family buys 1litre 250 millilitre of milk every day for the pets they have. How much milk is bought in a week for the pets?
(1) 9 litres (2) 8 litres 750 millilitre
(3) 8 litres 250 millilitre (4) 9 litres 250 millilitre
- Q. 27. Using the digits: 3, 8, 1, 7, 2 & 4, each only once form the smallest 6-digit odd number.
(1) 123478 (2) 213487 (3) 324781 (4) 123487
- Q. 28. The time now is 11: 45 a.m. What will the time be after 185 minutes?
(1) 2 : 50 p.m (2) 1 : 50 p.m (3) 3 : 00 p.m (4) 2 : 25 p.m
- Q. 29. Length can be best described as which of the following?
(1) a foot (2) a measurement (3) meter (4) a unit of measurement
- Q. 30. The birthdays of three friends are, Rakesh - March 8, 2005, Satish - April 17, 2003 and Shyam - October 25, 2009. Which of the following lists the friends names in order from oldest to youngest?
(1) Shyam, Satish & Rakesh (2) Shyam, Rakesh & Satish
(3) Satish, Rakesh & Shyam (4) Satish, Shyam & Rakesh
- Q. 31. The twins collected some stamps. They each had the same total number of stamps. Krina pasted stamps on 3 full sheets and had 4 loose stamps
Krisha pasted stamps on 2 full sheets and had 12 loose stamps.
Each full sheet had the same number of stamps. How many stamps were stuck on a full sheet?
(1) 6 (2) 8 (3) 10 (4) 12
- Q. 32. How many letters did the Romans use to express the numbers?
(1) 5 (2) 8 (3) 6 (4) 7

Q. 33. A pizza is cut into 12 equal pieces. If you eat 4 pieces of it, how much of the whole pizza have you eaten?

- (1) $\frac{1}{2}$ (2) $\frac{1}{3}$ (3) $\frac{1}{4}$ (4) $\frac{3}{4}$

Q. 34. Three coins of Rs.1, 5 coins of 50 Paise and 7 coins of 25 Paise equals to which of the following?

- (1) Rs.6 and 25 Paise (2) Rs.7 and 75 Paise
(3) Rs.7 and 25 Paise (4) Rs.8 and 50 Paise

Q. 35. A car covers a distance of 45 km in one hour. How many kilometers will it cover in 9 hours?

- (1) 405 km (2) 385 km (3) 415 km (4) 435 km

Q. 36. Which of the following about equilateral triangle is false?

- (1) All its sides measure the same.
(2) The sum of two angles of an equilateral triangle adds to 140° .
(3) All its angles measure 60° .
(4) An equilateral triangle is an acute-angled triangle.

Q. 37. How many two digit odd numbers are there in which one of the digits is half the other?

- (1) 1 (2) 4 (3) 2 (4) 7

Q. 38. How would you write 1586 in Roman Numeral?

- (1) XVLXXXVI (2) MDLXXXVI (3) DLXXXVI (4) MDCLXXXVI

Q. 39. The chart below shows the cost of the different motorcycles in Rupees.

If Hero Honda costs between the two costliest brands, then what would its cost be from among the following?

- (1) Rs. 79500 (2) Rs. 83500
(3) Rs. 84500 (4) Rs. 87700

Motorcycle	Price in Rs.
Bullet	Rs. 105000
Splendor	Rs. 83500
Pulsar	Rs. 85700
Passion	Rs. 73500

Q. 40. What is the difference between the prices of Bullet and Pulsar?

- (1) Rs.19300 (2) Rs.21500 (3) Rs.10000 (4) Rs.31500

Q. 1. There are 25 trays on a table in a cafeteria. Each tray contains a cup only, a plate only or both a cup and a plate. If 15 of the trays contain cups and 21 of the trays contain plates, how many trays contain both a cup and a plate ?

- (1) 4 (2) 11 (3) 15 (4) 6

Q. 2. If $\frac{1}{9} + \frac{1}{18} = \frac{1}{\square}$, then the number that replaces the \square to make the equation true is:

- (1) 6 (2) 18 (3) 27 (4) 9

Q. 3. Rahul is writing the numbers, 64, 81, 100, 121, Which of the following numbers would not be in his series of numbers ?

- (1) 169 (2) 176 (3) 225 (4) 289

Q. 4. What is the value of $\{(2 + 3) \times 5\} - (2 + 3 \times 5)$?

- (1) 1 (2) 10 (3) 0 (4) 8

Q.5. Find the value of 'x' in the equation $3x - 7 = 8 - 2x$

- (1) 15 (2) 1 (3) 3 (4) 5

Q. 6. From a point on a circle, how many diameters can be drawn

- (1) 1 (2) 4
(3) Many (4) Infinite

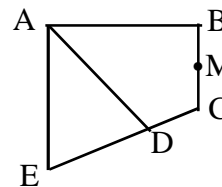


Q. 7. What is the product of the smallest prime number that is greater than 50 and the greatest prime number that is less than 50?

- (1) 2397 (2) 2597 (3) 2491 (4) 2499

Q. 8. By joining which two points of the following figure will you get 4 triangles ?

- (1) AC (2) BD
(3) AM (4) DM



Q. 9. The 17th day of a month is Saturday. The first day of that month was _____.

- (1) Friday (2) Thursday (3) Monday (4) Sunday

Q. 10. A teacher wrote a three digit odd number in her book and dared the class to guess the sum of its digits. She gave the following clues on the board, (a) The hundreds place digit is 8 more than the ones place digit (b) The tens place digit is 4 greater than the ones place digit.

- Can you guess the sum of the digits of the number the teacher wrote in her book
(1) 11 (2) 13 (3) 15 (4) 17

Q. 11. A five digit number 213ab, where 'a' and 'b' are digits, has a remainder less than 10 when divided by 100. The sum of all the digits in the above number is equal to 13. Find the digit 'b'.

- (1) 5 (2) 6 (3) 7 (4) 8

Q. 12. Express 8 hours 45 minutes as decimal fraction:

- (1) 8.45 hrs (2) 8.25hrs (3) 8.045 hrs (4) 8.75 hrs

Q. 13. In the magic square the sum of the numbers horizontally, Vertically and diagonally are the same. If you complete the given magic square, what number would B represent?

- (1) 10 (2) 11
(3) 9 (4) 6

B		3
	8	15
	5	A

Q. 14. Which of the following numbers is divisible by 9?

- (1) 5776 (2) 5446 (3) 6228 (4) 5969

Q. 15. A teacher writes the roll number of a student in her diary to report to the principal about the poor performance of the student in the recent math test. As the students were eager to know the roll number the teacher noted in her diary, the teacher gave them the following clues: (a) It is not a multiple of 3 (b) It is not a perfect square (c) the sum of its digit is a prime number.

Which of the following roll number did the teacher write in her diary?

- (1) 16 (2) 14 (3) 12 (4) 26

Q.16. Of the four square numbers given below, only one square number can be represented as the sum of two prime numbers in two different ways, Find that square number?

- (1) 4 (2) 9 (3) 16 (4) 25

Q. 17. The length of a rectangular mat is 2 feet more than its width. If the length of the mat is 8 feet, what is the area of the mat in square feet?

- (1) 16 (2) 48 (3) 66 (4) 96

Q. 18. If $a = 2b$ and $b = 3$, what is the value of $2a - b$?

- (1) 9 (2) 3 (3) 6 (4) 15

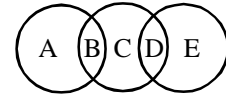
Q. 19. A five- digit number has 9 in the thousands place, 6 in the greatest place-value position, 1 in the tens place, 5 in the least place value position, and 7 in the hundreds place. What is the number?

- (1) 96715 (2) 69175 (3) 67915 (4) 69715

Q. 20. The H.C.F. of 24 and 72 is:

- (1) 6 (2) 12 (3) 24 (4) 72

Q. 21. Use the digits 1 to 5 each once. Replace each letter by one of the digits. Make the total in each circle the same.



What is the total in each of the circle?

- (1) 4 (2) 7 (3) 5 (4) 6

Q. 22. What can be the product of $\clubsuit\clubsuit7 \times \clubsuit9$, where \clubsuit denotes digits not necessarily the same?

