

**SOF INTERNATIONAL  
MATHEMATICS OLYMPIAD  
2022-23**

**DO NOT OPEN THIS BOOKLET UNTIL ASKED TO DO SO**

Total Questions: 35 | Time: 1 hr.

### Guidelines for the Candidate

1. You will get additional ten minutes to fill up information about yourself on the OMR Sheet, before the start of the exam.
2. Write your **Name, School Code, Class, 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.
3. The Question Paper comprises four sections:  
**Logical Reasoning** (10 Questions), **Mathematical Reasoning** (10 Questions), **Everyday Mathematics** (10 Questions) and **Achievers Section** (5 Questions)

Each question in Achievers Section carries 2 marks, whereas all other questions carry one mark each.

4. All questions are compulsory. There is no negative marking. Use of calculator is not permitted.
5. There is only ONE correct answer. Choose only ONE option for an answer.
6. 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: Sonia had 80 sweets. She gave 15 sweets to Danish and 15 sweets to Megha. How many sweets are left with her?  
A. 50      B. 30      C. 60      D. 40  
As the correct answer is option A, you must darken the circle corresponding to option A on the OMR Sheet.
7. Rough work should be done in the blank space provided in the booklet.
8. Return the OMR Sheet to the invigilator at the end of the exam.
9. Please fill in your personal details in the space provided on this page before attempting the paper.

16. ● (B) (C) (D)



Name:.....

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

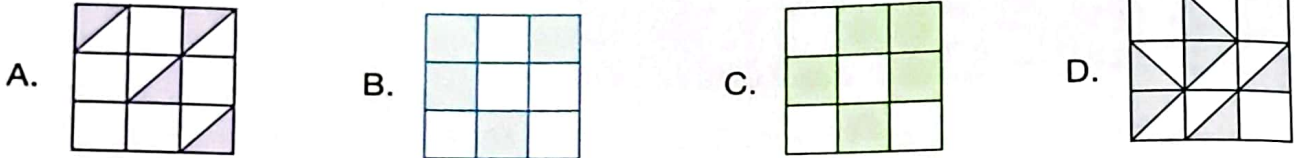
# LOGICAL REASONING

1. Which of the following options will complete the given number pattern?



- A. 463                      B. 453                      C. 553                      D. 454

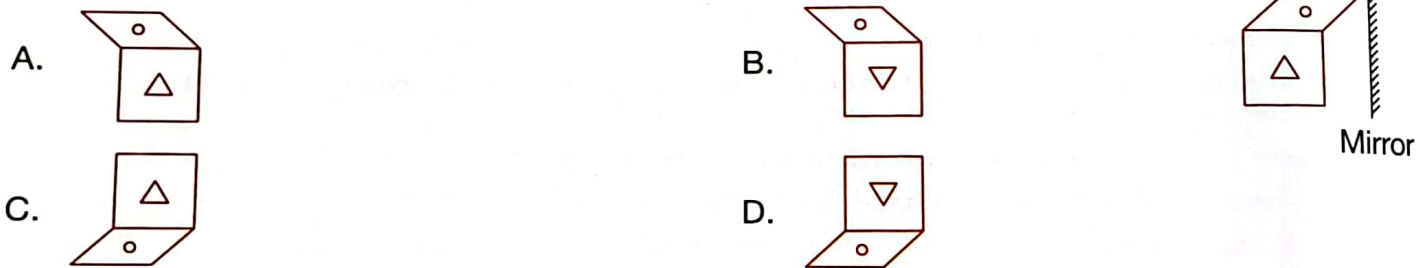
2. Which of the following figures has at least one line of symmetry?



3. If in a certain code language, 'DELHI' is written as '#\$@©%' and 'MODE' is written as '\*!#\$', then how will 'HOME' be written in the same code language?

- A. ©\*!\$                      B. @#\$!                      C. @!\*\$                      D. ©!\*\$

4. Select the CORRECT mirror image of the given figure.



5. Veer is standing in a queue. If he is 6<sup>th</sup> from the front and 12<sup>th</sup> from the behind, then how many people are standing in the queue?

