

SOF INTERNATIONAL MATHEMATICS OLYMPIAD

GUIDELINES FOR THE CANDIDATE

Total Questions : 50 | Time: 1 hr.

- You will get additional ten minutes to fill up information about yourself on the OMR Sheet, before the start of the exam.
- Write your **Name, School Code, Class, Section, Roll No.** and **Mobile Number** clearly on the **OMR Sheet** and do not forget to sign it. We will share your marks / result and other information related to SOF exams on your mobile number.
- The Question Paper comprises four sections:

Logical Reasoning (15 Questions), **Mathematical Reasoning** (20 Questions), **Everyday Mathematics** (10 Questions) and **Achievers Section** (5 Questions)

Each question in Achievers Section carries 3 marks, whereas all other questions carry one mark each.

- All questions are compulsory. There is no negative marking. Use of calculator is not permitted.
- There is only ONE correct answer. Choose only ONE option for an answer.
- To mark your choice of answers by darkening the circles on the OMR Sheet, use **HB Pencil** or **Blue / Black ball point pen** only. E.g.

Q.16: Rahul bought 4 kg 90 g of apples, 2 kg 60 g of grapes and 5 kg 300 g of mangoes. The total weight of all the fruits he bought is_____.

- A. 11.450 kg B. 11.000 kg C. 11.350 kg D. 11.250 kg

As the correct answer is option A, you must darken the circle corresponding to option A on the OMR Sheet.



- Rough work should be done in the blank space provided in the booklet.
- Return the OMR Sheet to the invigilator at the end of the exam.
- Please fill in your personal details in the space provided on this page before attempting the paper.

Name:.....

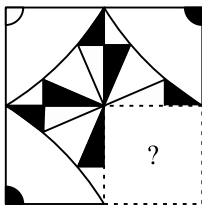
Section:..... SOF Olympiad Roll No.:..... Contact No.:.....

LOGICAL REASONING

1. Mohit and Sameer like to play cricket. Sameer and Tanuj like to play football. Mohit and Tanuj like to play tennis. Who among the following likes cricket and tennis only?
- A. Mohit
B. Sameer
C. Tanuj
D. Can't be determined

2. Arrange the given words as they occur in a dictionary and choose the correct sequence.
1. Gravity 2. Grave
3. Green 4. Greedy
5. Greasy
- A. 1, 5, 4, 3, 2
B. 1, 5, 4, 2, 3
C. 2, 1, 5, 4, 3
D. 2, 1, 4, 5, 3

3. Which of the following figures will complete the pattern in the given figure?



- A. B. C. D.

4. Which of the following is the next term in the given series?
15, 90, 165, 240, 315, ___?
- A. 350
B. 480
C. 190
D. 390

5. Pallavi is eleventh from the left end in a row of girls and Kirti is fourteenth from the right. If there are 42 girls in the row, then how many girls are there between Pallavi and Kirti?

- A. 15
B. 17
C. 16
D. Data inadequate

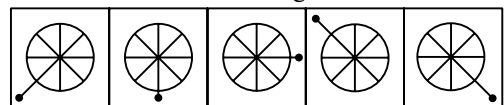
6. Select the water image of the given combination of letters.

C O M B I N E

- A. C O M B N I E
B. C O W B I I E
C. C O B W I I E
D. C O B W I E I

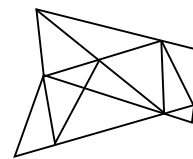
7. Select a figure from the options which will continue the same series as established by the five Problem Figures.

Problem Figures



- A. B. C. D.

