Mindbenz Logical Reasoning Olympiad (MLRO)

Sample Paper

Grade- 7

Maximum Marks: 60   Time Allowed – 55 Minutes
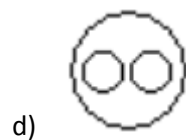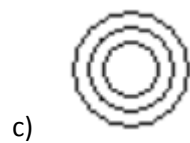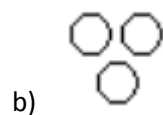
Section: A Basic of Logic (10 Questions × 1 mark = 10 marks)

1. Find the next term in the series: 3, 7, 13, 21, 31, 43, ?

a) 55

b) 57

c) 59

d) 61

2. 'Odometer' is to 'Distance' as 'Hygrometer' is to:

a) Pressure

b) Humidity

c) Wind Speed

d) Temperature

3. In a certain code, 'VECTOR' is written as 'WDDSPQ'. How is 'FORMAT' coded?

a) GPQLBS

b) GNSLBS

c) GNSLZS

d) GPQLZS

4. A man facing South turns 135° anti-clockwise. He then turns 180° clockwise. Which direction is he facing now?

a) South-West

b) South-East

c) North-West

d) North-East

5. Pointing to a photograph, a woman says, "He is the son of the wife of my husband's father." How is the man in the photograph related to the woman?

a) Son

b) Husband

c) Father-in-law

d) Brother-in-law

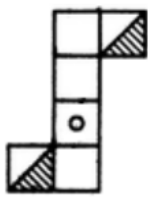6. Which of the following diagrams indicates the best relation between Author, Lawyer and Singer ?

a)

b)

c)

d)

7. If '÷' means '+', '+' means '×', '×' means '−', and '−' means '÷', find the value of: 16 - 8 ÷ 4 + 5 × 2.

a) 10

b) 8

c) 12

d) 20

8. How many capital letters in the word 'SYMMETRY' change their appearance when viewed in a mirror but remain unchanged in water?

a) 1

b) 2

c) 3

d) 0

2

9. Choose the box that is similar to the box formed from the given sheet of paper (X).

(X)   (1)   (2)   (3)   (4)

a) 1 and 3 only

b) 2 and 4 only

c) 3 and 4 only

d) 2 and 3 only

10. Find the odd one out.

a) Nitric Acid

b) Sulfuric Acid

c) Hydrochloric Acid

d) Sodium Hydroxide

Section: B Application Zone (10 Questions × 1 mark = 10 marks)

11. Find the next term in the alphanumeric series: Z2A, W5D, T10G, Q17J, ?

a) N26M

b) M25M

c) N28M

d) N26L

12. 8 : 504 :: 10 : ?

a) 990

b) 1000

c) 980

d) 1010

13. In a code language, VICE is coded as 46 and FAME is coded as 47. How will LION be coded? (Hint: Use reverse alphabet positions).

3

a) 60   b) 65

c) 70   d) 75

14. A person starts walking from point P. He walks 10m East, takes a 45° right turn and walks 15m. He then takes a 135° left turn and walks 10m. In which direction is he walking now?

a) North

b) North-West

c) South-East

d) East

15. Reena's husband's father is the only son of Amit's mother's father-in-law. Amit has no siblings. How is Reena related to Amit?
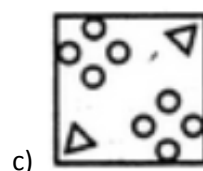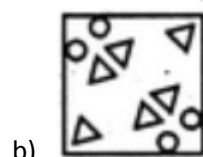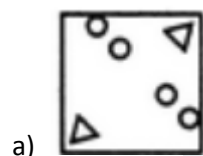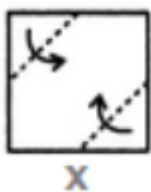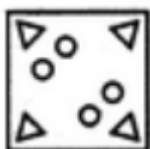
a) Sister-in-law

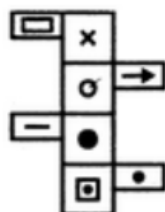b) Mother

c) Aunt

d) Wife

16. Choose a figure which would most closely resemble the unfolded form of Figure (Z).

a)

b)

c)

d)

