

# SCO INTERNATIONAL OLYMPIAD

## GRADE 9 SAMPLE PAPER

Practice Paper with Answer Key and Explanations

**Designed for Grade 9 mental ability reasoning, logic, pattern recognition, and analytical problem solving.**

- official SCO cover style with compact question labels and clean PDF-ready spacing
- balanced reasoning coverage: coding, series, alphabet tests, puzzles, clock, calendar, cubes, images and syllogism
- answer key and explanations included after the question paper for learning and review

Maths	English	Science	Mental Ability	Finance Knowledge
AI	Entrepreneurship	GK	Coding	Life Skills

Class	Set	Total Questions	Time	Sections
9	A	35	60 minutes	Reasoning, logical analysis, non-verbal reasoning and achievers tasks

**Section A - General Mental Ability**

**Q1. In each group of letters, one is different. Pick the odd one out.**

- A. TSRQ
- B. MLKJ
- C. YXWV
- D. NMLK

**Q2. Select the series in which skipped letters between adjacent letters decrease in order.**

- A. A G M R V
- B. H N S W A
- C. N S X C H
- D. S Y D H K

**Q3. In the English alphabet, which letter is immediately to the left of M?**

- A. N
- B. L
- C. O
- D. K

**Q4. Rearrange the letters R M N B U E to form a meaningful English word.**

- A. MUNBRE
- B. NUMBRE
- C. NUMBER
- D. REMBUN

**Q5. Which letter is 8th to the left of the 16th letter from the right end of the alphabet?**

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

**Q6. Arrange the words in alphabetical order and choose the word that comes first: Language, Laurel, Leisure, Lapse.**

- A. Language
- B. Laurel
- C. Leisure
- D. Lapse

**Q7. Arrange Invent, Invitation, Irritate and Ignite in dictionary order. Which word comes third?**

- A. Invent
- B. Invitation
- C. Irritate

D. Ignite

**Q8.** In the series m n j o k m n n m k j m n m b a m, how many times does m appear?

- A. 7
- B. 5
- C. 6
- D. 4

**Q9.** In the series 7 A \$ 7 9 @ J D M = S + K D 3 3 6, how many alphabets are present?

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

**Q10.** Arrange the words Sport, Spouse, Squash and Sprout in alphabetical order. Which comes first?

- A. Sport
- B. Spouse
- C. Squash
- D. Sprout

**Q11.** Insert the missing pair: 1/A, C/3, 5/E, ?/?

- A. G/7
- B. 7/G
- C. H/8
- D. 8/H

**Q12.** Arrange Preach, Praise, Precinct, Precept and Precede in dictionary order. Which sequence is correct?

- A. Praise, Preach, Precede, Precept, Precinct
- B. Praise, Preach, Precinct, Precept, Precede
- C. Preach, Praise, Precede, Precept, Precinct
- D. Praise, Precede, Preach, Precept, Precinct

**Q13.** Arrange Family, Fame, Falter and Famine alphabetically. Which comes third?

- A. Family
- B. Fame
- C. Falter
- D. Famine

**Q14.** From either end, if a person is standing at 9th position in a line, what is the total number of people?

- A. 19
- B. 17
- C. 10

D. 15

**Q15. Arrange Parrot, Sparrow, Peacock and Skylark in dictionary order. Which word comes second?**

- A. Parrot
- B. Peacock
- C. Skylark
- D. Sparrow

**Q16. Which group contains more than two vowels?**

- A. B D E J O L
- B. J K A P I X
- C. P R A Q E O
- D. Z I L E R S

**Q17. A student is 12th from the left and 18th from the right. How many students are in the row?**

- A. 28
- B. 29
- C. 30
- D. 31

**Q18. If PEN is coded by shifting each letter two steps backward, how is CAR coded?**

- A. AYP
- B. BZS
- C. ECU
- D. AYQ

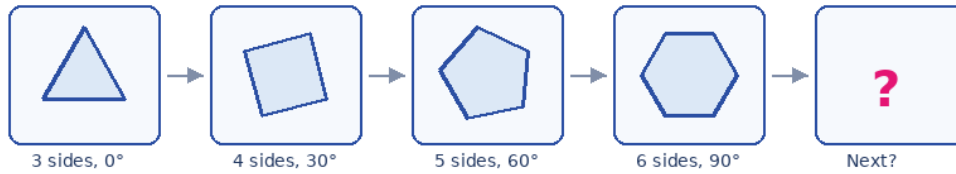
**Q19. If ROTAVATOR is written in reverse as ROTAVATOR because it is a palindrome, how will KNOWLEDGE be written in reverse?**