8. How many minimum number of straight lines are required to make the given figure?



- A. 13
B. 15
C. 14
D. None of these

9. Find the combination of numbers so that letters are arranged accordingly to form a meaningful word.

L E C N I P

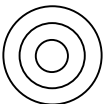



1 2 3 4 5 6

- A. 4, 1, 5, 2, 3, 6
B. 3, 4, 5, 1, 2, 6
C. 6, 2, 4, 3, 5, 1
D. 2, 3, 6, 5, 1, 4

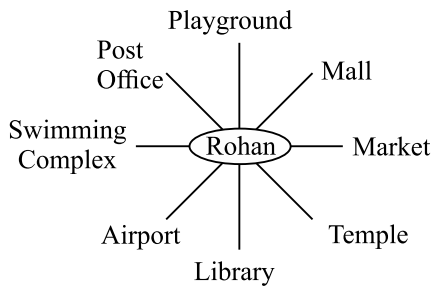
10. In a certain code language, 'MARKET' is written as 'TEKMAR'. How will 'FIGURE' be written in that code language?

- A. UREFIG
- B. UREGIF
- C. ERUGIF
- D. ERUFIG

11. Which of the following Venn diagrams best depicts the relationship amongst 'Desk, Chair and Wooden objects'?

- A. 
- B. 
- C. 
- D. 

12. Rohan is facing the post office. He turn $\frac{5}{8}$ in clockwise direction and $\frac{1}{4}$ in anticlockwise direction. Which of the following is he facing now?



- A. Library
- B. Mall
- C. Market
- D. Temple

13. If the following numbers are arranged in descending order, then which will be the middle digit of the middle number?

985, 718, 869, 975, 759, 679, 796





- A. 6
- B. 8
- C. 9
- D. 7

14. Find the odd one out.

- A. FILO
- B. GKOS
- C. BEHK
- D. MPSV

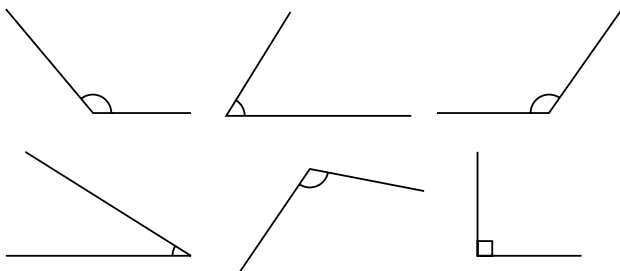
15. Select a figure from the options in which the given figure is exactly embedded as one of its parts.



- A. 
- B. 
- C. 
- D. 

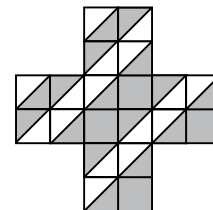
MATHEMATICAL REASONING

16. How many of the following angles are obtuse?



- A. 1
- B. 2
- C. 3
- D. 4

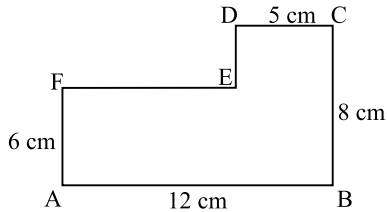
17. What fraction of the given figure is shaded?



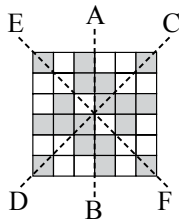
- A. 11/20
- B. 2/5
- C. 7/20
- D. 3/5

18. A number is made up of 4 digits. The digit at thousands place is third multiple of 2. The digit at the hundreds place is half the digit at ones place. The digit at tens place is 1 more than the digit at ones place. If the digit at tens place is 3, then what is the number?
- A. 6432
B. 6423
C. 6132
D. 6234

19. Find the perimeter of the given figure (not drawn to scale).



- A. 36 cm
B. 32 cm
C. 40 cm
D. 45 cm
20. Which of the following represents a line of symmetry for the given figure?



- A. AB
B. CD
C. EF
D. None of these
21. Number name for 78,104,620 is
- A. Seven eight one hundred four thousand six hundred twenty.
B. Seventy eight million one hundred four thousand six hundred two.
C. Seventy eight million one hundred four thousand six hundred twenty.
D. Seventy eight million fourteen thousand six hundred twenty.