- (1) 1593 (2) 3239 (3) 293 (4) 3103

Q. 23. What number can replace the \clubsuit , if $11\frac{\clubsuit}{9} = 12\frac{4}{9}$

- (1) 13 (2) 8 (3) 10 (4) 6

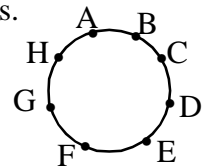
Q. 24. Simplify using BODMAS Rule : $13 - 2 \times 3 + 15 \div 3$

- (1) 36 (2) 12 (3) 10 (4) 1

Q. 25. A man facing north direction turns 135° towards his left. Then he turns 225° towards his right. In what direction is he facing now?

- (1) South-West (2) South-East (3) West (4) North-West

Q. 26. Eight points are drawn on the circumference of a circle as shown besides. How many line segments can be drawn joining any two points?



- (1) 16 (2) 7
(3) 28 (4) 14

Q. 27. Which of the following represents the year 1945 in Roman Numeral?

- (1) IXXLV (2) MCMXLV (3) MCDLXV (4) CMXLV

Q. 28. A wire is bent in the form of a rectangle whose length measures 16 cm and breadth 12 cm. If the same wire is bent in the form of a square, what would be the side of the square?

- (1) 14 cm (2) 28 cm (3) 18 cm (4) 7 cm

Q. 29. A gold ring weighs 5 grams 15 milligrams. How would you represent this weight in decimal as grams?

- (1) 5.0015 gm (2) 5.15 gm (3) 0.515 gm (4) 5.015 gm

Q.30. Insert the proper sign of comparison in the box : $2 + 3 \times 2 \square 2 \times (3 + 2)$

- (1) = (2) > (3) < (4) None of these

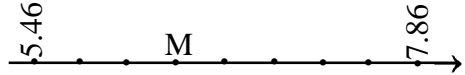
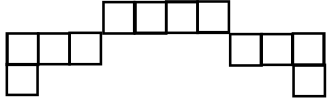
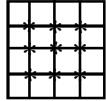
Q. 31. The product of three distinct prime numbers is 130. What is the sum of these three prime numbers?


- (1) 130 (2) 27 (3) 18 (4) 20

Q. 32. By how much is 1.3 greater than 0.13 ?

- (1) 10 (2) 1.10 (3) 1.17 (4) 1.13

-
- Q. 33. At half past six, what is the angle between the hour and the minute hand?
(1) 15° (2) 12° (3) 30° (4) 45°
- Q. 34. $8^2 + 15^2 = x^2$ Find the value of x:
(1) 23 (2) 17 (3) 25 (4) 15
- Q. 35. Which of the following triangles can have the measure of its two angles as 48° and 66°
(1) Equilateral triangle (2) Right angled triangle
(3) Isosceles triangle (4) Obtused angled triangle
- Q. 36. How many two digit numbers are there which are divisible by 4, 6 and 8?
(1) 24 (2) 8 (3) 6 (4) 4
- Q. 37. The length of a rectangle is 2 more than its breadth. If the breadth is 'a + 2' then which of the following represents its perimeter ?
(1) $4a + 4$ (2) $4a + 8$ (3) $4a + 12$ (4) $2a + 12$
- Q. 38. Christofer reads his favourite book "The Famous Five" in 4 hours and 30 minutes. If he reads at a constant rate of 100 pages every 50 minutes, then how many pages does the book have?
(1) 540 (2) 430 (3) 860 (4) 270
- Q. 39. If $a = 2$ and $b = 5$, then the value of the expression $(a + b) \times (b - a) = ?$
(1) 49 (2) 21 (3) 25 (4) 10
- Q. 40. The number $2\clubsuit 1\clubsuit$ is divisible by 11, and the digits at the \clubsuit place are the same. What digit must replace the \clubsuit ?
(1) 6 (2) 5 (3) 8 (4) 7

- Q. 1. In the multiplication given besides each distinct letter represents a single distinct digit. Find the digit represented by D ?
- $$\begin{array}{r} A\ 6\ B\ C \\ \times \quad 7 \\ \hline D\ 9\ E\ 9\ 8 \end{array}$$
- (1) 3 (2) 1 (3) 4 (4) 2
- Q. 2. On Saturday afternoon Arnav sent 'm' text messages each hour for 5 hours and Pranav sent 'p' text messages each hour for 4 hours. Which of the following represents the total number of messages sent by Arnav and Pranav on Saturday afternoon?
- (1) 9mp (2) 9 (m + p) (3) 5m + 4p (4) 20mp
- Q. 3. If 20% of an electricity bill is deducted, then Rs.100 is still to be paid. How much was the original bill?
- (1) Rs.110 (2) Rs.115 (3) Rs.120 (4) Rs.125
- Q. 4. On the number line given besides, the points are equally spaced. What number is represented by the point 'M' ?
- 
- (1) 5.52 (2) 6.36 (3) 6.66 (4) 6.96
- Q. 5. If (x + 21) is an odd number, then find the 3rd even number coming after it ?
- (1) (x + 24) (2) (x - 24) (3) (x + 26) (4) (x + 27)
- Q. 6. Which of the given expression has the greatest value?
- (1) 10 - 3 x 3 (2) (10 + 3) x 3 (3) 10 x 3 + 3 (4) 3 x 3 + 10
- Q. 7. What is the complementary angle of the angle (x - 35)° ?
- (1) (x + 35)° (2) (35 - x)° (3) (125 - x)° (4) (x - 55)°
- Q. 8. Squares of side 1.5cm are arranged to form the figure shown. What is the perimeter of the figure?
- 
- (1) 48 cm (2) 45 cm (3) 36 cm (4) 54 cm
- Q. 9. A man earned Rs.120 when he sold 8 dozens of mangoes. How much would he earn if he sold 20 dozens of mangoes?
- (1) Rs.960 (2) Rs. 480 (3) Rs. 300 (4) Rs.240
- Q. 10. The nine interior intersection points on a 4 x 4 grid of squares are shown besides. How many interior intersection points are there on a 16 x 16 grid of squares?
- 
- (1) 225 (2) 196 (3) 256 (4) 144
- Q. 11. A right angled triangle has its sides measures 7cm, 24cm and 25cm. Which of the following calculation could work out to be its area in sq.cm.?
- (1) $\frac{7 \times 24 \times 25}{2}$ (2) 7 x 12 (3) 12 x 12.5 (4) 3.5 x 12

- Q. 12. In April Harry bought a saddle for his horse for Rs. 100. In May he sold it for Rs.200. In June he was sorry he had sold it, so he bought it back for Rs.300. In July he got tired of it, so he sold it for Rs.400. Which of the following is true outcome of his transactions?
(1) Loss of Rs.100 (2) Profit of Rs.100 (3) Profit of Rs.200 (4) No Profit nor Loss
- Q. 13. A square is cut along the centre of its side to make two identical rectangles. 
If the perimeter of each rectangle is 48 cm, then the perimeter of the square is:
(1) 96 cm (2) 144 cm (3) 72 cm (4) 64 cm
- Q. 14. Find the value of 'x' in the equation $3x + 7 = 1 - 2x$
(1) $\frac{1}{5}$ (2) $-\frac{7}{6}$ (3) $-\frac{6}{5}$ (4) -6
- Q. 15. A fruit seller sells only apples(A), mangoes(M) and oranges(O). The total number of A and M with him are 400, the total number of M and O he has is 300, and the total numbers of A and O he has is 440. If he sells 100 fruits of each type, how many fruits of each type are remaining with him?
(1) A= 270, M = 100 & O =50 (2) A= 170, M = 30 & O =70
(3) A= 300, M = 200 & O =140 (4) A= 150, M = 60 & O =50
- Q. 16. In which of the numbers given below will the difference between the place values of the digit 9 and 7 be 83000?
(1) 1907000 (2) 109700 (3) 197000 (4) 91700
- Q. 17. Three electronic bells beep after every 2, 5 and 8 minutes. If they all beeped together at 10:00 a.m when will they beep together the next time ?
(1) 10: 40 a.m. (2) 10: 32 a.m. (3) 10: 30 a.m. (4) 11: 20 a.m.
- Q. 18. In what time will Rs.25 become Rs.37 at 16% p.a. simple interest?
(1) 6 months (2) 2 years (3) 3 years (4) 2 years 6 months
- Q. 19. If $\frac{5}{8}$ of the teachers of a coaching class plays chess, $\frac{3}{8}$ teachers play carrom and $\frac{1}{4}$ play both chess and carrom. What fraction of the teachers play neither of the two games?
(1) $\frac{1}{4}$ (2) $\frac{1}{8}$ (3) $\frac{1}{2}$ (4) 0
- Q. 20. An ant moves 15 feet per minute. How many feet does it travel in 24 minutes and 40 seconds?
(1) 360 ft. (2) 370 ft. (3) 385 ft. (4) 365 ft.

