



CREST Reasoning Olympiad (CRO)

Previous Year Paper (2023-24)

Class 10

Time Allowed: 1 hour

Maximum Marks: 60

- Additional **10 minutes** will be allotted to fill up information on the OMR Sheet, before the start of the exam.
- Fill in all the mandatory fields clearly on the OMR Sheet.
- There are a total of **50 questions** in this booklet comprising **2 sections** namely the **Logical Reasoning & Achievers' Section** consisting of **40 questions (1 mark each) & 10 questions (2 marks each)** respectively.
- There is no negative marking. The use of a calculator is not permitted.
- There is **only ONE correct option** to a given question.
- Use **HB Pencil / Ball point pen (Blue / Black) only** for marking the correct choice of answers on the OMR Sheet.
- Rough work is to be done in the space provided in the test booklet. Extra plain sheet may be provided by the school for the rough work.
- The OMR Sheet is to be handed over to the invigilator at the end of the exam.
- No candidate is allowed to carry any textual material, printed or written, bits of paper, any electronic device, digital watches, etc. inside the examination hall.
- The use of unfair means may result in the cancellation of the exam. Any such instances must be reported at **+91-98182-94134** or **info@crestolympiads.com**

DO NOT OPEN THIS BOOKLET UNTIL ASKED TO DO SO

FILL IN THE DETAILS

Candidate Name: _____

Class: _____ Section: _____

CREST ID: _____

Logical Reasoning (Each Question is 1 Mark)

1. A boy first goes in South direction, then he turns towards left and travels for some distance. After that, he turns right and moves a certain distance. At last, he turns left and travels again for some distance. Now, in which direction is he moving?

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

2. What should come in the place of question mark (?) in the following alpha-numeric series?
1CV, 5FU, 9IT, ?, 17OR

- a. 11LS b. 14JS
c. 15JS d. 13LS

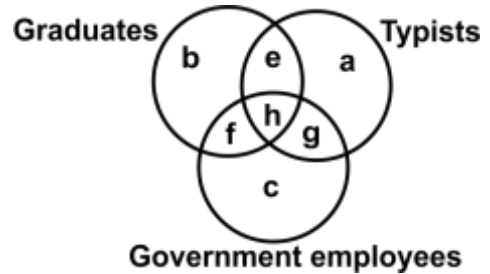
3. From the given suitable options, find the water image of the object given in the question figure:



- a. b.
c. d.

4. The figure given below is made of three circles intersecting one another. These circles represent graduates, typists and Government employees. The intersecting regions have been denoted by a, b, c, e, f, g and h, respectively. Study the diagram carefully and answer the question that follow:

Which of the following set of letters represents people with exactly two qualities?



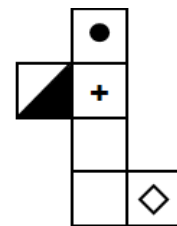
- a. e, f, h, g b. g, f, e
c. a, b, c d. a, b, c, h

5. Find the next pair of letters in the series given below:
WB, TF, QJ, NN, KR, ?

- a. HV b. IV
c. HU d. IU

6. In the question given below, an unfolded dice is given. Four answer choices are given in the form of complete dices. Select the correct answer choice which is formed by folding the unfolded dice:

Unfolded dice



- a. b.
c. d.

7. Nora correctly remembers that Kate's birthday is before Friday but after Tuesday. Danny correctly remembers that Kate's birthday is after Wednesday

but before Saturday. On which date is Kate's birthday?

- a. Monday b. Tuesday
c. Wednesday d. Thursday

8. In this question, the 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: $C < L < O = U = D \geq S > Y$

Conclusions: (i) $O > Y$, (ii) $C < D$

- a. Neither conclusion (i) nor conclusion (ii) follows
b. Both conclusion (i) and (ii) follows
c. Only conclusion (i) follows
d. Only conclusion (ii) follows

9. In the question given below, there is a statement followed by two conclusions numbered I and II. You have to assume everything in the statement to be true, then consider the two conclusions together and decide which of them logically follows beyond a reasonable doubt from the information given in the statement.

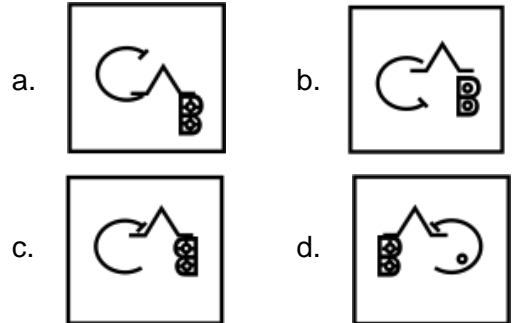
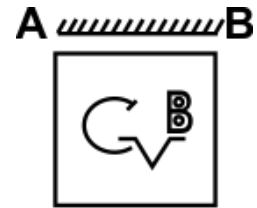
Statement- Sam is not the father of Harry. Harry is the son of Jack. Jack has three sons.