22. What is the remainder when 432873 is divided by 9?
- A. 0
B. 2
C. 4
D. 1

23. Find the value of 123 thousands + 48 thousands + 14 hundreds + 65 tens + 6 ones.
- A. 172436
B. 184376
C. 173056
D. 173456

24. Arrange the following fractions in ascending order.

$$\frac{4}{3}, \frac{4}{7}, \frac{9}{8}, 1\frac{1}{6}$$












- A. $\frac{4}{3}, 1\frac{1}{6}, \frac{9}{8}, \frac{4}{7}$
B. $\frac{4}{7}, \frac{9}{8}, 1\frac{1}{6}, \frac{4}{3}$
C. $\frac{9}{8}, 1\frac{1}{6}, \frac{4}{3}, \frac{4}{7}$
D. $1\frac{1}{6}, \frac{9}{8}, \frac{4}{3}, \frac{4}{7}$
25. $\frac{3}{5}$ of a number is 130 more than $\frac{1}{6}$ of the same number. What is the number?
- A. 325
B. 300
C. 225
D. 200

26. In the addition of 23.125 and 35.624, find the place value of digit '7'.
- A. 0.07
B. 0.70
C. 7
D. 0.37

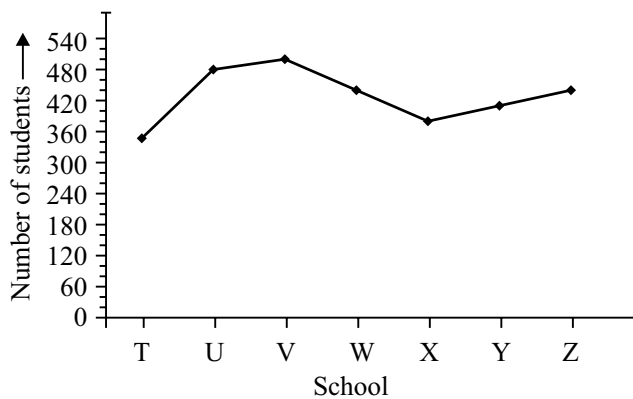
27. What must be added to 87601 to make it one million?
- A. 901239
B. 912399
C. 901249
D. 902391

28. What is the product of the 8th multiple of 13 and the 6th multiple of 4?
- A. 2028
B. 3248
C. 2426
D. 2496

29. The perimeter of a square is 52 cm. Find the area of the square.
- A. 380 sq. cm
 B. 240 sq. cm
 C. 144 sq. cm
 D. 169 sq. cm

30. If  +  +  = 11,
 +  +  +  = 10 and
 +  +  = 9, then find the value of .
- A. 4
 B. 1
 C. 3
 D. 5

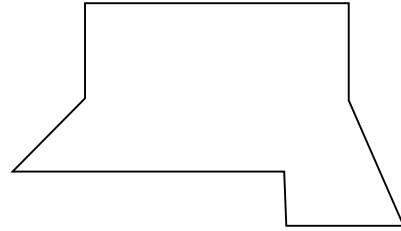
31. The line graph shows the number of students participated in sports of 7 different schools. Study the graph carefully and answer the following question.



How many less students participated from school U than school W and Z altogether?

- A. 420
 B. 440
 C. 380
 D. None of these
37. Vijay sold 786 cupcakes in each week. How many cupcakes did he sell in 48 weeks?

32. Select the incorrect statement on the basis of the given figure.



- A. There are 8 sides.
 B. There are only two pairs of parallel lines.
 C. There are three right angles inside the figure.
 D. There are 2 acute angles inside the figure.
33. How many of the given alphabets have at least one line of symmetry?

VOTING

- A. 3
 B. 5
 C. 4
 D. None of these
34. Find the sum of all the factors of 24 that are multiples of 4.
- A. 48
 B. 56
 C. 60
 D. 54
35. Find the value of MMDCCXL – MMCDLX.
- A. XCIX
 B. LXII
 C. XC
 D. CCLXXX

EVERYDAY MATHEMATICS

36. Ritu knits 848 stitches. If there are 32 stitches in each row of knitting, then how many complete rows have been knitted?
- A. 26
 B. 28
 C. 29
 D. 25
37. Vijay sold 786 cupcakes in each week. How many cupcakes did he sell in 48 weeks?


