Grade 3: NGN LOGIC OLYMPIAD 2023 - Section B & C

Student Name: _____

Maximum Time: 75 minutes   Maximum Marks: 60

EXAM INSTRUCTIONS

1. There are **20 questions** in this paper.
   a. **Section A (Basic Level)**: 2 Marks, 10 Questions
   b. **Section B (Moderate Level)**: 3 Marks, 5 Questions
   c. **Section C (Difficult Level)**: 5 Marks, 5 Questions
2. No points will be deducted for each incorrect answer. Do not skip any questions. Use your logical reasoning skills to guess the answer.
3. Types of Questions: **Section A:** Pick one correct answer. **Section B:** Pick all correct answers. **Section C:** Fill in the blanks and pick all correct answers.
4. The questions in Sections B and C are based on questions related to social impact and global citizenship. The questions in Section B will focus on solving social issues logically. Section C will discuss international global problems that need rational solutions.
5. Pencils, erasers, rulers, and rough paper for calculations are allowed.
6. For some questions in Sections B and C, mark your answer by filling in the bubbles. For Eg: 8.

⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ● ⑨

1. International Day for Older Persons is celebrated on the 1st of October. Amani from Beirut, Lebanon, is hosting a lunch party for all the elderly in her local area on the 1st of October. Many older adults in Lebanon live in poor conditions as they cannot earn money.

If 18 days after the party is a Thursday, **choose** the dates that fall on a Saturday.

| (A) 30th September |
| --- |
| (B) 28th September |
| (C) 13th October |
| (D) 14th October |
| (E) 29th October |

Credit: NGN Research

2. In **2018**, there was a food shortage in Tunisia. As a result, many Tunisians struggled. So, Sarra decides to give cereal boxes to school children. A cereal box contains cereal shaped like alphabets and numbers. **Find the horizontal and vertical mirror image** of the given cereal bowl. **Choose all** the correct options from the following.

| (A) | (B) | (C) | (D) | (E) |
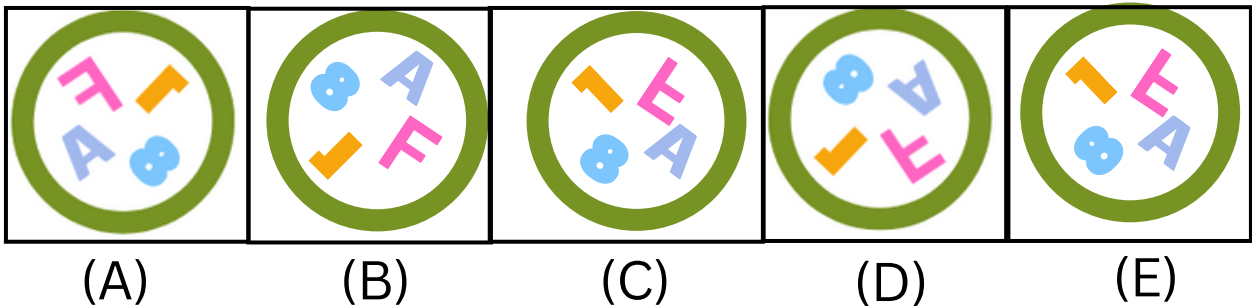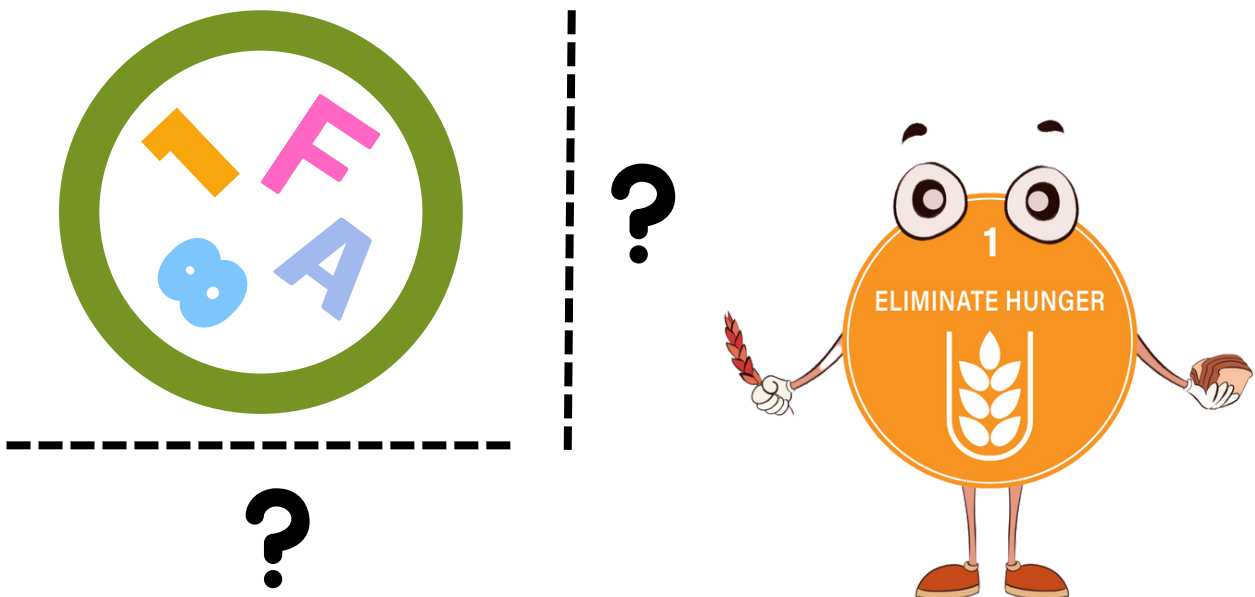
3. In **2010**, the football world cup was held in South Africa. So, many people and businesses in South Africa could earn money because of the World Cup. Pienaar's job was to print the names of football players on jerseys. **Find the missing alphabets** on the jersey if all the jerseys follow a pattern.

