



**SOF INTERNATIONAL
MATHEMATICS OLYMPIAD**

SYLLABUS

Section – 1 : Verbal and Non-Verbal Reasoning.

Section – 2 : Integers, Fractions and Decimals, Exponents and Powers, Algebraic Expressions, Simple Linear Equations, Lines and Angles, Comparing Quantities, The Triangle and its Properties, Symmetry, Congruence of Triangles, Rational Numbers, Perimeter and Area, Data Handling, Visualising Solid Shapes, Practical Geometry.

Section – 3 : Syllabus as per Section – 2.

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

Total Questions : 50

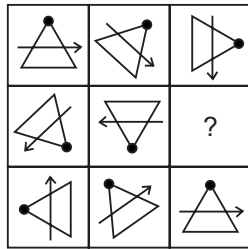
Time : 1 hr.





PATTERN & MARKING SCHEME

Section	(1) Logical Reasoning	(2) Mathematical Reasoning	(3) Everyday Mathematics	(4) Achievers Section
No. of Questions	15	20	10	5
Marks per Ques.	1	1	1	3

LOGICAL REASONING

1. Find the missing figure in the given figure matrix. 2. If '+' means '÷', '-' means '×', '÷' means '+' and '×' means '-', then $320 \div 225 + 15 \times 15 - 85 = ?$



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

- (A) 180
(B) 140
(C) 60
(D) -940

3. In a certain code language, CHEMISTRY is written as NFIDITUSZ. How is BEANSTOCK written in that language?
 (A) CFBOSLDPU
 (B) CFBOSUPDL
 (C) OBFCSUPDL
 (D) OBFCSLDPU

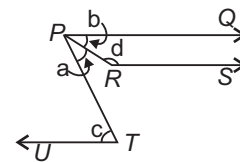
MATHEMATICAL REASONING

4. Solve for x : $\frac{1}{5}(x-8) + \frac{4+x}{4} + \frac{x-1}{7} = 7 - \frac{23-x}{5}$. 6. In the given figure, PQ , RS and UT are parallel lines. If $c = 75^\circ$ and $a = (2/5)c$, then find the value of $b + d/2$.

- (A) 7 (B) 8
(C) 5 (D) 9

5. If $55\% \text{ of } 1000 \div 60\% \text{ of } 2000 = k : 2k + 2$, then find the sum of digits of k .

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



- (A) 92° (B) 115°
(C) 112.5° (D) 135.5°

EVERYDAY MATHEMATICS

7. Garima and Mohit deposited ₹ 3000 and ₹ 4000 in a company at the rate of 10% per annum for 3 years and $2\frac{1}{2}$ years respectively. The

difference of the amounts received by them will be

- (A) ₹ 100 (B) ₹ 1000
(C) ₹ 900 (D) ₹ 1100

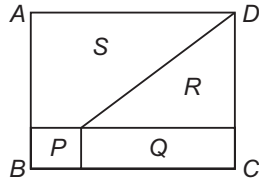
8. At Shimla, the temperature was -7°C on Tuesday. It then dipped by 3°C on Wednesday. On Thursday, it rose by 6°C . What was the temperature of Shimla on Wednesday and Thursday respectively?
- (A) -4°C , -10°C
 (B) -10°C , -4°C
 (C) -12°C , 8°C
 (D) -10°C , 4°C

ACHIEVERS SECTION

9. The given figure shows the rectangle $ABCD$ (not drawn to scale). R is thrice the size of P and $\frac{1}{2}$ the size of S . Q is twice the size of P .

What fraction of the whole figure is the sum of Q and S ?

- (A) $1/3$
 (B) $2/3$
 (C) $4/5$
 (D) $6/5$



10. Read the given statements carefully and select the correct option.

Statement I : If four quantities a , b , c and d are such that the ratio $a : b$ is equal to the ratio $c : d$, then we say a , b , c and d are in ratio and $a:b:c:d$.

Statement II : If $a : b = 5 : 9$ and $b : c = 4 : 7$, then $a : b : c = 20 : 36 : 63$.

- (A) Both Statement I and Statement II are true.
 (B) Statement I is true but Statement II is false.
 (C) Statement I is false but Statement II is true.
 (D) Both Statement I and Statement II are false.

SPACE FOR ROUGH WORK

ANSWERS

1. (C) 2. (D) 3. (C) 4. (B) 5. (B) 6. (C) 7. (D) 8. (B) 9. (B) 10. (C)