Conclusions

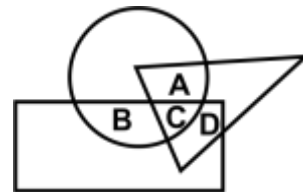
- I. Harry is the brother of Sam.
II. Jack is the father of Harry.

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

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



11. In the following diagram, the triangle represents doctors, the circle represents players and the rectangle represents singers. Which region represents doctors who are singers but not players?

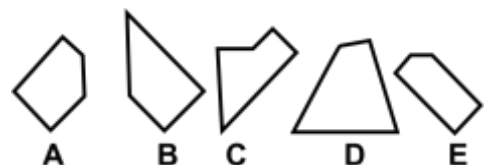


- a. A b. B
c. C d. D

12. Leo travels a distance of 10 ft from A to B. Then, he turns to left and travels 5 ft and again turns to left and travels 2 ft. Finally, he turns to the left and moves 5 ft. How far is he now from his original position?

- e. 5 ft f. 8 ft
g. 6 ft h. 12 ft

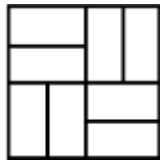
13. In the following question, five figures are given. Out of them, find the three figures that can be joined to form a square (you may increase or decrease the size of the given figures to fit):



- a. ABC b. BCD
c. BDE d. CDE

- a. FEUWXA b. UWEFCB
c. PMJGHI d. UKEPBO

14. How many rectangles are there in the figure given below?



- a. 21 b. 16
c. 22 d. 14

15. Study the given relationship and complete the following analogies from the options given:

(i) is to Volt, as Pressure is to (ii)

- (i). [A] Current, [B] Force, [C] Potential, [O] Mass
(ii). [W] Pascal, [X] Ohm, [Y] Candela, [Z] Meter

- a. AX b. CY
c. CW d. CZ

16. Which set of letters completes the second pair in the same way as the first pair?

ERASER is to GPCQGP, as JUDGE is to _____.

- a. LSFEG b. FLSGE
c. SLFEG d. LSGEF

17. In the following question, choose which number completes the second pair in the same way as the first pair:

125 : 216 :: ? : 1728

- a. 7129 b. 1331
c. 2718 d. 7182

18. If 'CARING' is coded as 'EDVGKC', then how is 'SHARES' written in that code?

19. In a certain code, 'SAFER' is coded as '5@3#2' and 'RIDE' is code as '2@%#', then how is 'FEDS' written in that code?

- a. 3#5 b. 3@%5
c. 3#%5 d. 3#%2

20. If $824 \times 196 = 189264$, then $738 \times 259 = ?$

- a. 738259 b. 793582
c. 275398 d. 259738

21. Use the relationships defined below to solve question.

- i. 'P x Q' means 'P is the father of Q'.
ii. 'P * Q' means 'P is the sister of Q'.
iii. 'P + Q' means 'P is the brother of Q'.
iv. 'P - Q' means 'P is the mother of Q'.
v. 'P ÷ Q' means 'P is the son of Q'.
vi. 'P = Q' means 'P is the daughter of Q'.

Which of the following means X is the grandmother of Z?

- a. $Z + X + Y$ b. $Z * X - Y$
c. $X - Y - Z$ d. $Z \div X = Y$

22. Use the relationships defined below to solve question.

- i. 'P x Q' means 'P is the father of Q'.
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iii. 'P + Q' means 'P is the brother of Q'.
iv. 'P - Q' means 'P is the mother of Q'.
v. 'P ÷ Q' means 'P is the son of Q'.
vi. 'P = Q' means 'P is the daughter of Q'.

If $Z = X - Y$, then which of the following is true?

- a. Z is the sister of Y
- b. Y is the grandfather of Z
- c. X is the mother of two daughters
- d. Z is the grandfather of Y

23. Find the missing terms in the given series:

a _ a _ _ b _ b

- a. b b a b
- b. b b a a
- c. b a a b
- d. a b b a

24. Find the wrong term in the given series:
PAL, QCO, REQ, SGU, TIX

- a. QCO
- b. REQ
- c. SGU
- d. TIX

25. Find the next/missing terms(s) in the given series:

2, 3, 10, 15, 26, 35, ?, ?