Credit: NGN Research

**Choose** all the correct options to complete the sequence.

ADGJ

QTWZ

M?SV

FI?O

O	P	M	L	N
(A)	(B)	(C)	(D)	(E)

4. In **2020**, most schools in the Philippines were closed due to a global disease. As a result, student's access to online education was limited. But, slowly, schools started opening in 2021. The given figure shows Jacob and his school's position. If Jacob faces north, which of the following paths will take him to school?

Credit: NGN Research
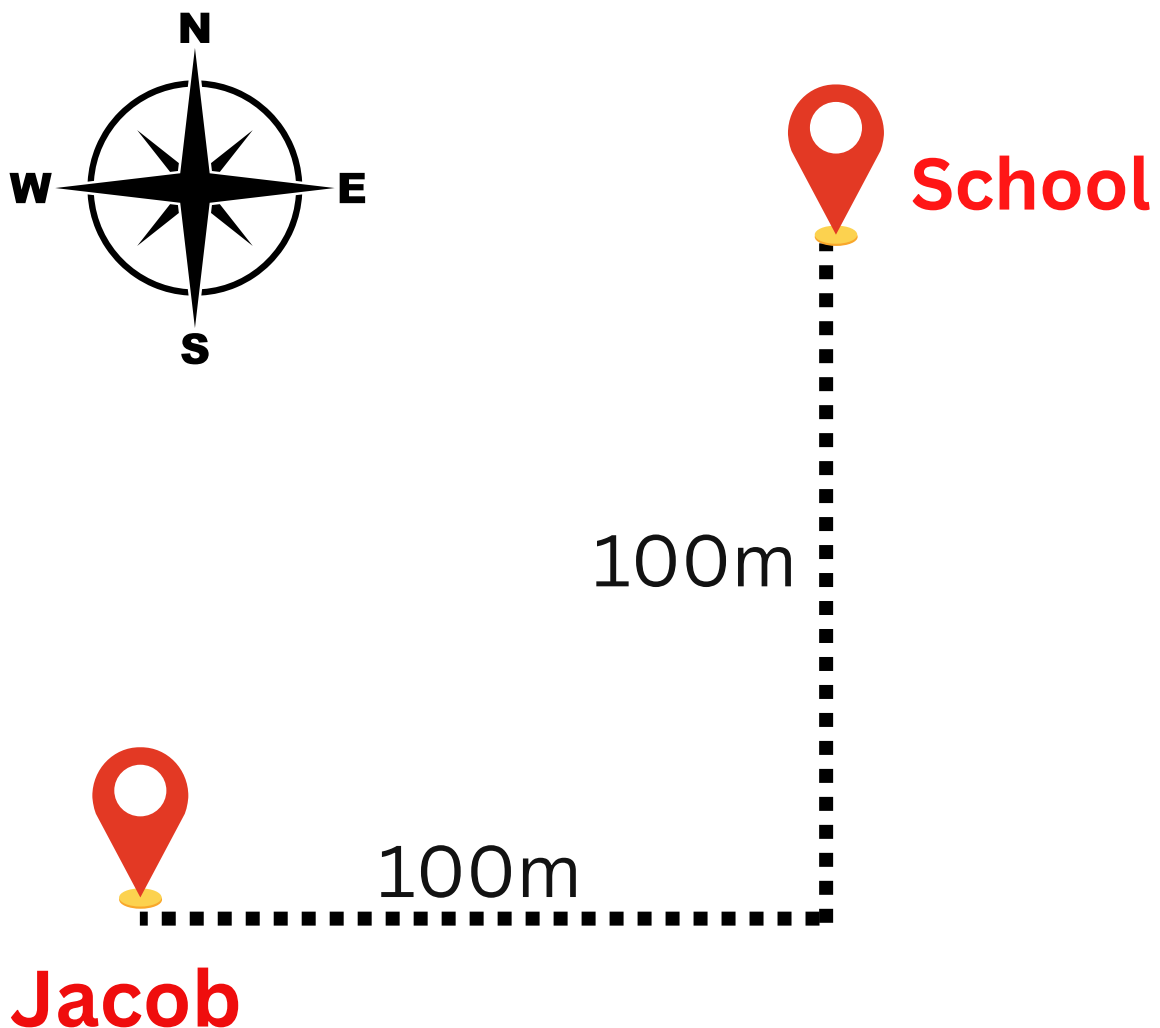
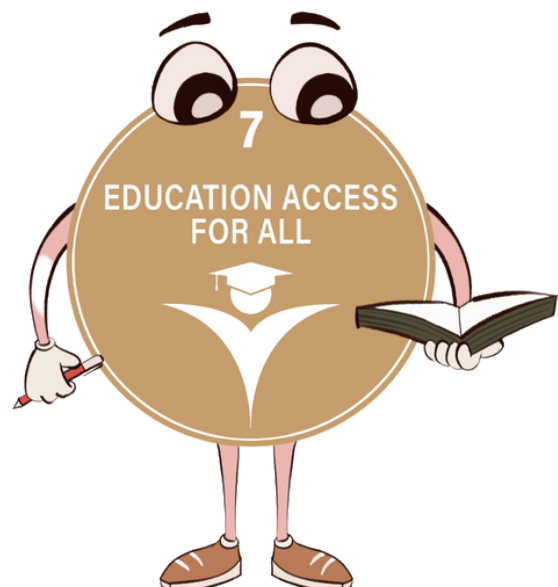**Choose** all the correct options.

(A) Turn right, walk 30 m, turn left, walk 100m, again turn right and walk 70m.

(B) Walk in the southeast direction.

(C) Walk in the northeast direction.

(D) Walk 100m, turn right and walk another 100m

(E) Turn right, walk 30 m, turn left, walk 100m, again turn right and walk 30m.

5. In **2022**, Sudan has faced poverty for years now. Sudan's war forced people to leave their homes. Sudan's poverty also increased due to a worldwide disease. **Find the assumptions** for the given statement.

Credit: NGN Research

Choose all the correct option(s).

Statement: Poverty in Sudan is rising.

(A) There is a war in Sudan.
(B) The water became polluted.
(C) People did not want to earn money.
(D) A disease spread all over the world.
(E) People left their homes for safety.

4
ELIMINATE & PREVENT POVERTY

6. **2023:** In India, a lot of plastic trash was produced every year, but only a small part of it is taken care of properly. The Central Pollution Control Board reported that only a part of this trash was recycled. This was harmful to the environment, especially ocean life. Ravi from Mumbai, India, writes a statement and four assumptions. **Choose all** the assumptions that support his statement.

Statement: Ocean pollution is a serious problem that requires urgent attention and action.

Assumption 1: Human activities like oil spills and dumping of plastic waste cause ocean pollution.

Assumption 2: Ocean pollution harms marine life, human health, businesses, and nature.

Assumption 3: Ocean pollution is a natural process and is not a significant problem.

