



CREST Reasoning Olympiad (CRO)

Sample Paper

Pattern and Marking Scheme

Grade	Topic/Section	No. of Questions	Marks per Question	Total Marks
Grade 9	Logical Reasoning	40	1	40
	Achiever's Section	10	2	20
Grand Total		50		60

The total duration of the exam is 60 minutes.

Syllabus

Section 1: Series Completion, Analogy and Classification, Coding-Decoding, Blood Relations, Puzzle Test, Sequential Output Tracing, Direction Sense Test, Logical Venn Diagrams, Alphabet Test and Logical, Alpha-Numeric, Number, Mathematical Operations, Inserting the Missing Characters, Analytical Reasoning, Mirror Images and Water Images, Spotting Out The Embedded, Figure Matrix, Paper Folding and Paper Cutting, Grouping of Identical Figures, Cubes and Dice, Dot Situation, Construction of Squares and Triangles, Figure Formation and Analysis.

Achievers Section: Higher Order Thinking Questions - Syllabus as per Section 1

For more details, visit <https://www.crestolympiads.com/reasoning-olympiad-cro>

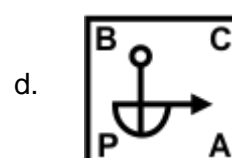
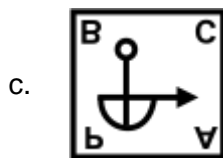
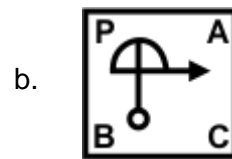
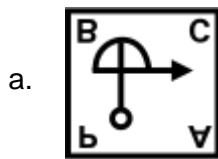
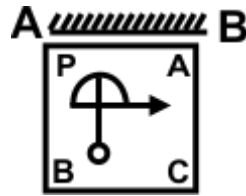
Logical Reasoning (Each Question is 1 Mark)

- In the following question, find out the correct pair of words which will make an appropriate analogical relationship between the two words to the left of the sign of double colon (::) and the same relationship between, the two words to the right of the sign of double colon (::).
FGEHJ : BCADE :: VWUXZ : ?
a. NKLMO
b. GFBC
c. HUKL
d. OPNQS
- In the following question, there is a certain relationship between the two given numbers on one side of (: :) and one number is given on another side of (: :) where another number is to be found from the given alternatives, having the same relationship with this number as the numbers of the given pair bear. Choose the best alternatives.
100 : 121 :: 144 : ?
a. 93
b. 160
c. 169
d. 426
- If in a certain code language, 'pick and choose' is written as 'ko ho po' and 'pick up and come' is written as 'to no ko po', then how will 'pick' be written in that language?
a. ko
b. po
c. ko or po
d. cannot be determined
- In the following question, all the equations except one have been solved according to a certain rule.
You are required to solve the unsolved equation following the same rule and to choose the correct answer out of the given options.
 $4 - 4 = 17$, $6 - 6 = 37$, $2 - 2 = 5$, $5 - 5 = ?$
a. 27
b. 26
c. 20
d. 24
- In this question, relationship between different elements is shown in the statements. The statement is followed by two conclusions. Study the conclusions based on the given statement and select the appropriate answer.
Statements: $K \geq L > M \geq N$
Conclusions: I. $N \leq K$ II. $N < K$
a. Both Conclusions I and II follows
b. Neither Conclusion I nor II follows
c. Only Conclusion II follows
d. Only Conclusion I follows
- In the following series, replace the question mark (?) with the suitable option.
1, 6, 15, ?, 45, 66, 91
a. 25
b. 26
c. 27
d. 28

7. In the following series, replace the question mark (?) with the suitable option.
3, 6, 18, 72, ?

- a. 144
- b. 216
- c. 288
- d. 360

8. In the following question, choose the correct mirror image from the answer figures.



9. The question given below contains three items. These items may or may not have some relation with one another. Each group of the items may fit into one of the diagrams (a), (b), (c), (d). Please indicate the diagram in which the group of items correctly fits into.