- A. 20                      B. 17                      C. 19                      D. 18

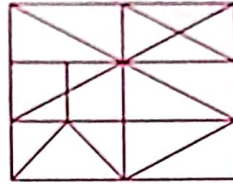
6. Find the combination of numbers so that the given letters are arranged accordingly to form a meaningful English word.


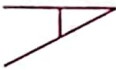

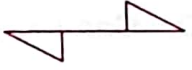
K A T R M E  
1 2 3 4 5 6

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

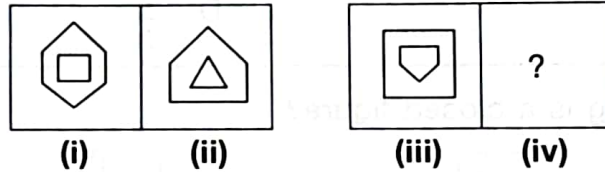
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SPACE FOR ROUGH WORK

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



- A.  B.  C.  D. 

8. There is a certain relationship between figures (i) and (ii). Establish a similar relationship between figures (iii) and (iv) by selecting a suitable figure from the options that would replace the (?) in figure (iv).



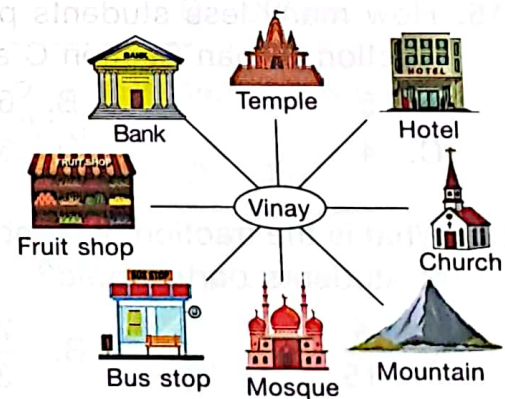
- A.  B.  C.  D. 

9. Arun's yoga class starts from 7<sup>th</sup> August 20XX and finishes on 23<sup>rd</sup> August 20XX. If every Saturday is a holiday, then for how many days does he go to yoga class in that month?

AUGUST 20XX						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

- A. 14  
B. 13  
C. 15  
D. 16

10. Vinay is facing towards fruit shop. If he makes  $\frac{1}{4}$  turn clockwise and then  $\frac{1}{2}$  turn anti-clockwise, then he will be facing towards \_\_\_\_\_.



- A. Temple  
B. Church  
C. Bus stop  
D. Mosque

SPACE FOR ROUGH WORK

# MATHEMATICAL REASONING

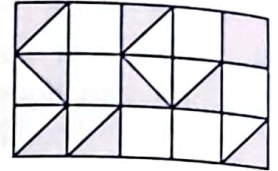
11. Who among the following holds the greatest value?

- A. Q
- B. P
- C. R
- D. Can't say



12. What fraction of the given figure is unshaded?

- A.  $\frac{4}{7}$
- B.  $\frac{3}{5}$
- C.  $\frac{1}{3}$
- D.  $\frac{2}{3}$



13. Which of the following is a closed figure?

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

14. Compare and fill the box using  $>$ ,  $<$  or  $=$ .

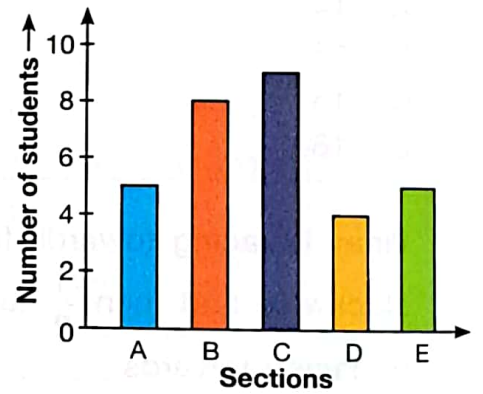
$$15 \text{ kg } 105 \text{ g} + 7 \text{ kg } 900 \text{ g} \quad \boxed{\phantom{000}} \quad 18 \text{ kg } 700 \text{ g} + 950 \text{ g}$$

- A.  $>$
- B.  $<$
- C.  $=$
- D. Can't say

**Direction (15-16) :** The given bar graph shows the number of students who took part in a relay race from different sections of Class-IV. Study the graph carefully and answer the following questions.

