

IMO CLASS 6

Total Questions: 50

Time: 1hr.

Section – 1 : Verbal and Non-Verbal Reasoning.

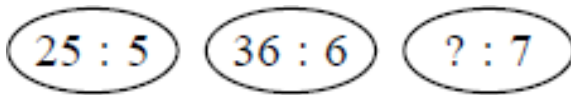
Section – 2 : Knowing our Numbers, Whole Numbers, Playing with Numbers, Basic Geometrical Ideas, Understanding Elementary Shapes, Integers, Fractions, Decimals, Data Handling, Mensuration, Algebra, Ratio and Proportion, Symmetry, Practical Geometry.

Section – 3 : Syllabus as per Section – 2.

Section – 4 : Higher Order Thinking Questions - Syllabus as per Section – 2.

SECTION 01 LOGICAL REASONING

1. Find the missing number, if same rule is followed in all the three figures.



(A) 49

(B) 37

(C) 50

(D) 94

2. If FORGE is written as FPTJI, how will CULPRIT be written?

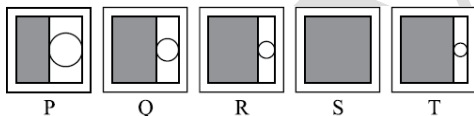
(A) CSJNPGR

(B) CVMQSTU

(C) CVNSVNZ

(D) CXOSULW

3. Identify the two figures which are out of position/place and requires interchanging of position to put the entire series in order.



(A) Q and R

(B) S and T

(C) R and P

(D) P and S

4. Count the number of cubes in the given figure.



(A) 3

(B) 4

(C) 5

(D) None of these

5. Select odd one out.

(A) Lion

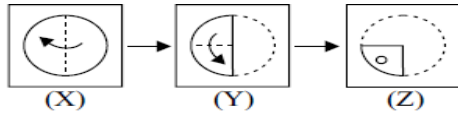
(B) Cat

(C) Rabbit

(D) Fox

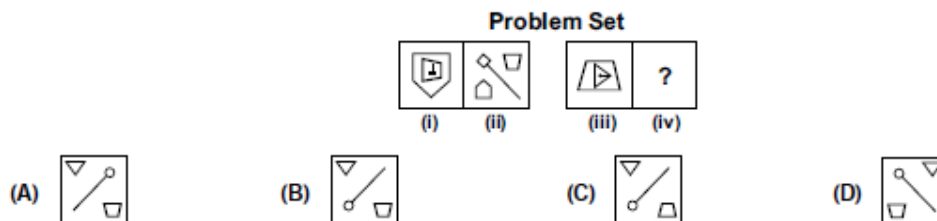
6. A set of three figures X, Y and Z showing a sequence of folding of a piece of paper is given. Fig (Z) shows the manner in which the folded paper has been cut.

Select the option which shows the unfolded form of Fig (Z).



- (A)
- (B)
- (C)
- (D)

7. The given question consists of two sets of figures, Figures (i), (ii), (iii) and (iv) constitute the Problem set. There is a definite relationship between figure (i) and (ii). Establish a similar relationship between figures (iii) and (iv) by selecting a suitable figure from the options that would replace (?) in figure (iv).



8. If the first three letters of the word 'ANTHROPOLOGISTS' are written in reverse order, followed by the next four letters written in reverse order, followed by next eight letters written in reverse order, which letter will come exactly in the middle?

(A) T (B) H (C) S (D) O

9. Arrange the following words in the sequence in which they occur in the dictionary.

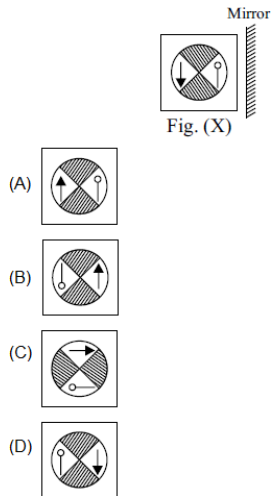
1. Select 2. Seldom 3. Send 4. Selfish 5. Seller

- (A) 1, 2, 4, 5, 3 (B) 2, 1, 5, 4, 3
- (C) 2, 1, 4, 5, 3 (D) 2, 5, 4, 1, 3

10. If in the word VITREOUS first all the consonants are arranged alphabetically, and then all the vowels are arranged alphabetically, and then all the vowels are arranged alphabetically, then which letter will be the third to the right of fourth letter from the left?

