SOF
SCIENCE OLYMPIAD FOUNDATION

Inspiring Young Minds
Through Knowledge Olympiads

2016-17

Name:...

Section:.............................. Roll No.:...........................

Contact No. ....

Total Questions: 35   Time: 1 hr.

CLASS ·4

SET-A

IMO

10TH SOF INTERNATIONAL MATHEMATICS OLYMPIAD

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, Section, Roll No.** and **% of marks/grade** in last class clearly on the **OMR Sheet** and do not forget to sign it.

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 in the OMR Sheet, use **HB Pencil** or **Blue / Black ball point pen** only. E.g.

   Q. 16: Sonia has 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 in the OMR Sheet.

   16. ● Ⓑ Ⓒ Ⓓ

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.

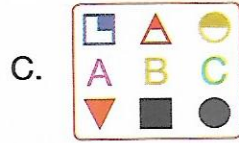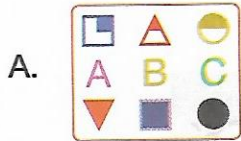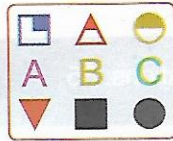9. Please fill in your personal details in space on top of this page before attempting the paper.

1. Which of the following figures is same as the Problem Figure?

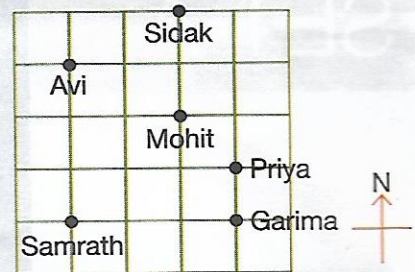### Problem Figure

A.   B.   C.   D.
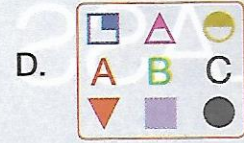
2. If the given clock is 33 minutes slow, then the correct time after 25 minutes will be _____.

A.   B.   C.   D.
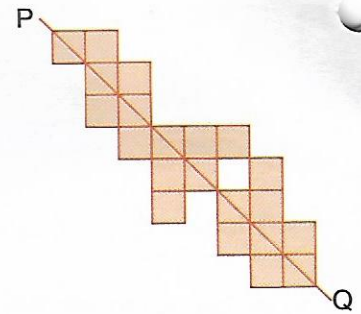
3. Who is standing to the South-West of Mohit?

A. Samrath

B. Sidak

C. Priya

D. Avi

4. What is the minimum number of squares that must be added so that the line PQ becomes a line of symmetry?

A. 1

B. 2

C. 3

D. 4

SPACE FOR ROUGH WORK

5. Select the INCORRECT match.

   A. 94 – 94

   B. FISH – HƧIꟻ

   C. 581 – 18ꟾ

   D. ✶TL – JT✶

6. Which of the following words can be formed from the letters of the given word?

   MEASUREMENT

   A. MASTER   B. MANTLE   C. SUMMIT   D. ASSURE

7. In a certain code language, the letters are coded as follows :

S	B	C	P	N	E	O	H	R	M
0	9	3	7	1	6	4	8	5	2

   Find the code of the given word.

   HORNS

   A. 84519   B. 84510   C. 84518   D. 84517

8. Which of the following numbers will replace the question mark in the given number pattern?

   17   19   22   26   ?   37

   A. 30   B. 35   C. 31   D. 36

9. Select a figure from the options which will complete the pattern in Figure (X).
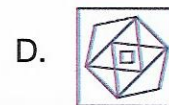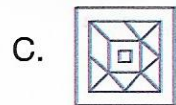
   A.   B.

   C.   D.
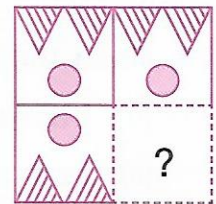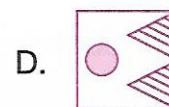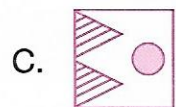
   Figure (X)

10. In which of the following figures, the given Shape (X) is exactly embedded as one of its part?

    A.   B.

    C.   D.
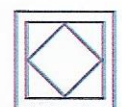
    Shape (X)

SPACE FOR ROUGH WORK

11. The adjoining list shows the names of the students who are in the Environmental Club.

    What fraction of names are starting with alphabet M?