- Q. 21. Krina used her calculator and multiplied a number by 20 instead of by 2. What could she now do to obtain the correct answer?
(1) Divide by 20 (2) Divide by 40 (3) Multiply by 0.5 (4) Multiply by 0.1
- Q. 22. If $\frac{a}{b} = 2$, what is the value of $\frac{4b}{a}$? (1) 0 (2) 1
(3) 2 (4) 4
- Q. 23. The sum of two consecutive prime numbers is 42. What is the difference of those two prime numbers?
(1) 2 (2) 4 (3) 5 (4) 3
- Q. 24. A man takes up a work to be completed in 30 days for Rs.27000. He works for 18 days and then leaves. If you were the employer, how much would you pay him?
(1) Rs.16000 (2) Rs.18000 (3) Rs.16200 (4) Rs.18400
- Q. 25. Find the least number that must be added to 1300 so as to get a perfect square number?
(1) 61 (2) 65 (3) 64 (4) 69
- Q. 26. Simplify using BODMAS : $778 - [5 + 3 \text{ of } (25 - 2 \times 10)]$
(1) 83 (2) 738 (3) 758 (4) 788
- Q. 27. The length and width of a rectangle are 12 cm and 8 cm respectively. Another rectangle whose area is same as the first rectangle, has length 16 cm. What could be the width of this rectangle?
(1) 8 cm (2) 10 cm (3) 4 cm (4) 6 cm
- Q. 28. Ajay writes the sequence : 3, 14, 25, 36, Which of the following numbers can appear in his sequence?
(1) 114 (2) 111 (3) 110 (4) 113
- Q. 29. The H.C.F. of 513, 1134 and 1215 is :
(1) 18 (2) 27 (3) 15 (4) 33
- Q. 30. Kedar borrowed Rs.12000 from his friend at simple interest. He returned his friend Rs.15600 in full settlement of his loan after 5 years. What was the rate of interest charged by his friend?
(1) 6% p.a. (2) 5% p.a. (3) 12% p.a (4) 8% p.a.
- Q. 31. A hospital stores one type of medicine in a 2-decagram container. How many 1-milligram doses are there in a 2-decagram container?
(1) 0.002 (2) 200 (3) 2000 (4) 20000

Q. 32. What is 5% of 5% of Rs.100?

- (1) Rs. 0.50 (2) Rs. 0.25 (3) Rs.1 (4) Rs.25

Q. 33. When a number X is divided by 5 the remainder is 2. When another number Y is divided by 5 the remainder is 4. When you divide X + Y by 5, then what should be the remainder?

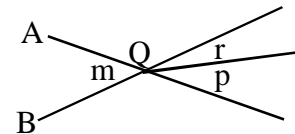
- (1) 0 (2) 1 (3) 2 (4) 3

Q. 34. A shopkeeper sold a bat for Rs.600 making a profit of 20%. What was the cost price of the bat?

- (1) Rs.480 (2) Rs.580 (3) Rs.540 (4) Rs.500

Q. 35. In the figure given besides lines A and B intersect at point Q
If $\angle m = 40^\circ$ and $\angle r = 18.5^\circ$, what is the value of $\angle p$

- (1) 58.5° (2) 22.5° (3) 12.5° (4) 21.5°



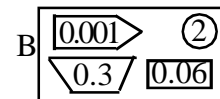
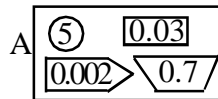
Q. 36. The sum of three consecutive natural numbers is 66. Which of the following can be one of the numbers of them?

- (1) 23 (2) 24 (3) 17 (4) 19

Q. 37. Jack is reading a book whose pages are numbered from 1. The page numbers of the book has a total of 555 digits. How many pages are there in Jack's book?

- (1) 221 (2) 366 (3) 361 (4) 291

Q. 38. Use the place value to work out the numbers in boxes A and B and then find the difference between A and B



- (1) 3.002 (2) 3.371 (3) 3.560 (4) 3.722

Q. 39. Which of the following fraction is less than $\frac{1}{20}$?

- (1) $\frac{1}{10}$ (2) $\frac{1}{15}$ (3) $\frac{1}{12}$ (4) $\frac{1}{22}$

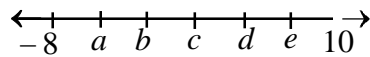
Q. 40. An insect flies at the rate of 10m/sec. What is its speed ?

- (1) 18 km/hr (2) 60 km/hr (3) 36 km/hr (4) 24 km/hr

Q. 1. If the measure of an exterior angle of a regular polygon is greater than 50, what is the greatest number of sides it can have?

- (1) 5 (2) 6 (3) 7 (4) 8

Q. 2. On the number line each mark is equally spaced between -8 to 10 and are represented by letters. Of these letters, which letter has the least positive value ?



- (1) a (2) c
(3) b (4) d

Q. 3. Which of the following expressions is equal to 2020?

- (1) $(4^2 + 4) (10^2 + 1)$ (2) $(1^2 + 4) (20^2 + 1)$
(3) $(2^2 + 4) (30^2 + 1)$ (4) $(3^2 + 4) (20^2 + 1)$

Q. 4. Which of the following equation is satisfied by the four pairs of numbers listed in the table beside?

x	-2	0	2	3
y	-3	3	9	12

- (1) $y = x^3 + 3$ (2) $y = 3x + 3$ (3) $y = x^2 + 6$ (4) $y = -3x + 6$

Q. 5. Squares of 1cm by 1cm are joined edge to edge to make the rectangle as shown. What is the area of the un-shaded portion of the figure?

- (1) 9 sq. cm. (2) 3 sq. cm. (3) 6 sq. cm. (4) 10.5 sq. cm.



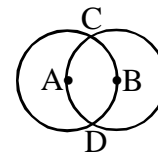
Q. 6. There are 400 students in Bishop's School, where the ratio of boys to girls is 3 : 2. There are 600 students in St. Mary's School, where the ratio of boys to girls is 2 : 3. When considering all the students of both the schools, the ratio of boys to girls is ?

- (1) 3 : 2 (2) 2 : 3 (3) 12 : 13 (4) 1 : 1

Q. 7. Each of the two circles of equal radii with centres at A and B pass through the centres of one another.

If they cut at C and D then the angle DBC is equal to :

- (1) 60° (2) 120° (3) 100° (4) 140°



Q. 8. In the sequence given below, the first term is 4 and each term after the first term is 7 more than the previous term. What is the 27th term of the sequence?

4, 11, 18,

- (1) 112 (2) 193 (3) 186 (4) 190

Q. 9. On Monday Usha ran 3 miles in 25 minutes. If she runs for 45 minutes at this rate on Tuesday, how far did Usha run on Tuesday?