Boys, Class, Girls



10. If Jerry says, "Arya's father, Danny is the only son of my father-law, Mike", then how is Betty, who is the sister of Arya, related to Mike?

- a. Niece
- b. Daughter
- c. Wife
- d. Granddaughter

In which of the following expressions will the expression $A < D$ be definitely true?

- a. $A \geq B = C < D$
- b. $A > B = C \geq D$
- c. $A < B = C \leq D$
- d. $A > B < C \leq D$

17. In the following question, one number is wrong in the series. Find out the number.
4, 19, 49, 93, 154, 229, 319

- a. 93
- b. 229
- c. 319
- d. 19

18. What comes in place of question mark (?) in the following letter series?
ACE, BDF, CEG, ?

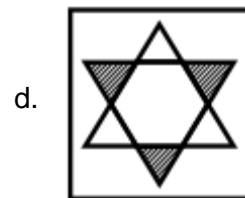
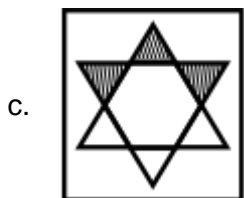
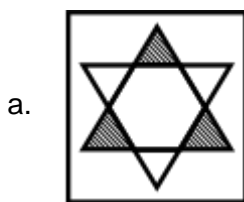
- a. DFE
- b. DEF
- c. DFH
- d. DEH

19. In the following letter series, some of the letters are missing which are given in that order as one of the alternatives below it. Select the correct alternative.

b_ab_b_aab_b

- a. bbba
- b. abba
- c. baaa
- d. aaba

20. From the given suitable options, find the water image of the object given in the question figure.



21. Looking at a woman sitting next to him, Harry said, "She is the sister of the husband of my wife". How is the woman related to Harry?

- a. Niece
- b. Daughter
- c. Sister
- d. Wife

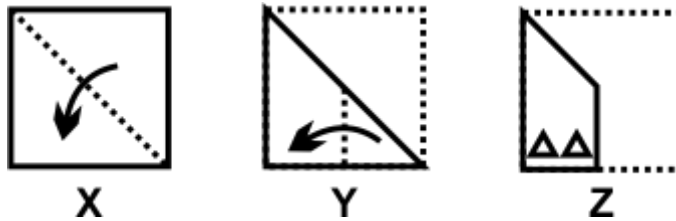
22. Read the following information carefully to answer the question given below it:

- I. 'A + B' means that 'A is the father of B'.
- II. 'A - B' means that 'A is the wife of B'.
- III. 'A x B' means that 'A is the brother of B'.
- IV. 'A ÷ B' means that 'A is the daughter of B'.

If it is given 'P ÷ R + S + Q', then which of the following is true?

- a. P is the daughter of Q
- b. Q is the aunt of P
- c. P is the aunt of Q
- d. P is the mother of Q

23. In the following question, a piece of paper is folded in the manner shown in the question figure(s). Select the figure out of the answer choices showing the unfolded pattern after the punches (cut).



24. Six faces of a cube are painted as below:

- I. Red opposite to black.
- II. Green in between red and black.
- III. Blue adjacent to white.
- IV. Brown adjacent to blue.
- V. Bottom face with red.

Find the colour opposite to brown.

- a. White
- b. Red
- c. Green
- d. Blue

25. Which set of letters completes the second pair in the same way as the first pair?
SCIENTISTS is to STSITNEICS, as DRAMATISTS is to _____.

- a. DTSITAMARD
- b. STSITAMARD
- c. ATISTSMARD
- d. MARDATISTS

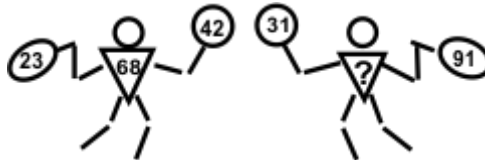
- a. GmT
- b. KpQ
- c. BeY
- d. AoZ

34. Find the missing term in the given series.

A5L, D25N, G125P, J625R, ?

