

## Mathematics

**Date:**  
**Time: 3 hrs**

**Class: VI**  
**M. M: 90**

### General Instructions:

1. Read the question paper carefully and answer legibly.
2. All questions are compulsory.
3. The question paper consist of 31 questions divided into four sections A,B,C and D
4. Section A comprises of 4 question of 1 mark each, section B comprises of 6 questions of 2 marks each, Section C comprises of 10 questions of 3 marks each and Section D comprises of 11 questions of 4 marks each
5. Use of calculators is not permitted.

### Section – A

- Q1. Write the number of faces of a cuboid. 1
- Q2. What will be the HCF of two consecutive odd numbers? 1
- Q3. Give an example of a regular quadrilateral. 1
- Q4. Write the greatest negative integer. 1

### Section – B

- Q5. a) Find the product of the successor and predecessor of 999. 1  
b) How many whole numbers are there between 25 and 49? 1
- Q6. a) What is 8 more than (-9) equal to? 1  
b) Write the successor of (-5) 1
- Q7. Write the number names for:  
a) 765,490,786 1  
b) 24,58,782 1
- Q8. Shikha is rowing a boat due north west. In which direction will she be rowing if she turns it through:  
a) A straight angle 2  
b) A complete angle
- Q9. Find the product of the smallest prime number and smallest composite number. 2
- Q10. Draw a rough diagram of two angles such that they have one ray in common. 2

### Section – C

- Q11. Arrange the following integers in descending order: 3  
-53, 15, 35, -23, 0, -12
- Q12. Using divisibility rules find:  
a) 715689 is divisible by 11 or not. 1.5  
b) 29834 is divisible by 6 or not. 1.5
- Q13. Draw a rough sketch of a pentagon and draw its diagonals. Write the number of the diagonals it has. 3
- Q14. After simplifying put appropriate sign in the blank. 3  
 $(-25) + (-15) \underline{\hspace{1cm}} 25 - (-15)$

- Q15. The number of sheet of paper for making a notebook is 6000. Each sheet makes 12 pages of a notebook. Each notebook has 400 pages. Find how many notebooks can be made from the paper available. 3
- Q16. Find using suitable properties: 3  
 a)  $8 \times 1099 \times 125$   
 b)  $239 \times 98$
- Q17. Three pieces of wood measuring 70 m, 105 m and 175 m long have to be divided into planks of equal length. What is the greatest possible length of each plank? 3
- Q18. Draw a rough diagram for each of the following:  
 a) A closed curve that is not a polygon. 1.5  
 b) An open curve made up entirely of line segments. 1.5
- Q19. a) Look at your watch. How many right angles do the minute hand moves between 8 a.m. to 11.30 a.m.? 2  
 b) Name the type of triangle in two different ways:  $\Delta PQR$  with  $\angle Q = 90^\circ$  and  $PQ = QR$ . 1
- Q20. The sum of two integers is (-45). If one of them is 90, find the other? 3

### Section – D

- Q21. Draw a circle and mark: 4  
 a) its centre      b) its radius      c) a segment      d) a sector      e) an arc
- Q22. a) Using divisibility rules determine whether 55395 is divisible by 12 or not. 3  
 b) I am the smallest number, having three different prime factors. Find me. 1
- Q23. a) Estimate the sum by rounding off to the nearest hundreds:  $2671 + 3321 + 1529$  3  
 b) Write 499 in Roman Numerals. 1
- Q24. Find the smallest 4-digit number which when divided by 6, 15 and 18 leave remainder 5 in each case. 4
- Q25. a) Draw an angle of  $135^\circ$  using protractor. 3  
 b) Write the measure of a right angle. 1
- Q26. a) Use number line to find  $(-7) + 5$  2  
 b) Find the value, without using number line:  $(-34) + (-21) - (-20)$  2
- Q27. Write the number of faces, edges and corners/vertices of a triangular pyramid. What is another name of a triangular pyramid? 4
- Q28. Draw a quadrilateral PINK. Label it properly. State: 4  
 a) Two pairs of opposite angles  
 b) Two pairs of adjacent sides
- Q29. a) Find the HCF of 75, 60 and 100 by long division method. 3  
 b) Express 24 as the sum of two odd primes. 1
- Q30. A businessman started a business of bats and balls. He bought each bat at a cost of Rs. 1875 and a ball at a cost of Rs. 125. If he bought 675 bats and 675 balls. Find the total amount he has spent. He then sold a bat at Rs. 2100 and offered a ball free to every customer. What can you say about this businessman? Describe his quality which you can observe through this act of his. 3
- Q31. a) The town newspaper is published every day. One copy has 12 pages. Everyday 12,280 copies are printed. Find how many total pages are printed every day? 2 + 2  
 b) A vessel contains 3 l and 500 ml of milk. Find in how many glasses, each of 35 ml capacity, can it be filled?