Assumption 4: Reducing ocean pollution is not considered important due to other issues

(A) Assumption 1	(B) Assumption 2	(C) Assumption 3
(D) Assumption 4	(E) None of these	

Credit: NGN Research

7. **2023:** Many people in Africa lacked access to clean water, bathrooms, and soap, which led to the spread of cholera. In Abuja, Nigeria, Ayo gives soaps to Jaja to protect his family from disease. Ayo says to Jaja, "You are my daughter's uncle," how is Jaja related to Ayo?

Choose the correct answer.

Credit: NGN Research

(A) Brother
(B) Uncle
(C) Father
(D) Brother-in-law
(E) None of these

8. 2020: In the USA, the authorities added one robot per 1000 workers, resulting in many workers losing their jobs. To improve some workers' skills, Arya teaches logical questions, as shown here. **Choose all** the options to complete the given series.

Credit: MITSLOAN, mitsloan.mit.edu

B, BC, _____, EFGH, HIJKL, LMNOP, _____

(A) DEF
(B) CDE
(C) PQRST
(D) PQRSTU
(E) None of these

SECTION B: 3 MARKS EACH

9. **2023:** The population of Bangladesh increased rapidly over the past few decades, leading to pressure on natural resources, pollution, and deforestation. In Dhaka, Bangladesh, Khalid teaches how overpopulation can lead to an increase in population with the help of mirror images. **Choose all** the correct mirror images of the given figure.

Credit: NGN Research

MIRROR

?

MIRROR

?

(A)

(B)

(C)

(D)

(E)
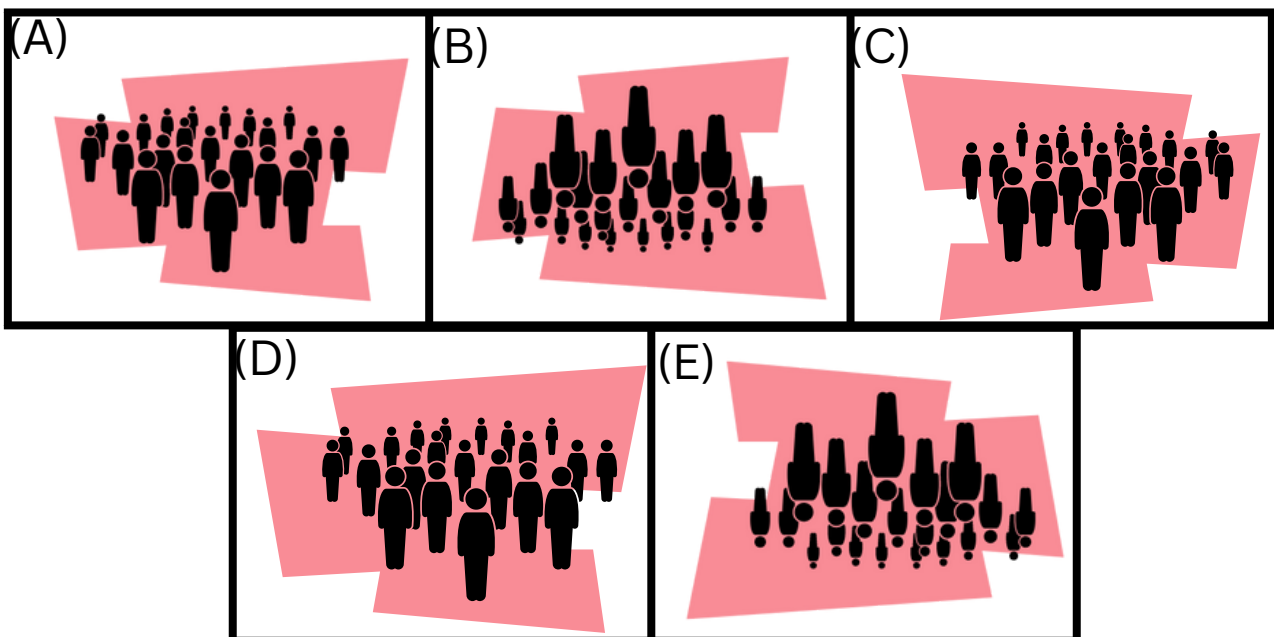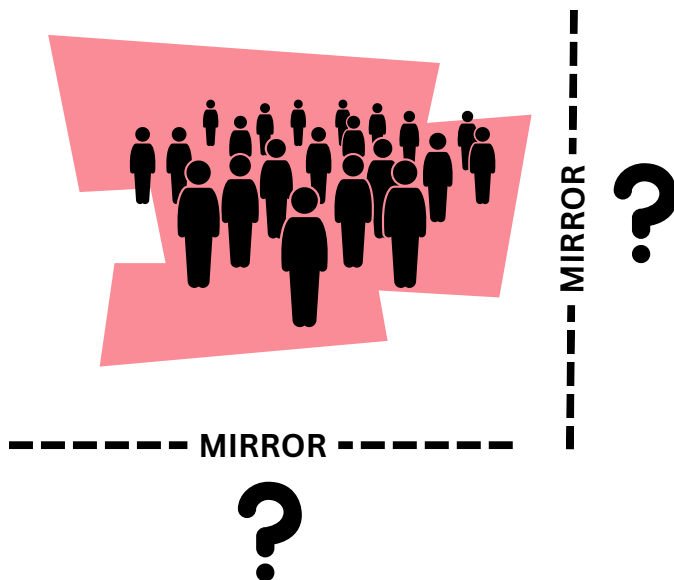
10. **2018:** Most Americans said that the STEM (Science, Technology, Engineering, and Mathematics) jobs paid better, but very few saw them as offering flexibility for family time. James is an engineer from Chicago, America. He is planning a family trip in April 2023. If April 1st of 2023 is a Saturday, **choose all** the dates on Monday.

