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SCO INTERNATIONAL OLYMPIAD

CLASS 10 SAMPLE PAPER

SCO International Mental Ability Olympiad

Designed as a practice paper for Grade 10 students with clear answer keys, explanations, and compact question formatting.

- sample paper format based on the older uploaded Class 10 IMAO source
- balanced coverage of verbal, non-verbal, quantitative and data reasoning

Coding	Series	Alphabet	Operations	Puzzles
Calendar	Syllogism	Cubes	Blood Relations	Practice

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Sample Paper with Answer Key and Explanations

Official SCO-branded question paper format with compact question labels, answer key and explanations.

Exam Name	SCO International Mental Ability Olympiad
Class	Class 10
Paper Year	Sample
Total Questions / Time	50 Questions / 60 Minutes

Guidelines for the Candidate

1. Total Questions: 50 | Time: 1 hour.
2. Before the exam begins, complete the OMR sheet or online candidate details carefully.
3. The paper contains General Reasoning, Data/Table Case Study, Statement/Data Sufficiency and Achievers sections.
4. Every question has one correct answer. Select only one option.
5. Each Achievers Section question carries 2 marks; all other questions carry 1 mark unless stated otherwise.
6. There is no negative marking in this sample format.
7. Calculator use is not allowed unless the official exam screen specifically permits it.
8. All diagrams, tables and passages are part of the question block and must be read before choosing the answer.

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General Reasoning

Q1. In a code, TREE is written as USFF. How is ROAD written?

A. SPBE
B. QNZC
C. SPAD
D. RNBE

Answer: A

Explanation: Each letter is shifted one place forward: R->S, O->P, A->B, D->E.

Q2. Complete the series: 5, 9, 17, 33, ?, 129.

A. 49
B. 57
C. 65
D. 73

Answer: C

Explanation: Each term is double the previous term minus 1: 5x2-1=9, 9x2-1=17, 17x2-1=33, 33x2-1=65.

Q3. Which letter comes next: Z, X, U, Q, L, ?

A. F
B. G
C. H
D. I

Answer: A

Explanation: Alphabet positions decrease by 2, 3, 4, 5, then 6. L is 12, 12-6=6, which is F.

Q4. If a * b = 2a + 3b, what is 4 * 5?

A. 19
B. 22
C. 23
D. 25

Answer: C

Explanation: 4 * 5 = 2x4 + 3x5 = 8 + 15 = 23.

Q5. A man walks 6 km north, then 8 km east. How far is he from the starting point?

A. 10 km
B. 12 km
C. 14 km
D. 15 km

Answer: A

Explanation: Use Pythagoras: distance = sqrt(6^2 + 8^2) = 10 km.

Q6. If Monday is coded as 2 and Friday as 6, what is Sunday coded as?

A. 1
B. 7
C. 0
D. 8

Answer: A

Explanation: The code matches day order when Sunday is 1, Monday is 2, ..., Saturday is 7.

Q7. Arrange in dictionary order: BOND, BONE, BOLD, BOLT.

A. BOLD, BOLT, BOND, BONE
B. BOLD, BOND, BONE, BOLT
C. BOLT, BOLD, BOND, BONE
D. BONE, BOND, BOLD, BOLT

Answer: A

Explanation: Compare letter by letter: BOLD comes before BOLT because D < T; then BOND before BONE because D < E.

Q8. Find the odd one out: Square, Rectangle, Triangle, Cube.

A. Square
B. Rectangle
C. Triangle
D. Cube

Answer: D

Explanation: Cube is three-dimensional, while the others are two-dimensional figures.

Q9. All artists are creative. Some creative people are engineers. Which conclusion follows?

A. All artists are engineers.
B. Some engineers may be artists.
C. No artist is creative.
D. All engineers are artists.

Answer: B

Explanation: Only a possibility follows. The statements do not guarantee overlap between artists and engineers.

Q10. A figure rotates 90 degrees clockwise each time. If the first arrow points left, what will the third arrow point to?