- (1) 6.6 miles (2) 6.5 miles (3) 5.5 miles (4) 5.4 miles

Q. 10. What is the average of these fractions : $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$ & $\frac{1}{6}$

- (1) $\frac{5}{16}$ (2) $\frac{7}{24}$ (3) $\frac{5}{12}$ (4) $\frac{1}{15}$

- Q. 11. Suresh starts a business with Rs.45000. Ramesh joins the business after 3 months with Rs.30000. In what ratio should they share the profit at the end of the year?
 (1) 1 : 2 (2) 2 : 1 (3) 3 : 2 (4) 1 : 3

- Q. 12. Solve the addition and subtraction sum given below:
 $1 + 2 - 3 - 4 + 5 + 6 - 7 - 8 + 9 + 10 - 11 - 12 + 13 + 14 - 15 \dots\dots\dots + 301 + 302 = ?$
 (1) 603 (2) 300 (3) 303 (4) 0

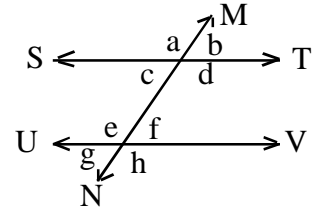
- Q. 13. If $\frac{j}{k} = 32$ and $k = \frac{3}{2}$, then what is the value of $\frac{1}{2} j$?
 (1) 24 (2) 16 (3) 28 (4) 48

- Q. 14. How many square pictures of side 20 cm can be pasted on a rectangular sheet of paper whose dimensions are 2m by 1m?
 (1) 200 (2) 100 (3) 150 (4) 50

- Q. 15. By what least number should you multiply 6300 to make is a perfect square?
 (1) 10 (2) 7 (3) 5 (4) 9

- Q. 16. What is the measure of an angle of a regular polygon of 12 sides?
 (1) 120° (2) 135° (3) 140° (4) 150°

- Q. 17. In the figure line ST is parallel to line UV and line MN is the transversal, then $\angle c$ and $\angle e$ are:
 (1) consecutive interior angles (2) alternate interior angles
 (3) vertical angles (4) corresponding angles



- Q. 18. Arun completed $\frac{5}{8}$ th of a job in 10 days and leaves. Varun takes over the job and works at the same pace as Arun. How many days will Varun take to complete the job?
 (1) 4 days (2) 5 days (3) 6 days (4) 7 days

- Q. 19. Two years ago, the average age of a family of 5 members was 16 years. After a baby is born, the average age of the family is the same today. Find the present age of the baby.
 (1) 4 years (2) 6 years (3) 8 years (4) 5 years

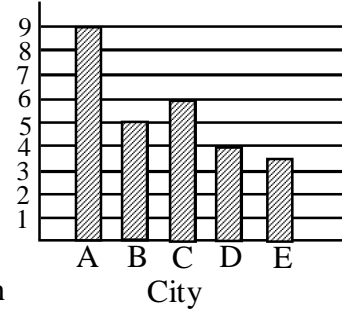
- Q. 20. If Rs.4 becomes Rs.10 in 50 years at simple interest, the rate percent per annum is?
 (1) 6% (2) 2% (3) 3% (4) 4%

- Q. 21. Decorative paper costs Rs.60 per kg. What would be the expenditure to cover a cube of edge 10 m with this paper, if one kg. of paper covers 20 sq.m. area?
 (1) Rs.1800 (2) Rs.3600 (3) Rs.2250 (4) Rs.2700

- Q. 22. If Rs.460 amounts to Rs.640 by S.I in 6 years, what will it amount to in 2 years at the same rate % ?
 (1) Rs.580 (2) Rs.700 (3) Rs.500 (4) Rs.520

Q. 23. The number of rooftops with solar panel installations in 5 cities is shown in the graph besides. If the total number of installations is 27500, what is an appropriate label for the vertical axis of the graph?

Rooftop Solar Panel Installations in Five Cities



- (1) Number of installations (in tens)
- (2) Number of installations (in hundreds)
- (3) Number of installations (in thousands)
- (4) Number of installations (in ten thousands)

Q. 24. Which of the following is true with respect to the graph given above?

- (1) Solar panel in city A are 50% more than of city B
- (2) Solar panel in city C are 50% more than of city D
- (3) Solar panel in city A are 50% more than of city D
- (4) Solar panel in city D are 50% more than of city B

Q. 25. The difference between the number of solar panel of which two cities is 500?

- (1) A and B
- (2) C and B
- (3) A and D
- (4) D and E

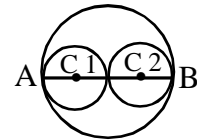
Q. 26. The five integers 2, 5, 6, 9 and 14 are arranged into a different order. In the new arrangement, the sum of the first three integers is equal to the sum of the last three integers. What is the middle number in the new arrangement?

- (1) 6
- (2) 2
- (3) 9
- (4) 14

Q. 27. Find the ratio of the speeds of a truck and a train, when the truck covers 550 m in 1 minute and the train covers 33 km in 45 minutes.

- (1) 4 : 3
- (2) 3 : 4
- (3) 2 : 1
- (4) 5 : 3

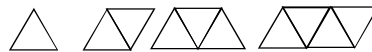
Q. 28. In the figure given besides AB is the diameter of the large circle. The centres C1 and C2 of the smaller circles are on AB. The two small circles are congruent and tangent to each other and to the larger circle. The circumference of the circle C1 is 8π . What is the area of the large circle?



- (1) 64π
- (2) 32π
- (3) 16π
- (4) 128π

Q. 29. A sequence of figures is formed using tiles. Each tile is an equilateral triangle with side length 7 cm. The first figure consists of 1 tile. Each figure after the first is formed by adding one tile to the previous figure.

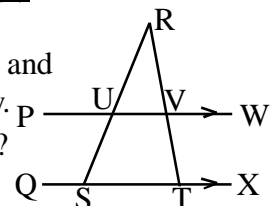
The first four figures are as shown:



How many tiles are used to form the figure in the sequence with perimeter 91 cm?

- (1) 23
- (2) 15
- (3) 13
- (4) 11

Q. 30. In the figure given besides PW is parallel to QX. S and T lie on QX, and U and V are points of intersection of PW with SR and TR respectively. If $\angle SUV = 120^\circ$ and $\angle VTX = 112^\circ$. What is the measure of $\angle URV$?



- (1) 52°
- (2) 56°
- (3) 60°
- (4) 64°

Q. 31. A rectangular field has to be fenced on three sides leaving a side 20 feet uncovered. If the area of the field is 680 sq.ft., how many feet of fencing will be required?
 (1) 82 ft. (2) 92 ft. (3) 95 ft. (4) 88 ft.

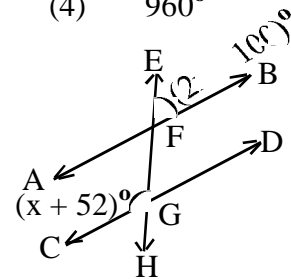
Q. 32. The cost of 80 apples is equal to the cost of 120 oranges. A man bought 60 apples and 75 oranges for Rs.1320. If you were to buy 25 apples and 40 oranges, how much would you pay?
 (1) Rs.660 (2) Rs.620 (3) Rs.820 (4) Rs.780

Q. 33. Sum of the squares of two numbers is 145. If the square root of one number is 3, then the other number is?
 (1) 136 (2) 12 (3) 8 (4) 64

Q. 34. The diameter of a cycle wheel is 14 cm. How much distance will it cover if it rotates 150 times.
 (1) 440 m (2) 44 m (3) 60 m (4) 66 m

Q. 35. The exterior angle of a regular polygon is 40° . What is the sum measure of all the angles of this polygon?
 (1) 360° (2) 720° (3) 1260° (4) 960°

Q. 36. In the adjoining figure AB and CD are parallel and EH is a transversal, $m\angle EFB$ is $(2x - 100)^\circ$ and $m\angle CGF$ is $(x + 52)^\circ$. Find $m\angle EFB$
 (1) 12° (2) 52°
 (3) 72° (4) 128°



Q. 37. A fruit seller is selling bananas at Rs.36 per dozen. How much would you pay for 9 bananas?
 (1) Rs.27 (2) Rs.26 (3) Rs.24 (4) Rs.30

Q. 38. The average of fifty numbers is 28. If two numbers, namely 25 and 35 are discarded, the average of the remaining numbers is nearly :
 (1) 29.27 (2) 27.92 (3) 27.29 (4) 29.72

Q. 39. A bank offers 7% p.a. simple interest. What principal amount would you invest to get a monthly interest of Rs.210 ?
 (1) Rs.24000 (2) Rs.36000 (3) Rs.18000 (4) Rs.72000

Q. 40. A tank whose length is 60 cm and breadth 30 cm contains water. A cubical steel box having edge of 30 cm is immersed completely in the tank. The water in the tank will rise by :
 (1) 7.5 cm (2) 10 cm (3) 15 cm (4) 30 cm