- A. 37728
 B. 48880
 C. 45324
 D. 43524
38. Varun cycled 63 km 322 m in a week. If he cycled the same distance everyday, then find the distance covered by him in one day.
- A. 6 km 49 m
 B. 4 km 69 m
 C. 9 km 46 m
 D. 9 km 460 m










39. In a farm, 756 trees were planted in 18 rows. If the same number of trees were planted in each row, then how many trees are there in each row?
- A. 32
B. 34
C. 42
D. 44
-
40. Anamika's pocket money is ₹ 72.50 per day. She spends ₹ 25.25 per day and saves the rest. How much money will she save in the month of August?
- A. ₹ 975.85
B. ₹ 957.90
C. ₹ 1464.75
D. ₹ 1524.50
-
41. Kritika scored $\frac{13}{20}$ in Science test, $\frac{21}{25}$ in Maths and $\frac{24}{30}$ in English. In which subject she got the highest percentage?
- A. Science
B. English
C. Maths
D. She got same percentage in all subjects
-
42. A box full of fruits weighs $45\frac{1}{2}$ kg. If the empty box weighs $7\frac{2}{5}$ kg, then find the weight of the fruits in the box.
- A. $38\frac{1}{10}$ kg
B. $41\frac{1}{10}$ kg
C. $34\frac{3}{10}$ kg
D. None of these
-
43. Ravita has $1\frac{1}{2}$ m of ribbon and Palak has $4\frac{1}{3}$ m of ribbon. What is the total length of ribbons they both have together?
- A. $2\frac{5}{6}$ m
B. $5\frac{5}{6}$ m
C. $6\frac{2}{5}$ m
D. $2\frac{1}{6}$ m
-
44. There were 128 people in a party. $\frac{3}{8}$ of them were men. How many women are there in the party?
- A. 84
B. 92
C. 80
D. 78
-
45. Ms Verma bought $3\frac{1}{2}$ litres of sunflower oil on Monday and $4\frac{1}{2}$ litres on Tuesday. How many litres of oil did she buy on the two days?
- A. $8\frac{1}{2}$ litres
B. $7\frac{1}{3}$ litres
C. 8 litres
D. $8\frac{1}{3}$ litres

ACHIEVERS SECTION

46. There are 120 students in a class. $\left(\frac{3}{8}\right)$ of them are boys, of which $\left(\frac{1}{3}\right)$ wear glasses. $\left(\frac{2}{5}\right)$ of the girls wear glasses. How many students wear glasses?
- A. 54
B. 30
C. 75
D. 45
47. Read the following statements carefully.
- P : The smallest number that can be divided by the given numbers without leaving any remainder is called the least common multiple.
- Q : The greatest number which divides two or more numbers exactly without leaving any remainder is called the highest common factor.
- Which of the following options hold?
- A. Only P is true
B. Only Q is true

- C. Both P and Q are true
 D. Neither P nor Q is true

48. The value of  is _____.

			28
			32
			32
42	30	20	

- A. 2
 B. 12
 C. 10
 D. 15

49. Anamika rented a cycle from 5:45 p.m. to 8 : 20 p.m.
 How much did she have to pay?

Rates	
First hour	₹ 20.25
Every additional half an hour or part thereof	₹ 4.35

- A. ₹ 44.40
 B. ₹ 25.40
 C. ₹ 32.45
 D. ₹ 37.65

50. Find the value of $\frac{Q \times R - S + P}{3}$.

$$\begin{array}{r}
 2[R]33[S] \\
 128 \overline{) 3754638} \\
 \underline{- 25[P]} \\
 1194 \\
 \underline{- 1152} \\
 426 \\
 \underline{- [Q]84} \\
 423 \\
 \underline{- 384} \\
 398 \\
 \underline{- 384} \\
 14
 \end{array}$$

- A. 9
 B. 4
 C. 3
 D. 10