17. Choose the box that is similar to the box formed from the given sheet of paper (X).
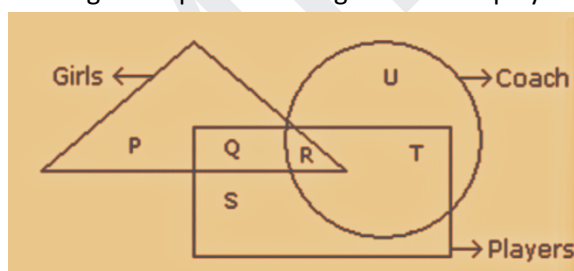

(X)   (1)   (2)   (3)   (4)

    a) 1 and 2 only
    b) 1 and 3 only
    c) 3 and 4 only
    d) 1, 2, 3 and 4

18. If the given interchanges are made in signs and numbers, which of the following equations would be correct? Interchanges: signs + and ×; numbers 4 and 5.

a) $5 \times 4 + 20 = 40$

b) $5 \times 4 + 20 = 85$

c) $5 \times 4 + 20 = 104$

d) $5 \times 4 + 20 = 95$

19. In the following figure triangle represents 'girls', square players and circle-coach. Which part of the diagram represents the girls who are player but not coach?

a) P

b) Q

c) R

d) S

20. Find the odd pair.

5

a) (11, 121)

b) (13, 169)

c) (15, 225)

d) (14, 198)

21. A series of words are coded as follows: CAT -> DBU, DOG -> EPH, PIG -> QJH. Following this pattern, if HEN is the fourth term, what is its code?
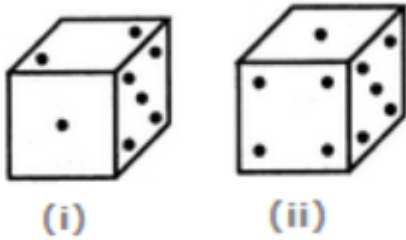
a) IFO

b) JFP

c) IGO

d) IFP

22. If ZEBRA is coded as 2652181, what will COBRA be coded as?

a) 3152181

b) 3182151

c) 3152811

d) 1182153

23. A's son B starts walking from his college. He walks 15 km North, turns right, and walks 20 km to reach his aunt C's house. C is A's sister. How far and in which direction is A's house from C's house, if A's house is 10 km East of the college?

a) 25 km, South-West

b) 15 km, South

c) sqrt(325) km, South-West

d) sqrt(225) km, South-East

6

24. Observe the dots on a dice (one to six dots) in the following figures. How many dots are contained on the face opposite to that containing four dots?

(i)   (ii)

a) 2

b) 3

c) 5

d) 6

25. If P denotes +, Q denotes -, R denotes ×, and S denotes ÷, what is the value of the expression: 18 R (4 P 6 S 2) Q 5?

a) 121

b) 108

c) 126

d) 131

26. EAT + THAT = APPLE. In this cryptarithmetic puzzle, what is the value of the word HEAT?

a) 9188

b) 8128

c) 9128

d) 8188

27. In a coded language, North is '101', East is '010', South is '111', and West is '000'. A drone flies 10km North, 20km East, and 10km South. What is the code for its final direction from its starting point?
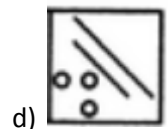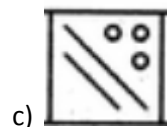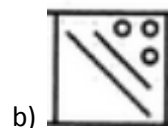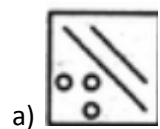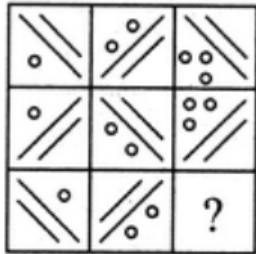
a) 101

b) 010

c) 111

d) 000

28. In a family of six (A, B, C, D, E, F), there are two lawyers, one doctor, one engineer, one professor, and one student. B, the engineer, is married to C. F, the student, is the son of D. A, the professor, is the sister of F. E is D's mother and a lawyer. What is the profession of D?
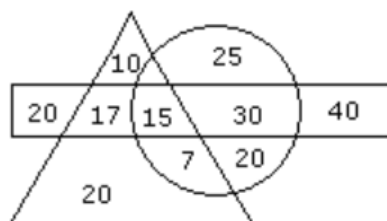
a) Lawyer