(A) R (B) O (C) I (D) U

11. Select the correct mirror image of Fig. (X).



12. In the given question there are four figures (A), (B), (C) and (D). Out of these four figures, three are similar in certain way. However, one figure is not like the other three. Choose the figure which is different from the rest.



13. If $687 + 509 = 560897$, then $619 + 703 = ?$

- (A) 760931 (B) 760891 (C) 760139 (D) 760193

14. Using the below table, identify the correct expression.

P	Q	R	S
+	-	÷	×

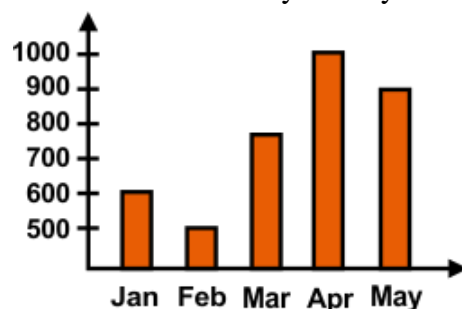
- (A) $17 Q 8 S 9 P 18 R 2 = 46$ (B) $18 S 30 R 6 Q 5 P 0 = 85$
 (C) $27 Q 10 R 5 S 4 P 3 = -32$ (D) All of these

15. Mohit left for his office in his car. He drove 12 km towards North and then 10 km towards West. He then turned to the South and covered 4 km. Further, he turned to the East and moved 8 km. Finally, he turned right and drove 8 km. How far and in which direction is he from his starting point?

- (A) 2 km, West (B) 2 km, East (C) 4 km, West (D) 2 km, North

SECTION02 MATHEMATICAL REASONING

16. The bar graph shows the sale of chocolates in 5 months from January to May. What is the total sale of chocolates from January to May?

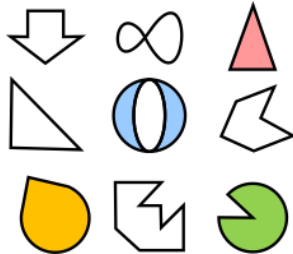


- a. 3000 b. 3800
c. 4000 d. 4500

17. Fill in the blank:

A quadrilateral with only one pair of opposite side parallel is called a _____

- a. Parallelogram
- b. Trapezium
- c. Rhombus
- d. Kite



18. How many of the following figures have exactly one line of symmetry?

- a. 5
- b. 6
- c. 7
- d. 8

19. What will come in place of "?"

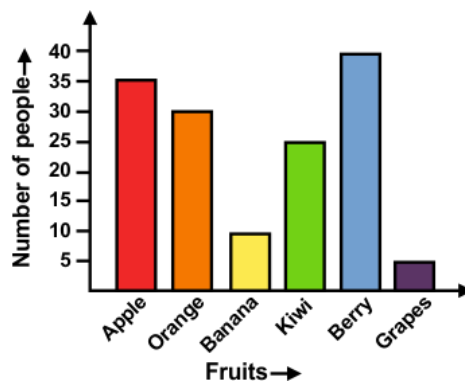
15	17	13	16	11	14
102	19	94	18	?	17

- a. 72
- b. 84
- c. 96
- d. 112

20. The portion of a circle bounded by a chord and the arc subtended by the chord is called _____ of a circle.

- a. Sector
- b. Segment
- c. Radius
- d. Diameter

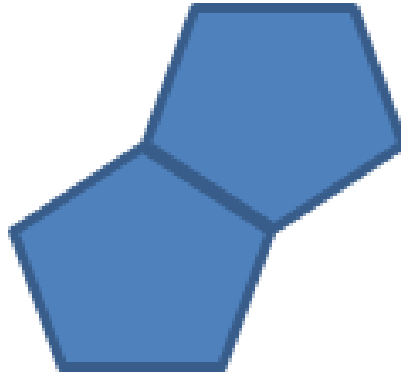
21. The given graph shows the fruit preferences of people.