- A. KNOWLEDGE
- B. Knowledge
- C. EGDELWONK
- D. None of these

**Q20. Statements: All apples are fruits. Some fruits are sour. Which conclusion follows?**

- A. All apples are sour
- B. Some apples are sour
- C. Some sour things are fruits
- D. No definite conclusion about apples being sour follows

**Q21.** Which figure is the correct continuation of the polygon series shown?



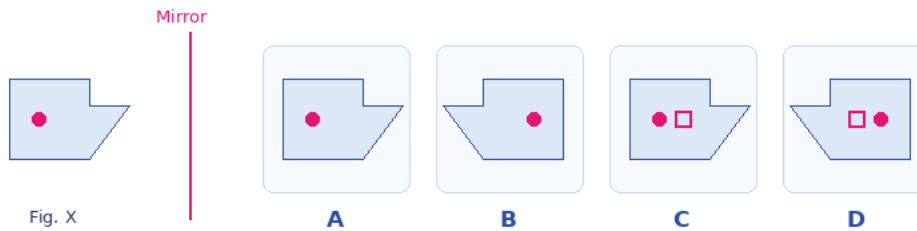
- A. Heptagon rotated 120 degrees
- B. Hexagon rotated 120 degrees
- C. Octagon rotated 150 degrees
- D. Pentagon rotated 120 degrees

**Q22.** A cube is painted on all faces and cut into 27 small cubes. How many cubes have no face painted?

- A. 0
- B. 1
- C. 6
- D. 8

**Q23.** Choose the correct mirror image of the given figure.

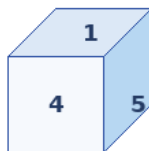
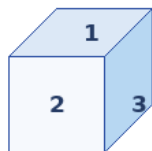
**Original figure and possible mirror images**



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

**Q24.** A dice shows faces 1, 2, 3 in one view and 1, 4, 5 in another. Which face is opposite 1?

**Dice views for reasoning**

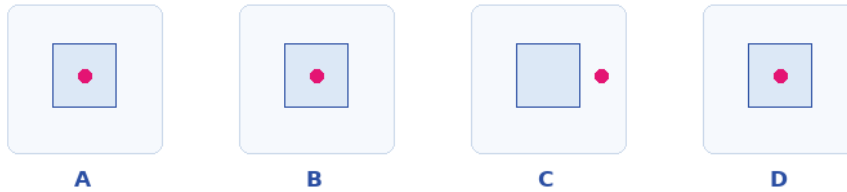


If 1 is on top in both views,  
opposite faces can be inferred  
from the adjacent positions.

- A. 2
- B. 3
- C. 5
- D. 6

**Q25. Find the odd figure out.**

**Which figure is different from the others?**



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

**Q26. Family puzzle: P is the son-in-law of H. H has daughter U. P is married to U. How is H related to P?**

- A. Father-in-law
- B. Brother
- C. Son
- D. Uncle

**Q27. If A % B means A is daughter of B, A @ B means A is mother of B, and A \$ B means A is father of B, what does X @ Y \$ Z imply?**

- A. X is grandmother of Z
- B. X is sister of Z
- C. Y is mother of Z
- D. Z is father of X

**Q28. A sequence is 2, 6, 12, 20, 30, ?. What is the next term?**

- A. 40
- B. 42
- C. 44
- D. 46

**Q29. If BLACK is coded as YZXPV using mirror letters, how is WHITE coded?**

- A. DSRGV
- B. DSJGV
- C. DSRGU
- D. ERTHV

**Q30. Determine whether  $n$  is divisible by 6. Statement 1:  $n$  is divisible by 2. Statement 2:  $n$  is divisible by 3.**

- A. Statement 1 alone is sufficient
- B. Statement 2 alone is sufficient
- C. Both statements together are sufficient, neither alone is sufficient
- D. Neither statement is sufficient

### Section C - Achievers Section

**Q31. Achievers: In the series 4, 10, 18, 28, ?, what is the next number?**

- A. 38
- B. 40
- C. 42
- D. 44

**Q32. Achievers: A code uses A=1, B=2, and so on. If the value of a word is the sum of its letters, what is the value of LOGIC?**

- A. 42
- B. 43
- C. 45
- D. 46

**Q33. Achievers: If January 1 is Monday in a common year, what day is March 1?**

- A. Monday
- B. Tuesday
- C. Wednesday
- D. Thursday

**Q34. Achievers: All artists are observers. Some observers are scientists. Which conclusion is valid?**

- A. Some artists are scientists
- B. All scientists are artists
- C. Some scientists are observers
- D. No artist is a scientist

**Q35. Achievers: A  $4 \times 4 \times 4$  cube is painted on all faces and cut into unit cubes. How many small cubes have exactly one painted face?**