- Q. 1. What number could replace 'x' in : $6.4 \times 2.5 + 4.41 \div 2.1 \div x = 26$
(1) 0.21 (2) 2.1 (3) 21 (4) 10
- Q. 2. The diameter of a wheel is 6.3 cm. Find the distance covered by it in 100 revolutions.
(1) 198 m (2) 198 cm (3) 19.8 m (4) 1.98 m
- Q. 3. Simplify : $243^{\frac{2}{5}} \times 81^{\frac{3}{4}} \div 3^7$ (1) 0 (2) 1
(3) -3 (4) $\frac{1}{9}$
- Q. 4. Solve : $\sqrt{\frac{0.64 \times 8.1}{65.61 \times 25.6}} = ?$ (1) $\frac{1}{9}$ (2) $\frac{1}{16}$
(3) $\frac{1}{18}$ (4) $\frac{3}{2}$
- Q. 5. A certain number of men complete a job in 60 days. If there were 8 men more the work would have been finished in 50 days. How many men were there in the beginning?
(1) 30 (2) 40 (3) 24 (4) 36
- Q. 6. Find the angle whose complementary angle is one-tenth its supplementary angle.
(1) 80° (2) 60° (3) 50° (4) 100°
- Q. 7. Divide 40 into two parts such that the sum of their reciprocals is $\frac{2}{15}$
What is the smaller number of the two?
(1) 8 (2) 12 (3) 10 (4) 15
- Q. 8. The ratio of the exterior angle and the interior angle of a regular polygon is 2 : 7
By how much is the interior angle greater than the exterior angle of this polygon?
(1) 140° (2) 70° (3) 60° (4) 100°
- Q. 9. Given that $x + \frac{3-x}{3} = 1 + \frac{x-2}{2}$. Find the value of y if $\frac{3}{x} + \frac{1}{y} = \frac{3}{2}$
(1) $\frac{1}{2}$ (2) $\frac{3}{2}$ (3) $\frac{1}{4}$ (4) $-\frac{3}{2}$
- Q. 10. The H.C.F of $\spadesuit \spadesuit 6$ and 343 is 7 and the digits at the \spadesuit place are the same. Find the digit in the \spadesuit place.
(1) 7 (2) 3 (3) 6 (4) 4
- Q. 11. What is the difference between the greatest and the smallest fractions of these fractions:
 $\frac{3}{4}$, $\frac{2}{3}$, $\frac{5}{6}$, $\frac{4}{5}$ (1) $\frac{1}{30}$ (2) $\frac{2}{15}$ (3) $\frac{1}{6}$ (4) $\frac{1}{12}$
- Q. 12. Evaluate : $\frac{8.6 \times 3.5}{2.4 \times 0.07} \div \frac{1}{3.6 \times 1.29}$ (1) 1000 (2) 450
(3) 600 (4) 500

- Q. 13. The simple interest on a certain principal for 2 years is Rs.1200 and the compound interest is Rs.1290. What could be the principal amount of the following?
 (1) Rs.8000 (2) Rs.12000 (3) Rs.4000 (4) Rs.6000
- Q. 14. The area of a rhombus is 336 sq.cm. and one of its diagonal is 14 cm. Find the perimeter of the rhombus.
 (1) 84 cm (2) 56 cm (3) 96 cm (4) 100 cm
- Q. 15. Simplify : $5 a^2 b^3 \times 3 a^3 b^2 \div 6 a^5 b^6$
 (1) $\frac{5}{ab}$ (2) $\frac{5}{2b}$ (3) $\frac{3}{b}$ (4) $\frac{5a}{2b}$
- Q. 16. The angles of a triangle are : $(x + 15)$, $(3x - 75)$ and $(150 - 2x)$. Which of the following is true about this triangle?
 (1) The triangle is Right angled (2) The triangle is Isosceles
 (3) The triangle is Equilateral (4) The triangle is Right angled Isosceles
- Q. 17. If $x + \frac{1}{x} = 3$ then $x^2 + \frac{1}{x^2} = ?$ (1) 3 (2) 9
 (3) 6 (4) 7
- Q. 18. In a group of people, the oldest and the youngest have an age difference of 100 years. If these two are left out of counting, then the average age of the remaining 40 people is 28. The average age of the entire group being 30, how old is the eldest person?
 (1) 101 years (2) 140 years (3) 120 years (4) 103 years
- Q. 19. When Mrs. Joshi divided the surface area of a sphere by the sphere's volume, she got the answer as $\frac{1}{18}$ cm. What could be the radius of the sphere?
 (1) 54 cm (2) 6 cm (3) 45 cm (4) 36 cm
- Q. 20. By selling an article at 80% of its marked price, a merchant makes a loss of 12%. What profit or loss % will the merchant make if the article is sold at 95% of its marked price?
 (1) 5% profit (2) 4.5% profit (3) 1% loss (4) 10% loss
- Q. 21. What should be added to $1\frac{3}{5}$ to get $3\frac{2}{7}$?
 (1) $1\frac{8}{35}$ (2) $3\frac{5}{7}$ (3) $8\frac{1}{35}$ (4) $1\frac{24}{35}$
- Q. 22. Twelve men can dig a well in 8 days. After 3 days of work, the contractor asks 3 more men to join to dig the well. In how many days was the work completed?
 (1) 6 (2) 7 (3) 5 (4) 4
- Q. 23. Which of the following is the smallest: $\sqrt[4]{16}$, $\sqrt[5]{32}$, $\sqrt[3]{8}$, $\sqrt{3}$
 (1) $\sqrt{3}$ (2) $\sqrt[3]{8}$ (3) $\sqrt[5]{32}$ (4) $\sqrt[4]{16}$
- Q. 24. The L.C.M of two numbers is 225 and their H.C.F is 5. If one of the numbers is 25, then the other is?
 (1) 75 (2) 65 (3) 45 (4) 15

- Q. 25. In the India-Australia one day match, due to rain, India needed 324 runs in 48 overs to win. In the first 10 overs, the average scoring rate was 6, in the next 10 overs it increased to 8.5. It then declined to 5.5 in the next 10 overs and again rose to 7 in next 10 overs. To win the match what average is needed?
(1) 8.25 (2) 6.75 (3) 7.75 (4) 7
- Q. 26. In a library, the ratio of number of Mathematics books to that of Science books was 4:3 and total number of Mathematics books was 1248. When some more Mathematics books were bought, the ratio became 5:3. Find the number of Mathematics books bought.
(1) 312 (2) 321 (3) 936 (4) 1560
- Q. 27. Alok invested a certain sum of money in a simple interest bond whose value grew to Rs.300 at the end of 3 years and to Rs.400 at the end of another 5 years. Find the rate of interest?
(1) 12% (2) 6.25% (3) 8.33% (4) 20%
- Q. 28. The price of cooking oil has increased by 25%. By what percent should a family reduce the consumption of cooking oil so as not to increase the expenditure on cooking oil?
(1) 16% (2) 18% (3) 25% (4) 20%
- Q. 29. A train travelling at 72 km/hr crosses a platform in 30 seconds and a man standing on the platform in 18 seconds. What is the length of the platform in meters?
(1) 360 meters (2) 240 meters (3) 420 meters (4) 600 meters
- Q. 30. The two equal sides of an isosceles triangle are $(3x + 1)$ cm and $(4x - 2)$ cm, and the third side is $(2x - 1)$ cm. What is the perimeter of this triangle?
(1) 36 cm (2) 28 cm (3) 25 cm (4) cannot be determined
- Q. 31. Find the rate of interest when Rs.800 becomes Rs.882 in two years at C.I .
(1) 5% (2) 8% (3) 4% (4) 6%
- Q. 32. Akhil started a business investing Rs.12000. Nikhil joined him after 4 months by investing Rs.18000. What would be the share of Nikhil in the profit of Rs.9500 at the end of the year?
(1) Rs.5700 (2) Rs.4750 (3) Rs.3800 (4) Rs.6250
- Q. 33. Two books are sold for Rs.500 each. The dealer makes a profit of 25% on one and loses 25% on the other. Find the dealer's profit or loss on the whole.
(1) No profit no loss (2) 5% loss (3) 6.25% profit (4) 6.25% loss
- Q. 34. The hypotenuse of a right angled triangle is 25 cm, and the difference between the other two sides is 5 cm. To find the measure of these two sides, which of the following equation would you use?
(1) $x^2 - 5x - 300 = 0$ (2) $x^2 - 5x + 300 = 0$
(3) $x^2 + 5x - 600 = 0$ (4) $x^2 - 10x - 300 = 0$