- a. M3125U
- b. M3152T
- c. L3125U
- d. M3125T

35. Determine the term that would come in place of the question mark.



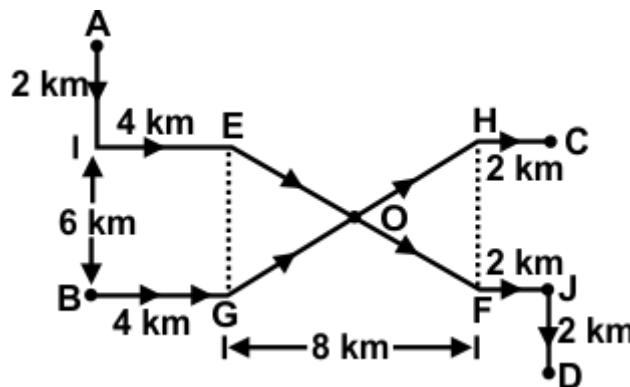
- a. 89
- b. 39
- c. 32
- d. 27

36. The post office is to the East of the school while my house is to the South of the school. The market is to the North of the post office. If the distance of the market from the post office is equal to the distance of my house from the school, in which direction is the market with respect to my school?

- a. East
- b. North-East
- c. North
- d. South-West

37. The figure below shows a map of interconnected roads, study the following map and answer the following question.

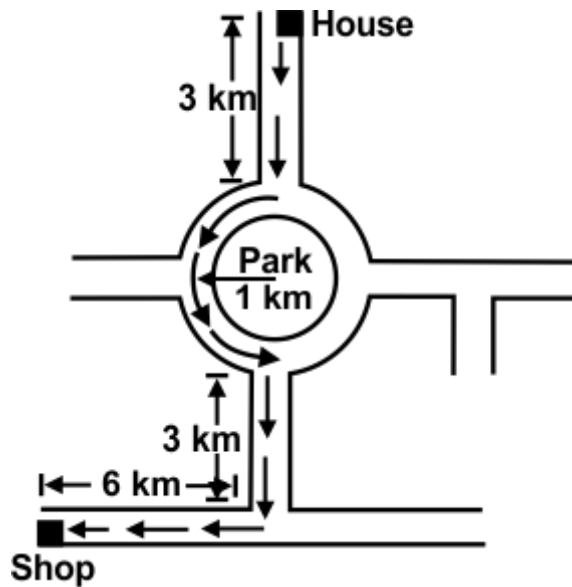
In the above map, O is the intersection of roads AD, BC and O is also the midpoint of roads GH and EF. If Rahul starts from point A and reaches to point C, then the total distance travelled by Rahul is _____.



- a. 18 km
- b. 16 km
- c. 14 km
- d. 12 km

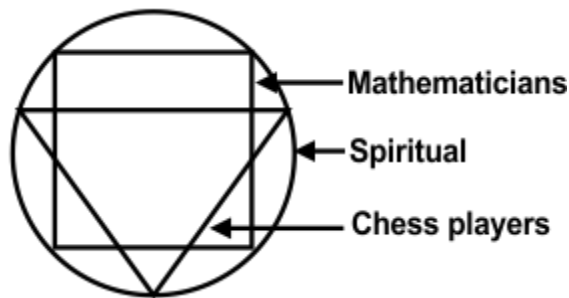
38. The figure below shows the path map between Richards's house and his shop. Study the map and answer the following question:

Here, the circular park is given whose radius is 1 km. The total distance travelled by Richard to reach his shop is:



- a. 12 km
- b. 15.14 km
- c. 14 km
- d. 16 km

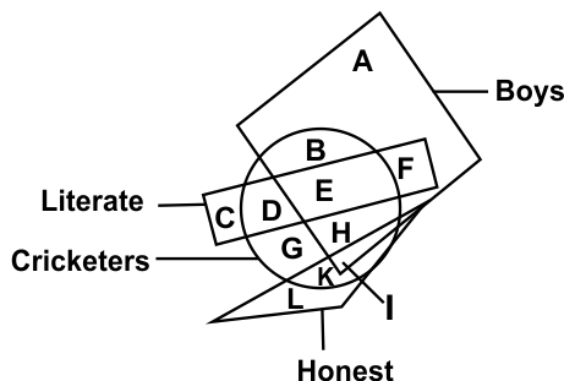
39. Study the given diagram carefully and spot out the false statement from among the four given options.



- a. All the spiritual persons are not chess players.
- b. Some mathematicians are chess players but each one of them is spiritual.
- c. All the chess players are not spirituals.
- d. Some of the spiritual persons are both mathematician and chess players.

40. Study the following diagram carefully and answer the following question.

Which region represents illiterate cricketers, who are dishonest boys? (Rhombus represents boys, circle represents cricketers, triangle represents honest and rectangle represents literate)



- a. B and I
- b. Only B
- c. B and H
- d. B, G and H

Achiever's Section (Each Question is 2 Marks)

41. In making decisions about important question, it is desirable to be able to distinguish between 'strong' arguments and 'weak' arguments. 'Strong' arguments are those which are both important and directly related to the question. 'Weak' arguments are those which are of minor importance and also may not be directly related to the question or may be related to a trivial aspect of the question. The question below is followed by two arguments numbered I and II. You have to decide which of the arguments is a 'strong' argument and which is a 'weak' argument?

Statement- Should the sale of tobacco products be restricted to only a few outlets in each city/town?

Arguments

- I. Yes, this will substantially reduce the consumption of tobacco products.
- II. No, those who want to purchase tobacco products should get them at convenient locations.

- a. Only argument I is strong
- b. Only argument II is strong
- c. Either argument I or argument II is strong
- d. Neither argument I or argument II is strong

42. In the question below, is given a statement followed by two assumptions numbered I and II. An assumption is something supposed or taken for granted. You have to consider the statement and the assumptions and decide which of the assumption(s) is/are implicit in the statement.

Statement- A advises B, "If you want to study English, join the institute, Y".

Assumptions

- I. 'B' listens to A's advice.
- II. Institute 'Y' provides good coaching for English.

- a. Only assumption I is implicit
- b. Only assumption II is implicit
- c. Either assumption I or assumption II is implicit
- d. Both assumptions I and II are implicit

43. In the question given below, there are two statements A and B. These statements may be either independent causes or may be effects of independent causes or of a common cause. One of these statements may be the effect of the other statement. Read both the statements and decide which of the following answer choices correctly depicts the relationship between these two statements.

- A. The Government of state 'X' decided to ban working of women in night shifts and also in late evening hours.
- B. The percentage of working women has a significant increase in the last one decade.

- a. Statement A is the cause and statement B is its effect
- b. Statement B is the cause and statement A is its effect
- c. Both the statements are independent causes
- d. Both the statements are effects of independent causes

44. In the question given below, there are two statements followed by two conclusions numbered I and II. You have to take the two given statements to be true even if they seem to be at

variance from commonly known facts and decide which of the given conclusion(s), logically follow (s) from the two given statements disregarding commonly known facts.

Statements

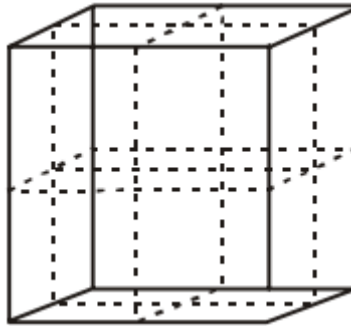
- I. No colour is a paint.
- II. No paint is a brush.

Conclusions

- I. No colour is a brush.
- II. All brushes are colours.