- a. 50, 63
- b. 53, 64
- c. 49, 63
- d. 57, 59

26. Which one set of letters, when sequentially placed at the gaps in the given letter series, shall complete it?
C F F _ C F _ C _ _ F C

- a. CFCF
- b. CFFC
- c. CFCC
- d. FCFC

27. Which one set of letters, when sequentially placed at the gaps in the given letter series, shall complete it?
A _ C H A A _ H A A C _

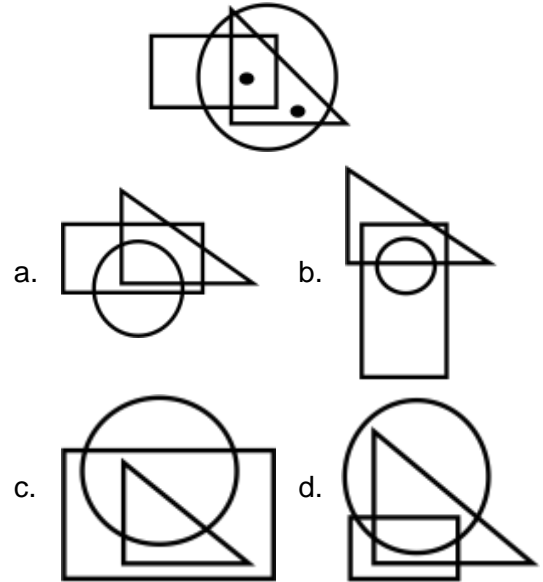
- a. HCC
- b. HAC
- c. AHC
- d. ACH

28. Which one set of letters, when sequentially placed at the gaps in the given letter series, shall complete it?

B B L Y _ B _ L Y C B B _ Y C

- a. BBC
- b. LBC
- c. BCL
- d. CBL

29. Select the option figure which satisfies the same conditions of the placement of dots as in the question figure:



30. If all the letters of the word "DISTORTION" are arranged in alphabetical order from left to right, then which of the following letters will be fifth from the right end of the new arrangement?

- a. S
- b. N
- c. R
- d. O

31. If all the vowels in the word "CONFUSION" are changed to the previous letter of the alphabet series and all the consonants are changed into the next letter of the alphabet series then how many letters occurs twice in the new arrangement?

- a. One
- b. Two
- c. Three
- d. Four

32. Select the odd letters from the given alternatives:

- a. XY
- b. DZ
- c. KL
- d. EO

33. Answer the question based on the following arrangement:
 M 7 Σ 8 L P @ ? 6 N B T Y 3 2 = E \$ 4
 9 © G H 5
- If all the numbers are deleted from the arrangement, then which of the following will be fifth to the right of the 13th element from the right end?

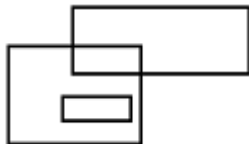
- a. B b. T
 c. Y d. N

34. Answer the question based on the following arrangement:
 B 2 M E J % R 5 @ N D I P 4 © T 3 9 F
 U 1 \$ 6 H J A 7 ★ G Q #

If all the symbols in the above arrangement are dropped, which of the following will be the 12th from the right end?

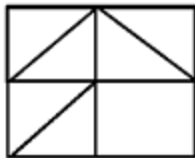
- a. 4 b. 9
 c. 3 d. F

35. How many rectangles are there in the given figure?



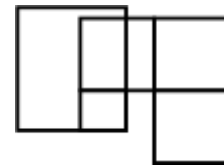
- a. 6 b. 5
 c. 4 d. 3

36. How many rectangles are there in the following figure?



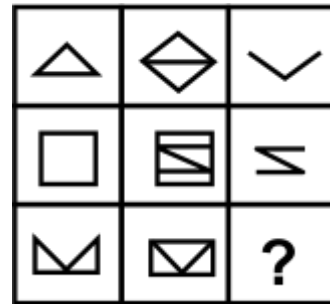
- a. 11 b. 10
 c. 8 d. 9

37. How many quadrilaterals are there in the given figure?



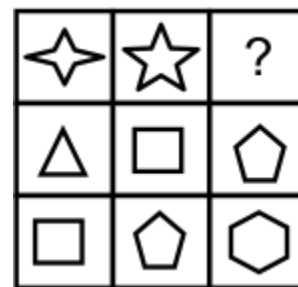
- a. 12 b. 9
 c. 10 d. 11

38. Select an appropriate figure from the given alternatives that would complete the figure matrix:



- a.
 b. |
- c.
 d. |

39. Select an appropriate figure from the given alternatives that would complete the figure matrix:



- a.
 b. |
- c.
 d. |

40. 'Talk' is related to 'Speak'. Similarly, 'Honest' is related to 'Truthful'. Following the same logic, 'Listen' is related to:

- a. Music
b. Ears
c. Hear
d. Sound

Achievers' Section (Each Question is 2 Marks)

41. 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. All players are doctors.
II. Some doctors are actors.