Credit: Pew Research Center, pewresearch.org

| (A) 8th April |
| (B) 3rd April |
| (C) 18th April |
| (D) 31st April |
| (E) 24th April |

SECTION C: 5 MARKS EACH

11-12. **2017:** Water pollution became a major problem in India. Some lakes and rivers were very dirty. People were polluting the water by throwing trash such as plastic and household waste into it, spreading diseases. In polluted water, fish and other animals die, affecting the entire food chain. Many Indians make their living by fishing. Fishermen in Kerala tried to help by not throwing plastic back into the ocean. They were given special bags to store the plastic.

Credit: BORGEN PROJECT,
https://borgenproject.org

11. What solutions were taken to prevent water pollution in India?
Choose the correct option(s).

(A) Promoting the use of high-grade plastic.
(B) Government helping the cause.
(C) Cleaning water by removing plastic waste.
(D) Increase in fishing.
(E) Releasing only domestic waste into the sea.

12. Which figures below represent the impacts of water pollution in India?

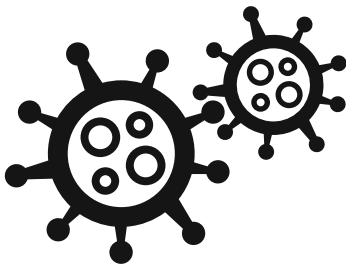**Choose** the correct option(s).

Hint: Take a look at the images given below.

Food shortage (A)	**Harsh climate** (B)
Spreading of diseases (C)	**Affected foodchain** (D)
Fishes dying (E)	
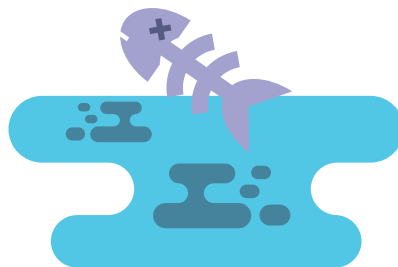
13-15. **2020-2023:** Following the Covid-19 pandemic, the United States experienced a shortage of teachers. Many schools had difficulties finding teachers. Sarah decided to teach math at her home to her child and some local children. In a row of seven, she made her students, Abdo, Wahiba, Kafia, Sabrina, Lisa, Tabitha, and Yuliana, sit in a row of seven.

Credit: NGN Research

- Yuliana is sitting in the middle.
- Abdo is sitting between Kaifa and Yuliana.
- Tabitha is sitting at the extreme right end and is not Kaifa's immediate neighbor.
- Lisa is sitting between Wahiba and Tabitha.