A. Up
B. Right
C. Down
D. Left

Answer: B

Explanation: Left -> Up -> Right after two 90-degree clockwise rotations.

Q11. Pen is to Write as Scissors is to ____.

A. Cut
B. Paint
C. Read
D. Measure

Answer: A

Explanation: A pen is used for writing; scissors are used for cutting.

Q12. A is the brother of B. B is the daughter of C. What is A to C?

A. Daughter
B. Son
C. Father
D. Uncle

Answer: B

Explanation: Since B is C's daughter and A is B's brother, A is C's son.

Q13. A painted cube is cut into 64 equal small cubes. How many small cubes have three painted faces?

A. 4
B. 6
C. 8
D. 12

Answer: C

Explanation: A cube has 8 corners. Each corner small cube has exactly three painted faces.

Q14. If all roses are flowers and some flowers fade quickly, which statement is definitely true?

A. All roses fade quickly.
B. Some roses fade quickly.
C. All roses are flowers.
D. No flower is a rose.

Answer: C

Explanation: The first statement directly says all roses are flowers. The other conclusions are not guaranteed.

Q15. Is y positive? Statement 1: $y^2 = 25$. Statement 2: $y > 0$.

A. Statement 1 alone is sufficient.
B. Statement 2 alone is sufficient.
C. Both together are needed.
D. Neither is sufficient.

Answer: B

Explanation: Statement 2 directly states y is positive. Statement 1 gives y = 5 or -5, so it is not sufficient alone.

Q16. Which pair has the same relationship as Seed : Tree?

A. Egg : Bird
B. Cloud : Rain
C. Book : Page
D. Chair : Table

Answer: A

Explanation: A seed can develop into a tree; an egg can develop into a bird.

Q17. Four friends P, Q, R, S sit in a row. P is left of Q. R is right of Q. S is left of P. Which is a possible order?

A. S, P, Q, R
B. P, S, Q, R
C. S, Q, P, R
D. R, Q, P, S

Answer: A

Explanation: S, P, Q, R satisfies S left of P, P left of Q, and R right of Q.

Q18. A shop has bicycles and tricycles. There are 12 vehicles and 30 wheels. How many tricycles are there?

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

Answer: C

Explanation: Let bicycles = b and tricycles = t. b+t=12 and 2b+3t=30. Subtract 2b+2t=24 from the second equation: t=6.

Q19. The average of five numbers is 18. Four numbers are 12, 16, 20 and 22. What is the fifth number?

A. 18
B. 20
C. 22
D. 24

Answer: B

Explanation: Total of five numbers = 5x18=90. Known sum = 70. Fifth number = 20.

Q20. If a hexagon rotates 60 degrees clockwise each step, what is its orientation after five steps from 0 degrees?

A. 180 degrees
B. 240 degrees
C. 300 degrees
D. 360 degrees

Answer: C

Explanation: Five steps of 60 degrees each give 300 degrees.

Data/Table Case Study

Q21. A table gives A=2, B=4, C=8, D=16. What is the code sum for CAB?

A. 12
B. 14
C. 16
D. 18

Answer: B

Explanation: C + A + B = 8 + 2 + 4 = 14.

Q22. Values in a sequence are 3, 8, 15, 24, ?. What is the missing value?

A. 33
B. 35
C. 37
D. 39

Answer: B

Explanation: Differences are 5, 7, 9, so the next difference is 11. Missing value = 24 + 11 = 35.

Q23. In the word ORGANISATION, what is the total alphabet position value of the vowels O, A, I, A, I, O?

A. 45
B. 49
C. 51
D. 55

Answer: C

Explanation: O=15, A=1, I=9, A=1, I=9, O=15. Total = 51.

Q24. If x diamond y = x^2 + y^2, what is 3 diamond 4?

A. 7
B. 12
C. 25
D. 49

Answer: C

Explanation: 3^2 + 4^2 = 9 + 16 = 25.

Q25. A parking lot has cars and bikes. There are 18 vehicles and 56 wheels. How many cars are there?