Conclusions

- I. Some doctors are players as well as actors.
II. All actors are doctors.
- 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

42. In this question, the 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: $D > E \leq F$, $J < F$

Conclusions: (i) $D > J$, (ii) $E < J$

- a. Only conclusion (i) follows
b. Only conclusion (ii) follows
c. Either conclusion (i) or (ii) is follows
d. Neither conclusion (i) nor (ii) is follows

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. James died while on the way to the hospital.
B. A car dashed into the motorcycle James was driving.

- 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 statements are independent causes
d. Both statements are effects of independent causes

44. Study the information given below and answer the question. Eight bureaucrats are having a round table conference with each one seated facing the centre. A is sitting two positions to the right of E. B is sitting between D and F. G, due to his personal enmity with A, doesn't sit next to him but instead sits diametrically opposite to D. The position of H is equidistant from either side of A. How many persons are sitting between E and G?

- a. 1
b. 3
c. 2
d. None of these

45. An ancient Puzzle Is given to five persons; the one who solves the puzzle in the least time would be proclaimed as a genius. E takes 5 min less than N but is able to solve it only 5 min after G has solved it. U takes half of the total time taken by both G and N. S takes 15 min less than the total time taken both G and N. Assuming that no two of them solve the puzzle in the same time, who among the five can be rightly proclaimed a genius?





- a. G b. U
c. S d. Either (a) or (c)

46. If $264 * 2 = 6$, $870 * 3 = 11$. then what should $735 * 5$ be?

- e. 05 f. 12
g. 16 h. 3

47. Select the option figure which satisfies the same conditions of the placement of dots as in the question figure:



- a.  b. 
- c.  d. 

48. A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule. The following is an illustration of input and

rearrangement.

Input: 86 king 98 mouse duck 72 cat 48 hat 56 90 parrot

Step I : 48 86 king mouse duck 72 cat hat 56 90 parrot 98

Step II: 48 56 86 king mouse duck 72 cat hat parrot 90 98

Step III: 48 56 72 king mouse duck cat hat parrot 86 90 98

Step IV: 48 56 72 cat king mouse duck hat parrot 86 90 98

Step V: 48 56 72 cat duck king mouse hat parrot 86 90 98

Step VI 48 56 72 cat duck hat king mouse parrot 86 90 98

Step VI is the last step of the rearrangement. As per the rules followed in the above steps, find out in the following question the appropriate steps for the given input.

Input: 66 juice roll 36 doll 80 love 44 baby 72 gone 40

Which of the following would be the final arrangement?

- a. 66 72 80 baby doll gone juice love roll 36 40 44
b. 36 40 44 baby doll gone juice love roll 66 72 80
c. 36 40 44 66 72 80 baby doll gone juice love roll
d. 36 40 44 baby love doll gone juice roll 66 72 80

49. A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

Input: 42 baby dolly 49 6 east 16 them output 100 shout 8 pond 4 jungle

Step I: baby 4 42 dolly 49 6 east 16
 them output 100 shout 8 pond jungle
 Step II: baby 4 dolly 6 42 49 east 16
 them output 100 shout 8 pond jungle
 Step III: baby 4 dolly 6 east 16 42 49
 them output 100 shout 8 pond jungle
 Step IV: baby 4 dolly 6 east 16 jungle 8
 42 49 them output 100 shout pond
 Step V: baby 4 dolly 6 east 16 jungle 8
 output 49 42 them 100 shout pond
 Step VI: baby 4 dolly 6 east 16 jungle 8
 output 49 pond 42 them 100 shout
 Step VII: baby 4 dolly 6 east 16 jungle
 8 output 49 pond 42 shout 100 them

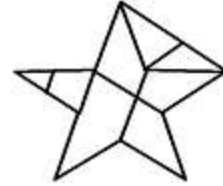
Step VII is the last step of the above input; as the desired arrangement is obtained. As per rules followed in the above steps, find out in the following question the appropriate step for the given input.

Input: ink 17 silent 121 beast 15 49
 Goal 9 power 64 3 food 20 weed

How many steps will be required to complete the rearrangement?

- a. Six
- b. Seven
- c. Eight
- d. Five

50. How many triangles are there in the given figure?



- a. 5
- b. 8
- c. 10
- d. 11

Answer Key

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