- a. Only conclusion I follows
- b. Only conclusion II follows
- c. Either conclusion I or conclusion II follows
- d. Neither conclusion I nor conclusion II follows

45. A cube which is painted red on the outer surface is 2 inches high, 2 inches wide and 2 inches across. If it is cut into 1 inch cubes as shown by dotted lines, then indicate the number of cubes which are painted red only on two sides.



- a. 8
- b. 0
- c. 4
- d. 6

46. In the question given below, there are two statements followed by two conclusions numbered I and II. You have to take the two given statements to be true even if they seem to be at variance from commonly known facts and decide which of the given conclusion(s), logically follow(s) from the two given statements disregarding commonly known facts.

Statements

- I. Some desks are tables.
- II. Some tables are chairs.
- III. Some chairs are benches.
- IV. Some benches are cots.

Conclusions

- I. Some chairs are desks.
- II. Some cots are tables.

- a. Only conclusion I follows
- b. Only conclusion II follows
- c. Either conclusion I or conclusion II follows
- d. Neither conclusion I or conclusion II follows

47. Read the following information to answer the following question.

Seven people A, B, C, D, E, F and G are planning to enjoy boating. There are only two boats and the following are to be kept in mind.

- I. A will go in the same boat in which E is to go.
- II. F cannot go in the boat in which C is unless D is also accompanying.
- III. Neither B nor C can be given the boat in which G is.
- IV. The maximum number of persons in one boat can be four only.

If F and B are in one boat, which of the following statements is true?

- | | |
|---------------------------|----------------------------------|
| a. G is in the other boat | b. D is in the other boat |
| c. C is in the other boat | d. E is with F and B in one boat |

48. The time taken by a swimmer S_1 to go to a certain distance upstream is the same as the time taken by another swimmer S_2 to swim the same distance downstream. A third swimmer S_3 , swims half the same distance upstream and returns back. The time taken by him is the same as that of S_1 and S_2 . The three swimmers, in decreasing order of their speeds, are:

- | | |
|--------------------|--------------------|
| a. S_2, S_3, S_1 | b. S_3, S_1, S_2 |
| c. S_1, S_2, S_3 | d. S_1, S_3, S_2 |

49. Read the information given below carefully and answer the question.

Six students A, B, C, D, E and F are selected to represent their school in six games, cricket, hockey, badminton, tennis, judo and athletics but not necessarily in the same order.

- One of them studies in class 10th, two in class 11th and three in class 12th.
- A plays hockey but doesn't study in class 10th.
- D plays cricket and studies in class 12th.
- Students of class 11th do not play tennis and are also not athletes.
- E studies in class 11th.
- The student selected to represent the school in hockey doesn't study in class 12th.
- C plays judo and studies in class 10th.

In which class does the student representing Tennis study?

- | | |
|---------------------|-----------------------------|
| a. 10 th | b. 11 th |
| c. 12 th | d. Insufficient information |

50. Kate starts from her house and covers 4 km in North direction, then she turns towards South-East and covers 10 km, after that she turns towards North and travels another 4 km to reach Tess's house. Calculate the shortest distance between Kate's and Tess's house.

- | | |
|----------|----------|
| a. 8 km | b. 18 km |
| c. 10 km | d. 6 km |

Answer Key

1.	d	2.	c	3.	c	4.	b	5.	c	6.	d	7.	d
8.	c	9.	d	10.	d	11.	c	12.	c	13.	d	14.	c
15.	d	16.	c	17.	a	18.	c	19.	d	20.	d	21.	c
22.	c	23.	c	24.	a	25.	b	26.	c	27.	b	28.	a
29.	b	30.	d	31.	d	32.	d	33.	b	34.	d	35.	b
36.	b	37.	a	38.	b	39.	c	40.	c	41.	a	42.	d
43.	d	44.	d	45.	b	46.	d	47.	a	48.	d	49.	c
50.	c												