## Answer Key Mathematics

### Section – A

- Q1. Write the number of faces a cuboid has. 1  
6
- Q2. What will be the HCF of two consecutive odd numbers? 1  
1
- Q3. Give an example of a regular quadrilateral. 1  
Square
- Q4. Write the greatest negative integer. 1  
-1

### Section – B

- Q5. a) Find the product of the successor and predecessor of 999. 1  
Successor = 1000, Predecessor = 998 product = 998000 1
- b) How many whole numbers are there between 25 and 49?  
 $49 - 25 = 24, 24 - 1 = 23$
- Q6. a) What is 8 more than (-9) equal to? 1  
 $8 + (-9) = 8 - 9 = -1$  1
- b) Write the successor of (-5)  
-4
- Q7. Write the number names for:  
a) 765,490,786 - Seven hundred sixty five million four hundred ninety thousand seven hundred and eighty six 1  
1
- b) 24,58,765 – twenty four lakh fifty eight thousand seven hundred sixty five
- Q8. Shikha is rowing a boat due north west. In which direction will she be rowing if she turns it through: 2
- a) A straight angle – south east
- b) A complete angle – north west
- Q9. Find the product of the smallest prime number and smallest composite number. 2  
Smallest prime no. = 2      smallest composite number = 4  
Product = 8
- Q10. Draw a rough diagram of two angles such that they have one ray common. 2  
Correct figure (1 mark), correct labelling (1 mark)

### Section – C

- Q11. Arrange the following integers in descending order: 3  
-53, 15, 35, -23, 0, -12  
 $35 > 15 > 0 > -12 > -23 > -53$  (  $\frac{1}{2}$  mark each correct entry)
- Q12. Using divisibility rules find:  
a) 715689 is divisible by 11 or not. 1.5  
Odd places =  $9 + 6 + 1 = 16$  (  $\frac{1}{2}$  )      Even places =  $8 + 5 + 7 = 20$  (  $\frac{1}{2}$  ) 1.5  
Difference =  $20 - 16 = 4$  not divisible by 11. So 715689 is not divisible by 11. (  $\frac{1}{2}$  )
- b) 29834 is divisible by 6 or not.  
29834 is divisible by 2 since it has 4 in its unit's place. (  $\frac{1}{2}$  )  
 $2 + 9 + 8 + 3 + 4 = 26$  which is not divisible by 3 sp 29834 is not divisible by 3. (  $\frac{1}{2}$  )
- Q13. Draw a rough sketch of a pentagon and draw its diagonals. Write the number of the diagonals it has. 3  
Each part 1 mark. No.of diagonals are 5

- Q14. After simplifying put appropriate sign in the box. 3  
 $(-25) + (-15)$  \_\_\_\_\_  $25 - (-15)$   
 $-25 - 15$  \_\_\_\_\_  $25 + 15$  (1 mark)  
 $-40$  \_\_\_\_\_  $40$  (1 mark)  
 $-40 < 40$  (1 mark)
- Q15. The number of sheet of paper for making a notebook is 6000. Each sheet makes 12 pages of a notebook. Each notebook has 400 pages. Find how many notebooks can be made from the paper available. 3  
Number of sheets = 6000  
Number of pages made from 1 sheet =  $12 \left( \frac{1}{2} \right)$   
Number of pages made from 7000 sheets =  $6000 \times 12 = 72000$  ( 1 mark )  
Number of pages in 1 notebook = 400  
Number of notebooks which could be made =  $72000 \div 400 = 180$  ( 1 mark )  
Hence 180 notebooks can be made (  $\frac{1}{2}$  )
- Q16. Find using suitable properties: 3  
a)  $8 \times 1099 \times 125$   
 $8 \times 125 \times 1099 \left( \frac{1}{2} \right) = 1000 \times 1099 \left( \frac{1}{2} \right) = 1099000 \left( \frac{1}{2} \right)$   
b)  $239 \times 98$   
 $239 \times ( 100 - 2 ) \left( \frac{1}{2} \right) = 239 \times 100 - 239 \times 2 \left( \frac{1}{2} \right) = 23900 - 478 = 23422 \left( \frac{1}{2} \right)$
- Q17. Three pieces of wood measuring 70 m, 105 m and 175 m long have to be divided into planks of equal length. What is the greatest possible length of each plank? 3  
Length of the three pieces of wood = 70m, 105m, 175m  
Greatest possible length of each plank = HCF of 70, 105 and 175 (1 mark)  
Working (1 mark) Answer = 35 (  $\frac{1}{2}$  ) Hence statement (  $\frac{1}{2}$  )
- Q18. Draw a rough diagram for each of the following: 1.5  
a) A closed curve that is not a polygon. (1½ marks)  
b) An open curve made up entirely of line segments. (1½ marks) 1.5
- Q19. a) Look at your watch. How many right angles do the minute hand moves between 8 a.m. to 11.30 a.m.? 2  
14 1  
b) Name the type of triangle in two different ways:  $\Delta PQR$  with  $\angle Q = 90^\circ$  and  $PQ = QR$ .  
Isosceles right angled triangle
- Q20. The sum of two integers is (-45). If one of them is 90, find the other? 3  
 $A + 90 = -45$   
 $A = -45 - 90 = -135$