How many more people prefer oranges over bananas?

- a. 5
- b. 10
- c. 15
- d. 20

22. Two regular pentagons of side 5 cm are joined together as shown in the figure. Find the perimeter of the new figure:



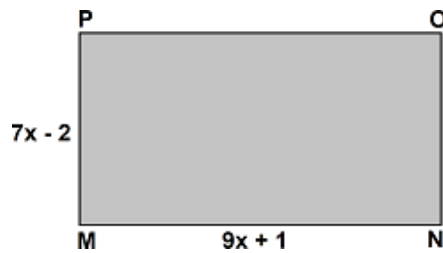
- a. 35 cm
b. 40 cm
c. 45 cm
d. 50 cm
23. The ratio of two numbers is 3:7. If the sum of the numbers is 700, find the two numbers.
- a. 210, 490
b. 270, 490
c. 110, 490
d. 110, 650
24. Find the value of x:
 $11 : 13 :: x : 26$
- a. 20
b. 21
c. 22
d. 24
25. A car covers a distance of 39.25 km using 2.5 L of petrol. How much distance will it cover in 1L of petrol?
- a. 12.4 km
b. 15.7 km
c. 17.5 km
d. 19.25 km
26. What is the product of $\frac{8}{11}$ and the additive inverse of $\frac{44}{2}$?
- a. -16
b. 28
c. -34
d. 16
27. In a triangle PQR, if $PQ + QR = 10$ cm, $QR + PR = 12$ cm and $PR + PQ = 16$ cm, then the perimeter of the triangle is:
- a. 19 cm
b. 17 cm
c. 28 cm
d. 22 cm
28. Fill in the blank:
The number of diagonals in a heptagon is_____.
- a. 12
b. 7
c. 9
d. 14

29. Choose the correct option:

The HCF and LCM of two numbers are 84 and 21, respectively. If the ratio of the two numbers is 1:4, then the larger of the two numbers is:

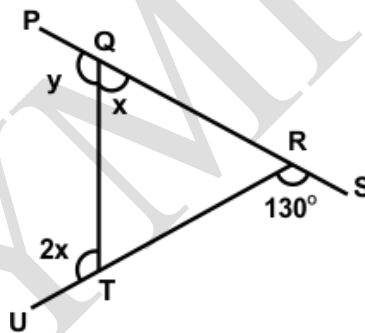
- | | |
|-------|--------|
| a. 12 | b. 48 |
| c. 84 | d. 108 |

30. In the given rectangle MNOP, if length is decreased by $3x$, then find the new perimeter.



- | | |
|----------------------|----------------------|
| a. $(32x - 2)$ units | b. $(30x - 2)$ units |
| c. $(26x - 2)$ units | d. $(28x - 2)$ units |

31. In the figure, PQRS and RTU are straight lines. The value of 'y' is:



- | | |
|----------------|----------------|
| a. 100° | b. 130° |
| c. 115° | d. 145° |

32. If A, B, C, and D represent \times , \div , $+$ and $-$, respectively, then find the value of:

90B3A5D3C9

- | | |
|--------|-------|
| a. 12 | b. 24 |
| c. 156 | d. 30 |

33. What must be added to 203 to get a number whose digits are reversed from the given number?

- | | |
|--------|-------|
| a. 100 | b. 99 |
| c. 89 | d. 77 |

34. Which of the following is not a pair of twin primes between 10 and 40?

- | | |
|-------------|-------------|
| a. (11, 13) | b. (21, 23) |
| c. (17, 19) | d. (29, 31) |



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35. If 64 and 48 are divisible by 4 then what is the difference of the given numbers so that it is divisible by 4?

- a. 12
- b. 18
- c. 20
- d. 16

SECTION 03 EVERYDAY MATHEMATICS

36. Which of the following will not be the statement for the algebraic expression $20z$?

- a. The product of z and 20
- b. z multiplied by 20
- c. 20 times z
- d. 20 divided by z

37. George travels from place A to place B and Peter travels from place B to place A. George travels one-third of the distance and Peter travels one-fourth of the distance. The distance travelled by George is one kilometre more than the distance travelled by Peter. What is the distance between place A and place B? (In km)

- a. 9
- b. 10
- c. 12
- d. 18

38. A borrows \$800 at the rate of 12% per annum simple interest and B borrows \$910 at the rate of 10% per annum simple interest. In how many years will their debts be equal?