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b) Doctor

c) Engineer

d) Professor

29. Select a suitable figure from the four alternatives that would complete the figure matrix.

a)

b)

c)

d)

30. Study the diagram given below and answer the following question.

How many persons takes all the three ?

a) 20

b) 15

c) 25

d) 17

31. 2, 10, 30, 68, 130, ?

a) 222

b) 216

c) 250

d) 210

32. Fission : Fusion :: ? : ?

a) Disperse : Converge

b) Break : Join

c) Implosion : Explosion

d) Separation : Combination

33. A word is coded based on these rules: 1) If the letter's position is a prime number, code it to the next letter. 2) If the position is composite, code it to the previous letter. 3) The 1st position is special; code it as is. How is LOGICAL coded?

a) LPHHBBK

b) LPHJBBL

c) MNHHBBK

d) LPHHBDM

34. An airplane flies 20 km North from airport A. It then turns East and flies 60 km. It then turns North again and flies 15 km. Finally, it turns East and flies another 60 km to reach airport B. What is the shortest distance between airport A and B?

a) 125 km

b) 130 km

c) 145 km

d) 155 km

35. C is the wife of B. E is the son of C. A is the brother of B and father of D. F is the mother of B. What is the relation of F to E?
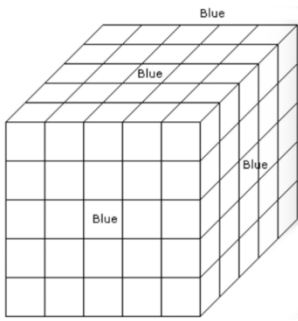
a) Mother

b) Aunt

c) Grandmother

d) Grandfather

36. All the faces of a cube are painted with blue colour. Then it is cut into 125 small equal cubes. How many small cubes will be formed having only one face coloured and how many small cubes will be

9

formed having no face coloured ?

a) 54 ,27

b) 54 ,23

c) 23, 57

d) 23 , 54

37. Let a # b = (a+b) × (b-a) and a $b = 2a - 3b. Find the value of (4 # 5)$ 3.

a) 9

b) 18

c) 0

d) -9

38. Find the odd one out.

a) (5, 13, 12)

b) (7, 25, 24)

c) (9, 41, 40)

d) (8, 17, 14)

39. If HOTEL is coded as 12, and LAMB is coded as 7, what is the code for WORKPLACE? (Hint: The code is related to the number of vowels).

a) 12

b) 15

c) 9

d) 6

40. Four friends—Ajay, Ben, Chris, and Dan—have different cars: a Swift, a Polo, a Figo, and a Baleno. Ajay and Chris played chess while the Polo owner and the Figo owner went for a drive. Ben does not own the Polo or the Baleno. The Swift owner is a friend of both Dan and Ben. Who owns the Figo?

a) Ajay

b) Ben

10

c) Chris

d) Dan

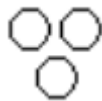## ANSWER KEY

Section A:

1. b) 57
2. b) Humidity
3. a) GPQLBS
4. a) South-West
5. b) Husband
6. b)
7. d) 20
8. d) 0
9. a) 1 and 3 only
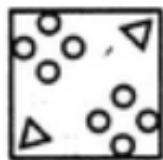10. d) Sodium Hydroxide

Section B:

11. a) N26M
12. a) 990
13. b) 65
14. a) North
15. c) Anut
16. c)
17. b) 1 and 3 only
18. c) 5 × 4 + 20 = 104
19. b) Q

11

20. d) (14, 198)

Section C:

21. a) IFO

22. a) 3152181

23. c) sqrt(325) km, South-West

24. a) 2

25. a) 121

26. a) 9188

27. b) 010

28. b) Doctor

29. c)

30. b) 15

31. a) 222

32. d) Separation : Combination

33. d) LPHHBDM

34. a) 135 km

35. c) Grandmother

36. a) 54 ,27

37. d) -9

38. d) (8, 17, 14)

39. a) 12

40. b) BEN

12