- A. 12
- B. 16
- C. 24
- D. 36

## Space for Rough Work

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## Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	A	2	D	3	B	4	C	5	B
6	A	7	B	8	B	9	C	10	A
11	B	12	A	13	A	14	B	15	B
16	C	17	B	18	A	19	C	20	D
21	A	22	B	23	B	24	D	25	C
26	A	27	A	28	B	29	A	30	C
31	B	32	D	33	D	34	C	35	C

## Explanations

- Q1. Answer A:** MLKJ, YXWV and NMLK are four consecutive letters in reverse order. TSRQ skips U, so it is not a regular consecutive reverse group.
- Q2. Answer D:** S→Y is +6, Y→D wraps +5, D→H is +4, H→K is +3. The skipped gap decreases step by step.
- Q3. Answer B:** The letter just before M is L.
- Q4. Answer C:** The correct meaningful word is NUMBER.
- Q5. Answer B:** The 16th letter from the right is K. Eight letters to the left of K is C.
- Q6. Answer A:** All begin with L. Comparing letters, Language comes before Lapse and Laurel because Lan comes before Lap and Lau.
- Q7. Answer B:** Dictionary order is Ignite, Invent, Invitation, Irritate. The third word is Invitation.
- Q8. Answer B:** Counting all m letters gives 5 occurrences.
- Q9. Answer C:** The alphabets are A, J, D, M, S, K and D. There are 7 alphabets, so the answer is C.
- Q10. Answer A:** Sport comes before Spouse because Spor comes before Spou, and both come before Sprout and Squash.
- Q11. Answer B:** The pattern alternates number/letter and letter/number: 1/A, C/3, 5/E, 7/G.
- Q12. Answer A:** Pra comes before Pre. Among Pre words: Preach, Precede, Precept, Precinct.
- Q13. Answer A:** Order is Falter, Fame, Family, Famine. The third word is Family.
- Q14. Answer B:** If the same person is 9th from both ends, total = 9 + 9 - 1 = 17.
- Q15. Answer B:** P words come before S words. Among P words, Parrot comes before Peacock. The second word is Peacock.
- Q16. Answer C:** Group C has A, E and O, which are three vowels. Other groups have only two vowels.
- Q17. Answer B:** Total = 12 + 18 - 1 = 29.
- Q18. Answer A:** C→A, A→Y after wrapping backward, and R→P. Thus CAR becomes AYP.
- Q19. Answer C:** KNOWLEDGE reversed letter by letter is EGDELWONK.
- Q20. Answer D:** The sour fruits need not include apples. Therefore no definite conclusion about apples being sour follows.
- Q21. Answer A:** The figure sequence increases sides by one and rotation by 30 degrees each step. Therefore the next figure is a heptagon rotated 120 degrees.
- Q22. Answer B:**  $27 = 3^3$ , so  $n=3$ . Unpainted cubes =  $(3 - 2)^3 = 1$ .
- Q23. Answer B:** A vertical mirror reverses left and right. Option B correctly shows the reversed shape and dot position.
- Q24. Answer D:** Since 1 is adjacent to 2, 3, 4 and 5, the only remaining face 6 must be opposite 1.
- Q25. Answer C:** Only option C places the dot outside the diamond; the others have the dot inside.
- Q26. Answer A:** If P is the son-in-law of H, then H is P's father-in-law or mother-in-law. Here H is stated as father in the family context, so father-in-law is correct.
- Q27. Answer A:** X @ Y means X is mother of Y. Y \$ Z means Y is father of Z. Therefore X is the paternal grandmother of Z.
- Q28. Answer B:** The differences are 4, 6, 8, 10. The next difference is 12, so  $30 + 12 = 42$ .
- Q29. Answer A:** Mirror letters are W→D, H→S, I→R, T→G, E→V, giving DSRGV.

**Q30. Answer C:** A number divisible by both 2 and 3 is divisible by 6. Neither statement alone guarantees divisibility by 6.

**Q31. Answer B:** Differences are 6, 8, 10. Next difference is 12, so  $28 + 12 = 40$ .

**Q32. Answer D:** L=12, O=15, G=7, I=9, C=3. Sum = 46.

**Q33. Answer D:** Days from Jan 1 to Mar 1 are  $31 + 28 = 59$ .  $59 \bmod 7 = 3$ . Three days after Monday is Thursday.

**Q34. Answer C:** The statement "some observers are scientists" means some scientists are observers. No definite link to artists is guaranteed.

**Q35. Answer C:** Exactly one painted face cubes =  $6 \times (4 - 2)^2 = 6 \times 4 = 24$ .