- a. 18 years
- b. 20 years
- c. 22 years
- d. 24 years

39. The average marks in Mathematics for 5 students were found to be 50. Later it was discovered that in the case of one student, the mark 48 was misread as 84. The correct average is:

- a. 40.2
- b. 40.8
- c. 42.8
- d. 48.2

40. It takes 90 minutes to wash 20 vehicles at a car wash. At this rate, how many minutes does it take to wash 5 vehicles?

- a. 22 minutes
- b. 14 minutes
- c. $22\frac{1}{2}$ minutes
- d. $7\frac{1}{2}$ minutes

41. If the sum of two numbers is 55 and the H.C.F. and L.C.M. of these numbers are 5 and 120 respectively, then what is the sum of the reciprocals of these numbers?

- a. $55/601$
- b. $601/55$
- c. $11/120$
- d. $120/11$

42. $1/10$ of a rod is coloured red, $1/20$ orange, $1/30$ yellow, $1/40$ green, $1/50$ blue, $1/60$ black and the rest violet. If the length of the violet portion is 12.08 m, then what is the length of the rod?

- a. 16 m
- b. 18 m
- c. 20 m
- d. 30 m



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43. The present age of a father is 3 years more than 3 times the age of his son. Three years hence, the father's age will be 10 years more than twice than age of the son. The father's present age is:

- a. 33 years
- b. 39 years
- c. 45 years
- d. 40 years

44. Two numbers are such that the ratio between them is 3:4. If each is increased by 9, the ratio between the new numbers formed is 6:7. Find the original numbers.

- a. 12, 14
- b. 18, 21
- c. 24, 28
- d. 9, 12

45. Annual incomes of 'A' and 'B' are in the ratio 4:5, respectively. If the income of 'A' increases by 25% and that of 'B' increases by 20%, then what is the new ratio of their incomes respectively?

- a. 5:8
- b. 4:7
- c. 5:6
- d. 6:5

SECTION04 ACHIEVER SECTION

46. If $63.3605 = 6A + 3/B + 3C + 6/D + 5E$, then what is the value of $4A + 7B + 6C + D + 3E$.

- a. 47.603
- b. 4.7603
- c. 147.6003
- d. 47.6003

47. Consider the following quotients:

- I. 368.39 divided by 17
- II. 170.50 divided by 62
- III. 875.65 divided by 83

Their correct sequence in decreasing order is:

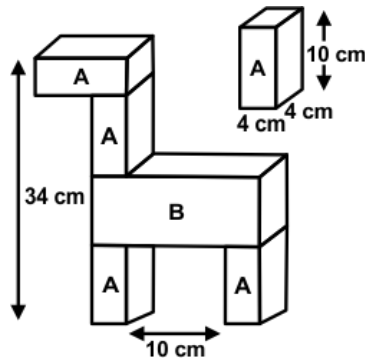
- a. I, III, II
- b. II, I, III
- c. II, III, I
- d. III, I, II

48. Simplify:

$$(87.4 \times 6.5 - 0.1) / (28.4 \times 9.8 + 5.68)$$

- a. $1/2$
- b. 3
- c. 2
- d. 4

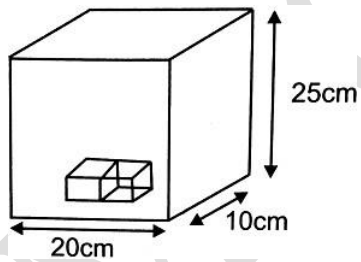
49. A few blocks of wood are used to make the shape of a giraffe as shown below. What is the



volume of wood used to make the giraffe?

- a. 640 cm^2
b. 1260 cm^2
c. 1360 cm^2
d. 1400 cm^2

50. A tank with two identical metal cubes in it was filled with water to the brim. When the cubes are removed the water level dropped to 80% of its height. The edge of one cube is:



- a. 15 cm
b. 25 cm
c. 10 cm
d. 8 cm