- Q. 35. The square root of the smallest 4-digit square number is:
(1) 100 (2) 30 (3) 32 (4) 40
- Q. 36. The sum measure of all the angles of 24 sided regular polygon is :
(1) 24 rt.angles (2) 44 rt.angles (3) 48 rt.angles (4) 36 rt.angles
- Q. 37. What should be added to $a^2 + 6ab$ to make it a perfect square?
(1) $3b^2$ (2) $6b^2$ (3) b^2 (4) $9b^2$
- Q. 38. In a college 55% students are girls. 80% of the boys like Mathematics. What percentage of girls like Mathematics, if overall 58% of the students like Mathematics?
(1) 40% (2) 55% (3) 45% (4) 22%
- Q. 39. A solid metal ball whose diameter is 6 cm is melted and made into a solid cylinder. If the diameter of the cylinder is the same as the ball, what would be its height?
(1) 8 cm (2) 6 cm (3) 4 cm (4) 6.5 cm
- Q. 40. A motorist covered a distance of 340 km between city A and city B in 5 hours. If part of the distance is covered at a speed of 60 km/hr and the remaining at 80 km/hr, how many hours did the motorist travel at 60 km/hr?
(1) 2 hours (2) 2 hr 30 min (3) 3 hr 30 min (4) 3 hours

- Q. 1. What should be added to $-\frac{6}{11}$ to get $-\frac{9}{16}$
- (1) $\frac{3}{16}$ (2) $\frac{-3}{176}$ (3) $\frac{9}{176}$ (4) $\frac{6}{176}$
- Q. 2. Solve : $\sqrt{\frac{0.081 \times 0.324 \times 4.624}{1.5625 \times 0.0289 \times 72.9 \times 64}}$ (1) 0.024 (2) 0.24
 (3) 2.4 (4) 24
- Q. 3. Which of the following is the expanded form of $(6x - 7y - 4z)^2$:
- (1) $36x^2 + 49y^2 + 16z^2 - 84xy - 48xz + 56yz$
 (2) $36x^2 + 49y^2 - 16z^2 + 84xy + 48xz - 56yz$
 (3) $36x^2 - 49y^2 + 16z^2 - 84xy + 48xz - 56yz$
 (4) None of these
- Q. 4. Which of the following is/are correct?
- (1) $x^3 + 1 = (x + 1)(x^2 + x + 1)$ (2) $x^3 + 1 = (x + 1)(x^2 - x + 1)$
 (3) $x^3 - 1 = (x - 1)(x^2 - x + 1)$ (4) $x^3 - 1 = (x - 1)(x^2 + x + 1)$
 (1) 1 & 3 (2) 1 & 4 (3) 2 & 4 (4) 2, 3 & 4
- Q. 5. Write the given equation in the standard form of quadratic equation:
- $\frac{1}{x+1} + \frac{1}{x-2} = \frac{1}{x-3}$ (1) $2x^2 - 7x + 8 = 0$ (2) $x^2 + 6x + 8 = 0$
 (3) $x^2 - 6x + 5 = 0$ (4) $x^2 - 7x + 5 = 0$
- Q. 6. Find the value of 'm' if $m = \frac{n}{2} + 3\frac{1}{2}$, $n = \frac{x}{2} - 4$ and $x = 2$
- (1) 2 (2) 3 (3) -3 (4) -2
- Q. 7. Each entry in a data is divided by a non-zero number 'a', the arithmetic mean of the new data is _____
- (1) multiplied by 'a' (2) divided by 'a'
 (3) not changed (4) reduced by 'a'
- Q. 8. The difference between the simple interest and compound interest on Rs.1200 for one year at 10% per annum compounded half yearly is:
- (1) Rs. 2.50 (2) Rs.4 (3) Rs.3 (4) None of these
- Q. 9. The length of a minute hand of a clock is 10 cm. Find the area swept by it in 10 minutes
- (1) 52.38 sq.cm (2) 62.5 sq.cm (3) 60 sq.cm (4) 43.8 sq.cm
- Q. 10. If P = Set of all factors of 48 and Q = Set of all factors of 12 then $P \cap Q = ?$
- (1) $P \cap Q = \{ 8, 12 \}$ (2) $P \cap Q = \{ 1, 2, 4, 8 \}$
 (3) $P \cap Q = \{ 1, 2, 3, 4, 6, 12 \}$ (4) $P \cap Q = \{ 1, 2, 3, 4, 6, 8, 12 \}$

Q. 11. The cost of $11 \frac{2}{3}$ meters of rope is Rs. $29 \frac{2}{7}$. Find the cost of 1 meter of rope.

- (1) Rs. 2 . 450 (2) Rs. 2 . 510 (3) Rs. 3 . 20 (4) Rs. 4 . 10

Q. 12. Which of the following sets of solution will satisfy the equations :
 $2^x \times 4^y = 32$ and $3^x \div 9^y = 3$

- (1) $x = y = 3$ (2) $x = y = 2$
 (3) $x = 1, y = 3$ (4) $x = 3, y = 1$

Q. 13. Simplify: $\left[\frac{(x+1)^2 (x^2-x+1)^2}{(x^3+1)^2} \right]^2 \times \left[\frac{(x-1)^2 (x^2+x+1)^2}{(x^3-1)^2} \right]^2$

- (1) $(x+1)^4$ (2) $[(x^3-1)^2]^2$ (3) 1 (4) $(x^3+1)^4$

Q. 14. The ratio of the products of the roots and the sum of the roots is $4 \frac{4}{5}$ of an equation $ax^2 + bx + c = 0$. If one of the root is 8, the other root is:

- (1) 6 (2) 14 (3) 16 (4) 12

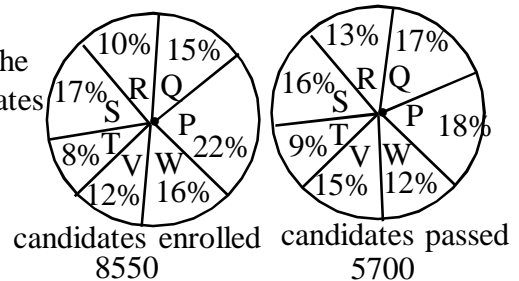
Q. 15. The L.C.M. of the polynomial $x^3 + x^2 + x + 1$ and $x^3 - x^2 + x - 1$ is:

- (1) $x^2 + 1$ (2) $(x^2 - 1)(x + 1)$ (3) $(x^2 + 1)(x^2 - 1)$ (4) $(x^2 + 1)(x - 1)$

Q. 16. The number between 10 and 100 is five times the sum of its digits. If 9 be added to it the digits are reversed. Find the number.

- (1) 38 (2) 65 (3) 55 (4) 45

Study the following graph carefully and answer the Q.17 and 18 given below. Distribution of candidates who were enrolled for MBA Entrance Exam and the candidates who passed the exam (out of the enrolled) from different Institutes P, Q, R, S, T, V & W (Graph not to scale)



Q. 17. Which Institute has the highest percentage of candidates passed to the candidates enrolled

- (1) Q (2) R (3) P (4) T

Q. 18. What is the ratio of the candidates passed to the candidates enrolled from Institute P

- (1) 9 : 11 (2) 14 : 17 (3) 6 : 11 (4) 9 : 17

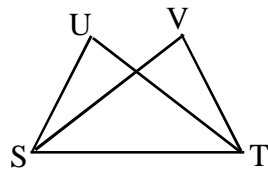
Q. 19. The compound interest on a sum for 2 years at 10% p.a. is Rs. 525. The simple interest on the same amount for double the period and half the rate percent per annum is:

- (1) Rs.400 (2) Rs.450 (3) Rs.600 (4) Rs.500

Q. 20. A box whose length is 10 cm and breadth 8 cm has a volume 400 cu.cm. Its height is

- (1) 0.5 cm (2) 5 cm (3) 4 cm (4) 6 cm

- Q. 21. Find the value of : $-\frac{2}{3} \times \frac{3}{5} + \frac{5}{2} - \frac{3}{5} \times \frac{1}{4}$
 (1) $-\frac{31}{20}$ (2) $\frac{29}{4}$ (3) $-\frac{6}{5}$ (4) $\frac{39}{20}$
- Q. 22. What is the value of : $\sqrt[3]{\sqrt{0.000064}}$
 (1) 0.2 (2) 0.02 (3) 0.002 (4) 2
- Q. 23. Find the value of 'm' in the following : $\frac{9^m \times 3^5 \times 27^3}{3 \times 81^4} = 27$
 (1) 0 (2) 2 (3) 3 (4) 4
- Q. 24. Expand : $\left[\frac{2x}{3} - 7\right] \left[\frac{x}{2} - \frac{3}{4}\right]$ (1) $\frac{2x^2}{3} - 8x - \frac{21}{4}$ (2) $x^2 - \frac{4x}{3} + \frac{21}{4}$
 (3) $4x^2 - 3x + \frac{21}{4}$ (4) $\frac{x^2}{3} - 4x + \frac{21}{4}$
- Q. 25. Divide 13 into two parts such that the sum of their squares is 89. Form the equation for this :
 (1) $x^2 + (13 - x)^2 = 89$ (2) $x^2 + x^2 + 13 = 89$
 (3) $x^2 + (x + 13)^2 = 89$ (4) $x^2 - (13 - x)^2 = 89$
- Q. 26. Rs. 12500 amounts to Rs.13520 in six months, interest compounded quarterly. What is the rate of interest per annum?
 (1) 12% (2) 16% (3) 18% (4) 20%
- Q. 27. A man has some hens and cows. The number of heads is 48 and the number of feet is 140, then the number of cows he has is:
 (1) 23 (2) 24 (3) 22 (4) 26
- Q. 28. The length of a chord of a circle is 16 cm and it is at a distance of 15 cm from the centre of the circle. What is the perimeter of the triangle formed by this chord and the two radii from the centre of the circle?
 (1) 50 cm (2) 25 cm (3) 31 cm (4) 48 cm
- Q. 29. The surface area of a sphere is 154 sq.cm. Find its radius.
 (1) 4.5 cm (2) 12.25 cm (3) $\frac{49}{4}$ cm (4) 3.5 cm
- Q. 30. Ten years ago the age of the father was four times the age of his son. Ten years hence the age of the father will be twice that of his son. What is the sum of the ages of the father and son at present?
 (1) 50 (2) 70 (3) 80 (4) 60
- Q. 31. In the given figure $SV \cong TU$ and $SU \cong TV$
 Then the triangles SUT and TVS are congruent by which test?
 (1) SSS (2) SAS
 (3) ASA (4) Not Congruent



Q. 32. Given that $\left(\frac{1}{2}\right)^k = \sqrt{3}$ and $\left(\frac{1}{3}\right)^m = \sqrt{2}$ Find $\frac{mk}{2}$

- (1) $\frac{1}{4}$ (2) $\frac{1}{2}$ (3) $\frac{1}{16}$ (4) $\frac{1}{8}$

Q. 33. If $3^x = 9\sqrt{3}$ and $3^y = \frac{1}{\sqrt{3}}$ Find the value of 3^{x-y}

- (1) 3 (2) 9 (3) 27 (4) 81

Q. 34. The degree of the product of the polynomials $(x^2 + 6x + 7)$ and $(-2x)$ is :

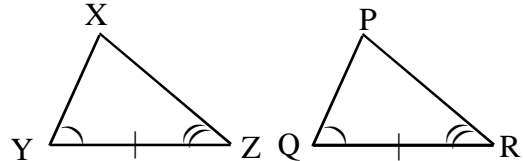
- (1) 3 (2) -2 (3) 1 (4) 2

Q. 35. The sphere and a cube have the same surface area. The ratio of the volume of the sphere to that of the cube is :

- (1) $\sqrt{\pi} : \sqrt{5}$ (2) $\sqrt{6} : \sqrt{\pi}$ (3) $\sqrt{\pi} : \sqrt{6}$ (4) $\sqrt{8} : \sqrt{\pi}$

Q. 36. By which test is $\triangle XYZ \cong \triangle PQR$

- (1) SSS (2) SAS
(3) ASA (4) HS Test



Q. 37. Find the value of 'x' when $\frac{x-8}{3} = \frac{x-3}{2}$

- (1) 7 (2) -7
(3) 3 (4) 6

Q. 38. The length of the tangent segment drawn from a point 17 cm away from the centre of the circle of diameter 16 cm is:

- (1) 16 cm (2) 17 cm (3) 14 cm (4) 15 cm

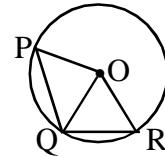
Q. 39. The factors of $x^2 - 7x + 12$ are :

- (1) $(x-4)(x-3)$ (2) $(x+4)(x-3)$ (3) $(x+4)(x+3)$ (4) $(x+7)(x-12)$

Q. 40. How would you write the set $D = \{x \mid x \in \mathbb{N} \text{ and } 2x - 1 < 7\}$ in the listing method?

- (1) $D = \{1, 2, 3, 4\}$ (2) $D = \{0, 1, 2, 3\}$
(3) $D = \{1, 2, 3\}$ (4) $D = \{5, 6, 7\}$

- Q. 1. In the given figure besides, O is the centre of the circle. QR is a side of a regular decagon and PQ is a side of a regular hexagon. What could be the ratio of $\angle QOR : \angle QOP$



- (1) 1 : 4 (2) 2 : 3 (3) 3 : 5 (4) 4 : 3
- Q. 2. Which of the following is a singleton set?
- (1) $A = \{ x | x \in \mathbb{N}, 1 \leq x \leq 3 \}$ (2) $A = \{ x | x \in \mathbb{N}, x^2 - 9 = 0 \}$
 (3) $A = \{ x | x \in \mathbb{I}, x^2 - 4x = 0 \}$ (4) $A = \{ x | x \in \mathbb{I}, x^3 - 9x = 0 \}$
- Q. 3. When $4x^3 - ax^2 + bx - 4$ is divided by 'x - 2' and 'x + 1' the remainders are 20 and -13 respectively. Find the value of a and b.
- (1) $a = 3$ & $b = 2$ (2) $a = -3$ & $b = 2$
 (3) $a = 3$ & $b = -2$ (4) $a = -3$ & $b = -2$
- Q. 4. If $a + b = 16$ and $a^2 + b^2 = 130$, then the value of $a^3 + b^3$ is:
- (1) 1024 (2) 1072 (3) 1062 (4) 1064
- Q. 5. Write the quadratic equation in the standard form for : $\frac{1}{x+1} - \frac{1}{x+3} = \frac{1}{x-3}$
- (1) $x^2 - 3x - 9 = 0$ (2) $x^2 + x - 9 = 0$
 (3) $x^2 + 2x + 9 = 0$ (4) $x^2 - 3x + 9 = 0$
- Q. 6. The measure of the angles of a quadrilateral taken in order are 1 : 2 : 3 : 4, then the quadrilateral is a _____.
- (1) rectangle (2) kite (3) parallelogram (4) trapezium
- Q. 7. ΔABC is an isosceles triangle with side $AB = AC$, side BA is produced to D such that $AB = AD$. Find $m \angle BCD$.
- (1) 90° (2) 60° (3) 45° (4) 120°
- Q. 8. The perimeter of a rectangle is 39 cm. The ratio of the lengths of the two adjacent sides is 5 : 8. Find the breadth of the rectangle.
- (1) 12 cm (2) 13 cm (3) 7.5 cm (4) 9 cm
- Q. 9. Given that $\frac{35}{x-y} + \frac{33}{x+y} = 10$ and $\frac{45}{x-y} + \frac{66}{x+y} = 15$ Find the value of x and y
- (1) $x = 8, y = 3$ (2) $x = 5, y = 3$ (3) $x = 8, y = 5$ (4) $x = 9, y = 4$
- Q. 10. If $\log 2 = 0.3010$ and $\log 3 = 0.4771$, then find the value of $\log 5 + \log \sqrt{24}$
- (1) 1.38905 (2) 0.93805 (3) 2.389 (4) 0.68905