    Students in the Environmental Club

Ananya	Jesha
Sanya	Mrinal
Mohit	Sidak
Mehul	Parul

    A. $\dfrac{2}{8}$ B. $\dfrac{3}{8}$ C. $\dfrac{1}{8}$ D. 0

12. Find the difference between the smallest and the largest five digit number formed by the digits 8, 6, 9, 4, 3 using each digit only once.

    A. 63954   B. 61595   C. 69243   D. 66164

13. The costs of Notebook, Bag, Pencil box and Paper clip are given in the box.

    What is the total cost of a Paper clip, a Bag and a Notebook?

    A. CCLXVI

    B. CXV

    C. CCXLVI

    D. CCXLI

Notebook	₹ LXXXVI
Bag	₹ CLV
Pencil box	₹ LXVII
Paper clip	₹ XXV

14. Read the following statements and identify the number.

    (i)   I am a 2-digit even number.

    (ii) I am a common multiple of both 6 and 7.

    (iii) I have a total of 8 factors.

    A. 43   B. 35   C. 42   D. 84

15. The sum of two numbers is six lakh forty nine thousand seven hundred twelve. One of the numbers is 4,93,700. Find the other number.

    A. 1,40,721   B. 1,56,012   C. 1,50,120   D. 1,57,067

SPACE FOR ROUGH WORK
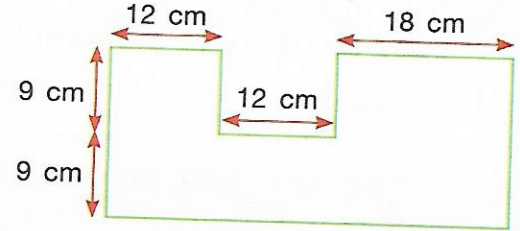
16. If + = 19 kg, + + + + + + + + = 94 kg and

 + = 22 kg, then the weight of = ?.

    A. 4 kg   B. 3 kg   C. 2 kg   D. 5 kg

17. Find the perimeter of the given figure.

    A. 160 cm

    B. 142 cm

    C. 138 cm
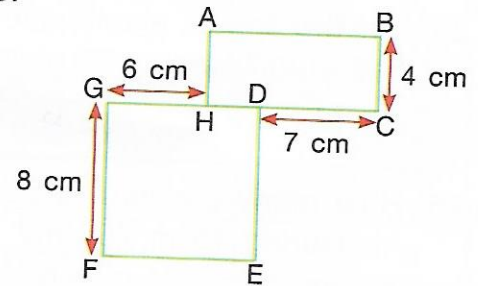
    D. 130 cm

18. If the letter _____ is removed from the letters given below, the dotted line will be a line of symmetry.

-E-H-I-J-

    A. E   B. H   C. I   D. J

19. The given figure is made up of a rectangle and a square. Find the length of AB.

    A. 11 cm

    B. 9 cm

    C. 10 cm

    D. 15 cm

20. What is the difference between the total number of members in the basketball club in 2015 and 2016?

    A. 1587

    B. 1008

    C. 1597

    D. 2205

Members of Basketball Club		
	2015	2016
Men	3205	2804
Women	4801	6408
Boys	1600	2000
Girls	2405	1807

SPACE FOR ROUGH WORK

21. For a wedding the decorators have to fix 1250 flowers in the hall. If they had already fixed 985 flowers, how many more flowers do they have to fix?

    A. 270   B. 265   C. 272   D. 358

22. A farm has 437 rows of mango trees with 108 trees in each row. How many mango trees are there in the farm?

    A. 48196   B. 57301   C. 47196   D. 52305

23. The parade at the carnival started at 5:25 p.m. and finishes at 7:20 p.m. What was the duration of the parade?

    A. 1 hr 55 mins   B. 1 hr 50 mins   C. 1 hr 30 mins   D. 2 hrs 40 mins

24. The distance between Riya's home and school is $4\frac{3}{10}$ km and that of Raju's is $1\frac{1}{5}$ km. How much more distance does Riya need to cover than Raju to reach school everyday?