15. How many less students participated in relay race from Section B than Section C and D together?

- A. 5
- B. 6
- C. 4
- D. 3



16. What is the fraction of number of students participated from Section E to the total number of students participated?

- A.  $\frac{4}{15}$
- B.  $\frac{26}{31}$
- C.  $\frac{5}{31}$
- D. None of these

-----  
SPACE FOR ROUGH WORK

17. The sum of 5462 and 3258 when each number is rounded off to the nearest hundreds is \_\_\_\_\_.

A. 9010

B. 8800

C. 8700

D. 8500

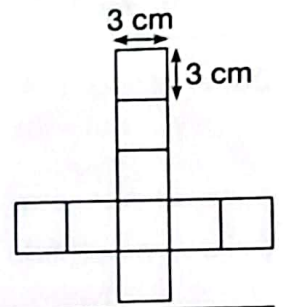
18. Find the perimeter of the given figure.

A. 50 cm

B. 45 cm

C. 40 cm

D. 60 cm



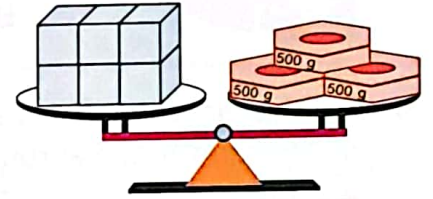
19. The weight of each of the 6 identical cubes is \_\_\_\_\_.

A. 250 g

B. 350 g

C. 450 g

D. 500 g



20. In which of the following options, 7 is not at hundreds place?

A. 2790

B. 3578

C. 4789

D. 5785

## EVERYDAY MATHEMATICS

21. Shreya bought 86 kg 475 g sugar and Puneet bought 79 kg 825 g sugar. Who bought less sugar and by how much?

A. Shreya, 6 kg 650 g

B. Puneet, 6 kg 650 g

C. Shreya, 7 kg 350 g

D. Puneet, 7 kg 350 g

22. A city has a population of 92582. Round off the population to the nearest hundreds.

A. 92500

B. 92600

C. 93500

D. 92580

23. Kanika has 4 photo albums. In each album, there are 10 pages. If there are 5 photos on each page, then how many total photos are there in all albums?

A. 200

B. 150

C. 100

D. 180

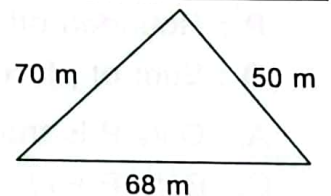
24. Prateek walked around a triangular park whose sides are 50 m, 68 m and 70 m. Find the total distance covered by him.

A. 180 m

B. 188 m

C. 168 m

D. 175 m



SPACE FOR ROUGH WORK

25. Aman went on a 15 days trip. He spent 7 days in Manali and rest of the days in Shimla. What fraction of his trip did he spend in Shimla?
- A.  $\frac{8}{7}$                       B.  $\frac{7}{8}$                       C.  $\frac{8}{15}$                       D.  $\frac{7}{15}$
- 
26. A string is 40 m long. A piece measuring 800 cm is cut from it. The remaining piece is then cut into 10 equal pieces. Find the length of each piece.
- A. 320 cm                      B. 350 cm                      C. 400 cm                      D. 410 cm
- 
27. Priya had 500 stickers. She gave 150 stickers to her brother. What fraction of total stickers is left with her?
- A.  $\frac{5}{7}$                       B.  $\frac{3}{10}$                       C.  $\frac{7}{10}$                       D.  $\frac{7}{9}$
- 
28. 4105 children visited the zoo in the month of January and 2534 children visited the zoo in the month of February. How many total children visited the zoo in both the months?
- A. 6548                      B. 6639                      C. 6670                      D. 6234
- 
29. Preeti bought a 4-sided cloth, whose each side is equal in measure. What could be the shape of the cloth?
- A. Square                      B. Rectangle  
C. Triangle                      D. None of these
- 
30. Sanvi has the digits as shown here. What is the greatest 4-digit number can be formed with the given digits (using each digit only once)?
- A. 5210  
B. 2150  
C. 1025  
D. 1052