- Q. 11. The speeds of three cars are in the ratio 5 : 4 : 6. The ratio between the time taken by them to travel a same distance is :
- (1) 5 : 4 : 6 (2) 6 : 4 : 5 (3) 10 : 12 : 15 (4) 12 : 15 : 10
- Q. 12. If $U = \{ x \mid x \in \mathbb{N}, x \text{ is a one digit number} \}$, $A = \{ x \mid x \in \mathbb{N}, x \text{ is an odd number} \}$ and $B = \{ x \mid x \in \mathbb{N}, x \text{ is an even prime number} \}$, then what is the cardinal number of $(A \cap B) = ?$
- (1) 0 (2) 1 (3) 3 (4) 2
- Q. 13. $\sqrt{\frac{5}{21-2\sqrt{104}}} - \sqrt{\frac{8}{18+2\sqrt{65}}} = ?$
- (1) $\sqrt{11+2\sqrt{104}}$ (2) $\sqrt{13+2\sqrt{40}}$ (3) $\sqrt{40+2\sqrt{5}}$ (4) None of these
- Q.14. $P(x) = 5x^2 + 2x + 1$; $Q(x) = 2x^2 + 3$; $R(x) = x^2 + 2x + 1$ and $(x) = P(x) - Q(x) + R(x)$
Find $5(x)$.
- (1) $7x^2 + 4x + 5$ (2) $4x^2 + 4x + 5$ (3) $4x^2 + 4x$ (4) $4x^2 + 4x - 1$
- Q. 15. Given that $x^2 + x - 1$ is a factor of $x^3 + ax^2 - 3x + c$. Find the values of 'a' and 'c'
- (1) $a = 1, c = 1$ (2) $a = 1, c = -2$ (3) $a = -1, c = 2$ (4) $a = 1, c = 2$
- Q. 16. If $a = 3, b = 5$ and $c = 6$, then find the value of : $\frac{ab + bc + ca - a^2 - b^2 - c^2}{3abc - a^3 - b^3 - c^3}$
- (1) $\frac{1}{9}$ (2) $\frac{1}{11}$ (3) $\frac{1}{8}$ (4) $\frac{1}{14}$
- Q. 17. Find the quadratic equation whose roots are $-2 - \sqrt{6}$ and $-2 + \sqrt{6}$
- (1) $x^2 + 4x - 2 = 0$ (2) $x^2 - 4x - 2 = 0$ (3) $x^2 + 4x + 2 = 0$ (4) $x^2 - 4x + 2 = 0$
- Q. 18. Express $\log_{10} \sqrt[5]{108}$ in terms of $\log_{10} 2$ and $\log_{10} 3$
- (1) $(2 \log_{10} 2 + 3 \log_{10} 3)^5$ (2) $\frac{1}{5} (2 \log_{10} 2 + 3 \log_{10} 3)$
- (3) $\frac{1}{5} (\log_{10} 2 + \log_{10} 3)$ (4) $(\log_{10} 2 + \log_{10} 3)$
- Q. 19. The ratio of the sides of similar triangles is 2 : 3. If the area of the smaller triangle is 64 sq.cm. find the area of the larger triangle
- (1) 144 sq.cm (2) 96 sq.cm (3) 84 sq.cm (4) 106 sq.cm
- Q. 20. Evaluate : $\frac{5 \sin 66}{\cos 24} - \frac{2 \cot 85}{\tan 5}$ (1) 2 (2) 4
- (3) 1 (4) 3

Q. 21. The ratio of the complementary angle to the supplementary angle of a given angle is 4 : 19. Find the ratio of the angle to its supplementary angle.

- (1) 11 : 4 (2) 11 : 19 (3) 19 : 11 (4) 4 : 11

Q. 22. If $P = \frac{2}{\sqrt{5} - \sqrt{7}}$ and $Q = \frac{2}{\sqrt{5} + \sqrt{7}}$ then find the value of $P - Q$:

- (1) $-2\sqrt{5}$ (2) -2 (3) $-2\sqrt{7}$ (4) $-4\sqrt{3}$

Q. 23. What is the difference of the remainders when $x^3 - 3x^2 + 5x - 1$ is divided by $(x+1)$ and $(x - 1)$?

- (1) ± 15 (2) ± 12 (3) ± 22 (4) ± 25

Q. 24. Factorize : $a^2 + \frac{1}{a^2} + 2 - 3a - \frac{3}{a}$

- (1) $(a - \frac{1}{a})(a - \frac{1}{a} - 3)$ (2) $(a + \frac{1}{a})(a - \frac{1}{a} - 3)$

- (3) $(a + \frac{1}{a})(a + \frac{1}{a} - 3)$ (4) $(a - \frac{1}{a})(a + \frac{1}{a} + 3)$

Q. 25. Simplify : $\frac{2}{1 + \frac{x}{y+z}} + \frac{2}{1 + \frac{y}{z+x}} + \frac{2}{1 + \frac{z}{x+y}}$ (1) $\frac{4}{2}$ (2) 3
(3) $\frac{4}{2}$ (4) 1

Q. 26. A rectangular tank is 15 m long and 12.5 m deep. If 750 cubic metres of water be drawn off the tank, the level of water in the tank goes down by 2.5 m. Find the total capacity of the tank.

- (1) 7350 cu.m (2) 5350 cu.m (3) 5750 cu.m (4) 3750 cu.m

Q. 27. Find the value of $\log_{125} 3125 - \log_8 128$

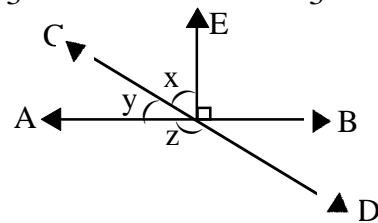
- (1) $-\frac{5}{3}$ (2) -1 (3) $-\frac{2}{3}$ (4) $-\frac{4}{3}$

Q. 28. In the adjoining figure, $m\angle BOE = 90^\circ$

AB and CD are straight lines.

Find x and y if $z = 3x$

- (1) $x = 45^\circ, y = 45^\circ$ (2) $x = 30^\circ, y = 60^\circ$
(3) $x = 40^\circ, y = 50^\circ$ (4) $x = 50^\circ, y = 40^\circ$



Q. 29. If $\tan \theta + \cot \theta = 2$, then find the value of $\tan^2 \theta + \cot^2 \theta = ?$

- (1) 1 (2) 2 (3) 3 (4) 4

Q. 30. The area of a rhombus is 240 sq.cm. and one of its diagonal is 30 cm. Find the perimeter of the rhombus.

- (1) 32 cm (2) 68 cm (3) 16 cm (4) 64 cm

- Q. 31. If A and B are disjoint sets, then $n(A \cup B) = ?$
(1) $n(A) + n(B)$ (2) $n(A)$ (3) $n(B)$ (4) $n(A) - n(B)$
- Q. 32. Compare the following: $\sqrt{3} + \sqrt{2} \square \frac{1}{\sqrt{3} - \sqrt{2}}$
(1) $<$ (2) $>$ (3) $=$ (4) None of these
- Q. 33. Which of the following is not a factor of $x^4 - 2x^3 - 44x^2 + 18x + 315$?
(1) $(x - 3)$ (2) $(x - 7)$ (3) $(x + 1)$ (4) $(x + 5)$
- Q. 34. The sum of two natural numbers is 21 and the sum of their squares is 261. Find the numbers.
(1) $-15, -6$ (2) $15, 6$ (3) $18, 5$ (4) $15, 12$
- Q. 35. At a shooting competition, a marksman receives 50 paise if he hits the mark and has to pay 20 paise if he misses it. He tried 60 shots and was paid Rs.1 and 30 paise. How many times did he miss the mark?
(1) 51 (2) 21 (3) 31 (4) 41
- Q. 36. What is the angle of elevation of the sun when the length of the shadow of a tree is equal to its height ?
(1) 45° (2) 30° (3) 60° (4) 90°
- Q. 37. The area of a trapezium is 918 sq.cm. Its parallel sides are in the ratio 4 : 5. The height of the trapezium is 12 cm. Find the lengths of the parallel sides.
(1) 84cm & 105cm (2) 80cm & 100cm (3) 68cm & 85cm (4) 76cm & 95cm
- Q. 38. If the arms of one angle are respectively parallel to the arms of another angle, then the two angles are :
(1) neither equal nor supplementary (2) not equal but supplementary
(3) equal but not supplementary (4) either equal or supplementary
- Q. 39. Mrs. Joshi's Academy has two classrooms A and B. If 10 students from class A are shifted to class B, the number of students in each class is the same. If 20 students are shifted from class B to class A, then the number of students in class A are double of that in class B. Find the total number of students in Mrs. Joshi's Academy.
(1) 140 (2) 100 (3) 180 (4) 240
- Q. 40. The angle between the hour hand and the minute hand at 1 : 37 is:
(1) 170° (2) 173.5° (3) 167.5° (4) None of these