    A. $3\frac{2}{3}$ km   B. $5\frac{1}{2}$ km   C. $4\frac{1}{10}$ km   D. $3\frac{1}{10}$ km

25. For the annual examination 1176 children were made to sit in 21 rooms. If every room had equal number of children, find the number of children sitting in one room.

    A. 60   B. 56   C. 54   D. 42

26. How many pieces of ribbon, measuring 45 cm each, can be cut from a roll of ribbon measuring 15 m 75 cm?

    A. 45   B. 35   C. 65   D. 77

27. A gardener plans to plant 4600 trees in 23 rows, each containing the same number of trees. How many trees will there be in each row?

    A. 200   B. 400   C. 300   D. 250

28. I went for a journey with ₹ 32700. On the first day I spent ₹ 12350, on the second day ₹ 5980, and on the third day ₹ 10798. How much money do I have now?

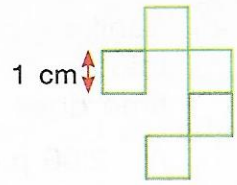   A. ₹ 3500   B. ₹ 3672   C. ₹ 3572   D. ₹ 4672

SPACE FOR ROUGH WORK

29. Sonika went to her friend's house at 1:15 p.m. Her father told her to be back home in 1 hour and 45 minutes. What time does Sonika needs to be at home?

   A. 2:00 p.m.
   C. 2:45 p.m.

   B. 2:30 p.m.
   D. 3:00 p.m.

30. On Tuesday, 28917 people watched the cricket test match. On Wednesday, 26625 people watched the match. On Thursday, the attendance was 31897. What was the total attendance for these three days?

   A. 87500
   B. 86700
   C. 87439
   D. 85000

ACHIEVERS SECTION

31. Shalu conducted a survey on the different interests of her classmates but has not completed filling in the information in the table below.
Using the following information, find the value of P, Q and R .

   (i)   Twice as many boys as girls like swimming.

   (ii) A total of 28 boys and girls like cycling, 6 more boys than girls like cycling.

   (iii) Out of a total of 35 boys and girls who like to read, $\frac{1}{5}$ of them are boys.

	P	Q	R
A.	8	17	28
B.	7	11	12
C.	32	11	12
D.	32	17	28

Types of Interest	Boys	Girls
Swimming	16	P
Cycling	Q	
Reading		R

32. Who among the following students made the CORRECT statement?

   Samrath : $\frac{2}{9}$ and $\frac{4}{18}$ are equivalent fractions.

   Kavleen : Two fractions are equivalent when they have same denominators.

   Mohit : Two fractions are equivalent when they have same value.

   A. Samrath and Kavleen
   C. Samrath and Mohit

   B. Kavleen and Mohit
   D. All are correct

SPACE FOR ROUGH WORK

33. How many more squares of side 1 cm must be added to the given figure to form a square of side 5 cm?

1 cm ↕

A. 9
B. 11
C. 20
D. 25

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34. Find P – Q + R ÷ S.

A. 4

B. 2

C. 0

D. 5

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        3 P 328
  23 ) 789546 (
      -69↓
        99
       -92↓
         75
        -69↓
          64
         -Q6↓
           1R6
          -184
            S
```

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35. Match the following.

Column-I		Column-II
(i)	When number x is multiplied by 10 and then divided by 4, the result is 390. Then, x is	(p) 1344
(ii)	There are 56 crates of oranges. Each crate contains 24 oranges. Number of oranges altogether are	(q) 156
(iii)	Subtract 3987 from the sum of 4687 and 28080.	(r) 216
(iv)	The product of second multiple of 9 and 12 is	(s) 28780

A. (i) → (p), (ii) → (q), (iii) → (r), (iv) → (s)
B. (i) → (q), (ii) → (p), (iii) → (s), (iv) → (r)
C. (i) → (q), (ii) → (p), (iii) → (r), (iv) → (s)
D. (i) → (q), (ii) → (s), (iii) → (p), (iv) → (r)

SPACE FOR ROUGH WORK