A. 8
B. 9
C. 10
D. 11

Answer: C

Explanation: Let cars = c and bikes = b. c+b=18, 4c+2b=56. Subtract 2c+2b=36 from the second equation: 2c=20, c=10.

Q26. A class begins at 8:20 AM. Each lesson is 40 minutes with a 5-minute break between lessons. When does the third lesson end?

A. 10:20 AM
B. 10:25 AM
C. 10:30 AM
D. 10:35 AM

Answer: C

Explanation: Lesson 1 runs 8:20-9:00, then break to 9:05. Lesson 2 runs 9:05-9:45, then break to 9:50. Lesson 3 runs 9:50-10:30.

Q27. Scores are 62, 70, 78, 84 and 91. What is the range?

A. 19
B. 25
C. 29
D. 31

Answer: C

Explanation: Range = highest - lowest = 91 - 62 = 29.

Q28. A store sells 40, 55, 70 items on three days. If the increase is constant, how many items on Day 4?

A. 80
B. 85
C. 90
D. 95

Answer: B

Explanation: The increase is 15 each day. Day 4 = 70 + 15 = 85.

Q29. Two numbers have sum 50 and difference 14. What is the greater number?

A. 18
B. 28
C. 32
D. 36

Answer: C

Explanation: Adding the equations gives 2x = 64, so the greater number is 32.

Q30. A table lists Rina as Doctor, Kabir as Engineer and Anu as Doctor. Which conclusion is definitely valid?

A. All doctors are women.
B. Some listed people are doctors.
C. All engineers are men.
D. No engineer is a doctor.

Answer: B

Explanation: The table directly shows that at least one listed person is a doctor.

Statement and Data Sufficiency

Q31. The sum of three positive integers a < b < c is 45. Statement 1: c - a > 15. Statement 2: b > 12. Is c > 22?

A. Statement 1 alone is sufficient.
B. Statement 2 alone is sufficient.
C. Both together are sufficient.
D. Both together are not sufficient.

Answer: D

Explanation: Examples can be constructed satisfying both statements with c above or not definitely above 22; the information is not enough for a unique yes/no.

Q32. A letter code table gives M=14, A=11, R=18, K=22. What is MARK?

A. 14,11,18,22
B. 11,14,18,22
C. 14,18,11,22
D. 22,18,11,14

Answer: A

Explanation: Use the table values in the order M-A-R-K.

Q33. Angles in a rotation sequence are 0, 30, 75, 135, ?. The increments rise by 15 degrees: 30, 45, 60. What comes next?

A. 195 degrees
B. 210 degrees
C. 225 degrees
D. 240 degrees

Answer: B

Explanation: The next increment is 75 degrees. 135 + 75 = 210 degrees.

Q34. Times are 15.05, 15.02, 15.09, 15.01 and 15.07 seconds. What is the second fastest time?

A. 15.01
B. 15.02
C. 15.05
D. 15.07

Answer: B

Explanation: Ascending order is 15.01, 15.02, 15.05, 15.07, 15.09. Second fastest is 15.02.

Q35. If N - 7 = 18, find 3N + 2.

A. 73
B. 75
C. 77
D. 79

Answer: C

Explanation: N=25. 3N+2 = 75+2 = 77.

Q36. If April 1 is Monday, what day will April 30 be?

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

Answer: B

Explanation: April 30 is 29 days after April 1. 29 mod 7 = 1, so Monday + 1 day = Tuesday.

Q37. Starting from C (3), add 4, 6, 8 and 10 to alphabet positions. What is the final letter?

A. D
B. E
C. F
D. G

Answer: B

Explanation: 3+4+6+8+10=31. Since 31-26=5, the final letter is E.

Q38. P is the father of Q. R is Q's sister. S is R's son. What is S to P?

A. Son
B. Grandson
C. Nephew
D. Brother

Answer: B

Explanation: R is P's daughter and S is R's son. Therefore S is P's grandson.

Q39. Heights in ascending order are constrained as: A is shorter than B, C is taller than B, D is shortest. Which order works?