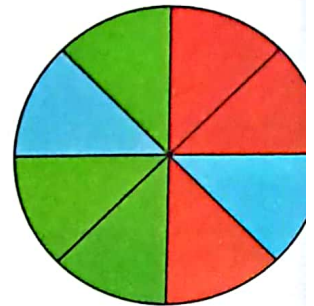
### ACHIEVERS SECTION

31. Read the given statements carefully and select the CORRECT option.
- P** : Rounded off the number 584921 to the nearest thousands gives 585000.  
**Q** : Sum of place values of the digit 2 and 5 in the number 25890 is 26000.
- A. Only P is true.                      B. Only Q is true.  
C. Both P and Q are true.                      D. Neither P nor Q is true.







SPACE FOR ROUGH WORK

32. A circle was divided into 8 equal parts. It is then colored with different colors. Study the figure carefully and answer the following questions.
- (i) Find the fraction of number of parts colored with red color to the whole figure.
- (ii) Find the fraction of number of parts colored with blue color to the number of parts colored with green color.

- (i) (ii)
- A.  $\frac{3}{8}$   $\frac{3}{5}$
- B.  $\frac{4}{8}$   $\frac{3}{4}$
- C.  $\frac{3}{8}$   $\frac{2}{3}$
- D.  $\frac{5}{8}$   $\frac{3}{5}$



33. The given pictograph shows the number of food packets distributed by some persons of a locality on different days. Study the graph carefully and answer the following questions.

Days	Number of food packets distributed
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Each  shows 500 packets.	

- (i) On which day, maximum number of food packets were distributed?
- (ii) How many more food packets were distributed on Thursday and Friday together than on Tuesday?

- (i) (ii)
- A. Tuesday 1000
- B. Wednesday 1000
- C. Wednesday 1500
- D. Thursday 2000

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34. Find the difference between the perimeters of figure (P) and figure (Q) (not drawn to scale).

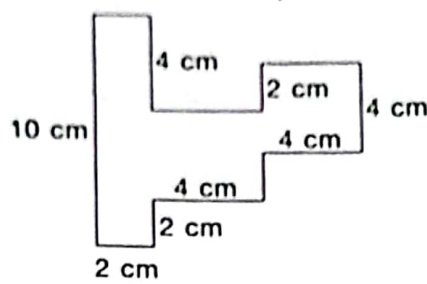


Figure (P)

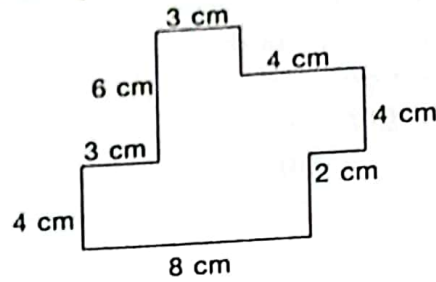


Figure (Q)

A. 4 cm

B. 6 cm

C. 8 cm

D. None of these

35. Find the value of  $\frac{Y+Z-X}{3}$ .

A. 2

B. 3

C. 1

D. 0

$$\begin{array}{r}
 \boxed{X} \ 3 \ 6 \ \boxed{Z} \\
 18 \overline{) 4 \ 2 \ 5 \ 6 \ 7} \\
 \underline{- 3 \ 6} \ \downarrow \\
 \phantom{0} 6 \ 5 \\
 \underline{- 5 \ 4} \ \downarrow \\
 \phantom{00} 1 \ \boxed{Y} \ 6 \\
 \underline{- 1 \ 0 \ 8} \ \downarrow \\
 \phantom{000} 8 \ 7 \\
 \underline{- 7 \ 2} \\
 \phantom{0000} 1 \ 5
 \end{array}$$

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