### Section – D

- Q21. Draw a circle and mark: 4  
a) its centre (½) b) its radius (½) c) a segment (1) d) a sector (1) e) an arc (1)
- Q22. a) Determine whether 55395 is divisible by 12 or not using divisibility rules. 3  
To check whether it is divisible by 12 or not we should check whether it is divisible by 3 and 4. 1  
 $5 + 5 + 3 + 9 + 5 = 27$  divisible by 3 so 55395 is divisible by 3  
But 95 is not divisible by 4 hence 55395 is not divisible by 4.  
Hence 55395 is not divisible by 12.
- b) I am the smallest number, having three different prime factors. Find me.  
 $2 \times 3 \times 5 = 30$
- Q23. a) Estimate the sum by rounding off to the nearest hundreds:  $2671 + 3321 + 1529$  3  
 $2700 + 3300 + 1500 = 7500$

- b) Write 499 in Roman Numerals.  
CDXCIX 1
- Q24. Find the smallest 4-digit number which when divided by 6, 15 and 18 leave remainder 5 in each case. 4  
Smallest number divisible by 6, 15 and 18 = LCM of 6, 15 and 18 ( $\frac{1}{2}$ )  
Working (1 mark) answer = 90 ( $\frac{1}{2}$ )  
Smallest 4-digit multiple of 90  
90, 180, 270, 360, 450, 540, 630, 720, 810, 900, 990, 1080. (1 mark)  
Hence  $1080 + 5 = 1085$  is the smallest 4 digit number which gives remainder 5 when divided by 6, 15 and 18. (1 mark)
- Q25. a) Draw an angle of  $135^\circ$  using protractor. 3  
b) Write the measure of a right angle.  $180^\circ$  1
- Q26. a) Use number line to find  $(-7) + 5 = -2$  2  
b) Find without using number line:  $(-34) + (-21) - (-20)$  2  
 $-34 - 21 + 20 = -55 + 20 = -35$
- Q27. Write the number of faces, edges and corners/vertices of a triangular pyramid. What is another name of a triangular pyramid? 4  
Faces = 4, edges = 6 = vertices = 4 triangular pyramid. (1 mark each)
- Q28. Draw a quadrilateral PINK. Label it properly. State: 4  
a) Two pairs of opposite angles -  $\angle P$  and  $\angle N$  ;  $\angle I$  and  $\angle K$  (1 mark)  
b) Two pairs of adjacent sides – PI and IN ; PK and NK
- Q29. a) Find the HCF of 75, 60 and 100 by long division method. 3  
Working ( 2 marks), Answer = 5 (1 mark) 1  
b) Express 24 as the sum of two odd primes.  
 $19 + 5$
- Q30. A businessman started a business of bats and balls. He bought each bat at a cost of Rs. 1875 and a ball at a cost of Rs. 125. If he bought 675 bats and 675 balls. Find the total amount he has spent. He then sold a bat at Rs. 2100 and offered a ball free to every customer. What can you say about this businessman? Describe his quality which you can observe through this act of his. 3  
1  
Statements ( $\frac{1}{2}$ )  
Total bill =  $675 \times 1875 + 675 \times 125$  ( $\frac{1}{2}$  mark)  
 $675 \times (1875 + 125)$  (1 mark) =  $675 \times 2000 = 1350000$  (1 mark)  
Value based (1 mark)
- Q31. a) The town newspaper is published every day. One copy has 12 pages. Everyday 12,280 copies are printed. Find how many total pages are printed every day? 2 + 2  
No.of pages in 1 copy = 15  
No.of copies = 12280  
Total no.of pages =  $12180 \times 15 = 184200$   
b) A vessel contains 3 l and 500 ml of milk. Find in how many glasses, each of 35 ml capacity, can it be filled?  
Quantity of milk =  $3000 + 500 = 3500$  ml  
Quantity of glass = 35 ml  
No.of glasses =  $3500 \div 35 = \text{Quotient } 100$