A. D, A, B, C
B. A, D, B, C
C. D, B, A, C
D. D, A, C, B

Answer: A

Explanation: D is shortest; A is shorter than B; C is taller than B. D, A, B, C satisfies all clues.

Q40. X is wife of Y. Z is brother of Y. W is daughter of X and Y. What is Z to W?

A. Father
B. Maternal uncle
C. Paternal uncle
D. Cousin

Answer: C

Explanation: Z is brother of W's father Y, so Z is W's paternal uncle.

Achievers Section

Q41. January 1 is Friday. What day is March 1 in a non-leap year?

A. Sunday
B. Monday
C. Tuesday
D. Wednesday

Answer: B

Explanation: January has 31 days and February has 28 days. 59 days after Jan 1 gives 59 mod 7 = 3. Friday + 3 = Monday.

Q42. Letter positions follow 2, 6, 12, 20, ?. What letter corresponds to the missing position?

A. B
B. D
C. H
D. Z

Answer: B

Explanation: Differences are 4, 6, 8, so the next difference is 10. Missing position = 30, which wraps to position 4, D.

Q43. A is the mother of B. C is the brother of A. D is the daughter of C. What is D to B?

A. Sister
B. Cousin
C. Aunt
D. Niece

Answer: B

Explanation: C is B's maternal uncle. C's daughter D is B's cousin.

Q44. Times are 12.111, 12.109, 12.112, 12.108 and 12.110. What is the median time?

A. 12.109
B. 12.110
C. 12.111
D. 12.112

Answer: B

Explanation: Ascending order is 12.108, 12.109, 12.110, 12.111, 12.112. The median is 12.110.

Q45. A row must satisfy: P is not first; Q immediately follows R; S is after Q; T is first. Which works?

A. T, R, Q, P, S
B. R, Q, T, P, S
C. T, Q, R, S, P
D. T, R, P, Q, S

Answer: A

Explanation: T is first, Q immediately follows R, S is after Q, and P is not first.

Q46. March 1, 2020 was Sunday. What day was July 1, 2020?

A. Tuesday
B. Wednesday
C. Thursday
D. Friday

Answer: A

Explanation: From March 1 to July 1: 30 + 30 + 31 + 30 = 121 days. 121 mod 7 = 2. Sunday + 2 = Tuesday.

Q47. A sequence starts at D and adds 3, 6, 9, 12 to alphabet positions. What is the fifth letter?

A. G
B. H
C. V
D. Z

Answer: B

Explanation: D=4. Then 7(G), 13(M), 22(V), and 34 wraps to 8, which is H.

Q48. A is father of B. B is mother of C. D is brother of A. What is D to C?

A. Maternal uncle
B. Paternal uncle
C. Granduncle
D. Cousin

Answer: C

Explanation: D is brother of C's grandfather A, so D is C's granduncle.

Q49. At 4:40, what is the smaller angle between the hour and minute hands?

A. 80 degrees
B. 90 degrees
C. 100 degrees
D. 110 degrees

Answer: C

Explanation: Minute hand at 40 minutes is 240 degrees. Hour hand is 4x30 + 40x0.5 = 140 degrees. Difference = 100 degrees.

Q50. Prime code A=2, B=3, C=5, D=7. Word CAB is coded by multiplying values and taking digit sum to a single digit. What is the code?

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

Answer: C

Explanation: C x A x B = 5 x 2 x 3 = 30. Digit sum = 3 + 0 = 3.

Answer Key

Q No.	Ans.	Q No.	Ans.	Q No.	Ans.	Q No.	Ans.	Q No.	Ans.
1	A	2	C	3	A	4	C	5	A
6	A	7	A	8	D	9	B	10	B
11	A	12	B	13	C	14	C	15	B
16	A	17	A	18	C	19	B	20	C
21	B	22	B	23	C	24	C	25	C
26	C	27	C	28	B	29	C	30	B
31	D	32	A	33	B	34	B	35	C
36	B	37	B	38	B	39	A	40	C
41	B	42	B	43	B	44	B	45	A
46	A	47	B	48	C	49	C	50	C