13. How many are sitting to the left of Wahiba? **Choose** the correct number.

(0) (1) (2) (3) (4) (5) (6) (7) (8) (9)

14. If Lisa switches places with Sabrina, how many will sit at Lisa's right? **Choose** the correct number.

(0) (1) (2) (3) (4) (5) (6) (7) (8) (9)

15. Who are the immediate neighbours of Kafia? **Choose** the correct option(s).
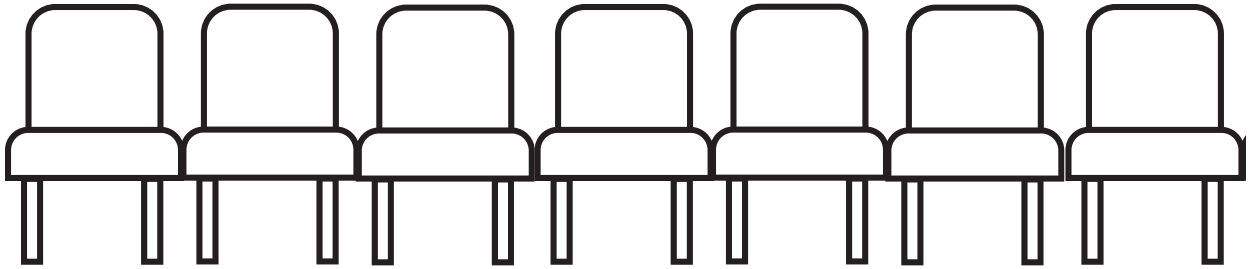
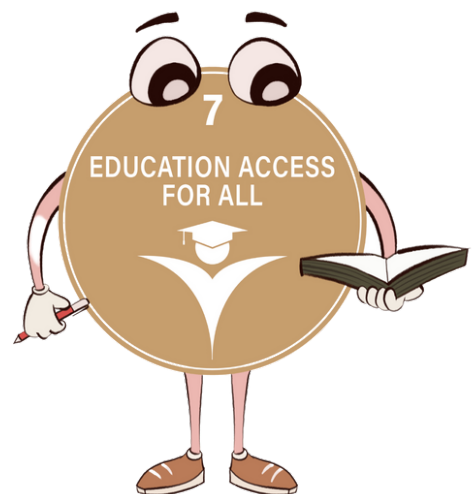| Lisa	Yuliana	Abdo	Tabitha	Sabrina
(A)	(B)	(C)	(D)	(E)

ANSWER KEY

Preparatory Classes Available
Step-Wise Solution Available
NGNLearning.com/Logic-Olympiad

1. (B), (D)

Step 1: October 19th is a Thursday.

Step 2: October 21st is a Saturday.

Step 3: Therefore, October 14th, 7th, and 28th are Saturdays.

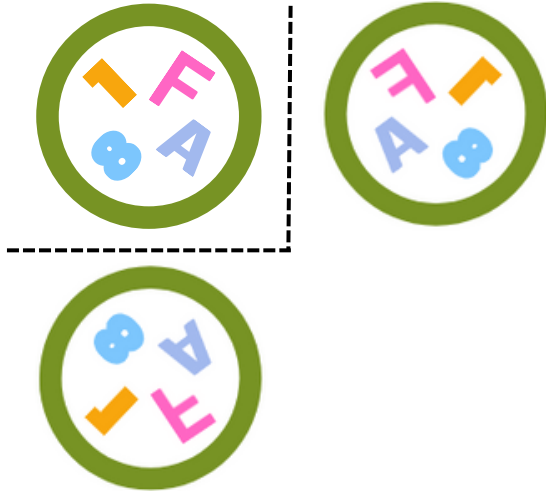| |
|---|
| (A) 30th September |
| (B) 28th September |
| (C) 13th October |
| (D) 14th October |
| (E) 29th October |

2. (A),(D)
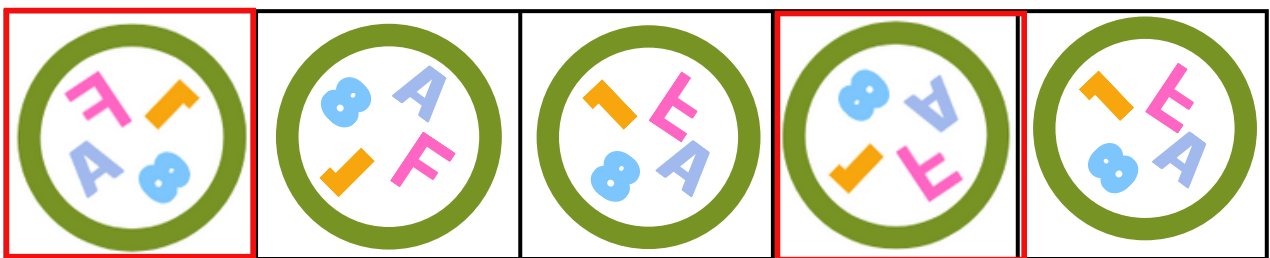
Step 1:

(A)	(B)	(C)	(D)	(E)

3. (B), (D)

Step 1: ABCDEFGHIJ
QRSTUVWXYZ
MNOPQRSTUV
FGHIJKLMNO

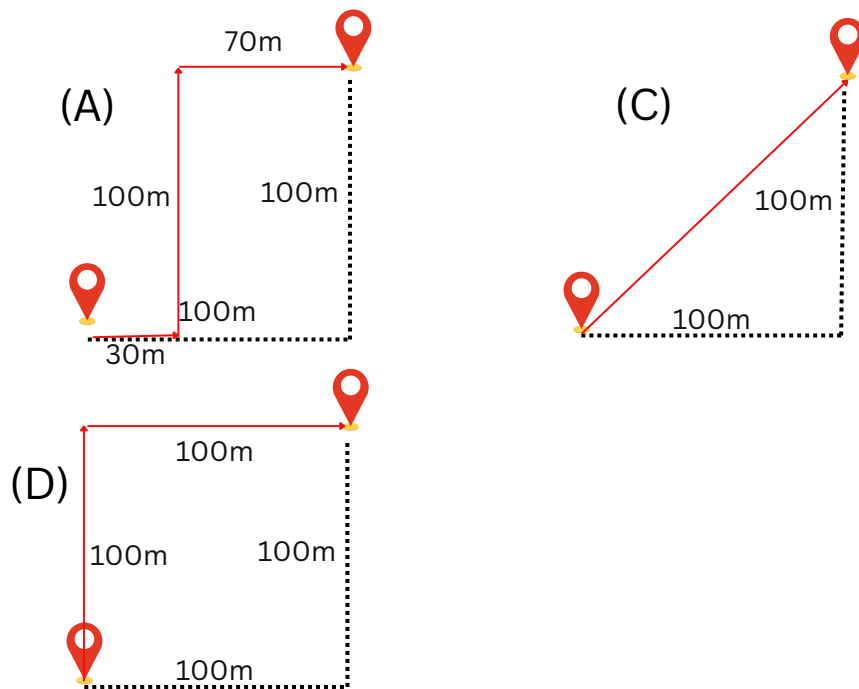| O	P	M	L	N
(A)	(B)	(C)	(D)	(E)
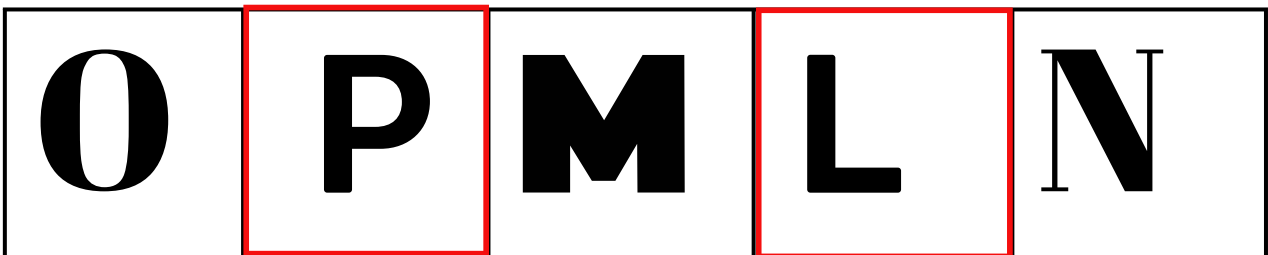
4. (A),(C), (D)

Step 1: Observe options (A), (C), and (D).

(A) Turn right, walk 30 m, turn left, walk 100m, again turn right and walk 70m.
(B) Walk in the southeast direction.
(C) Walk in the northeast direction.
(D) Walk 100m, turn right and walk another 100m.
(E) Turn right, walk 30 m, turn left, walk 100m, again turn right and walk 30m.

5. (A), (D), (E)

Step 1: The possible assumption for rising poverty in Sudan includes the ongoing war and disease spreading worldwide.

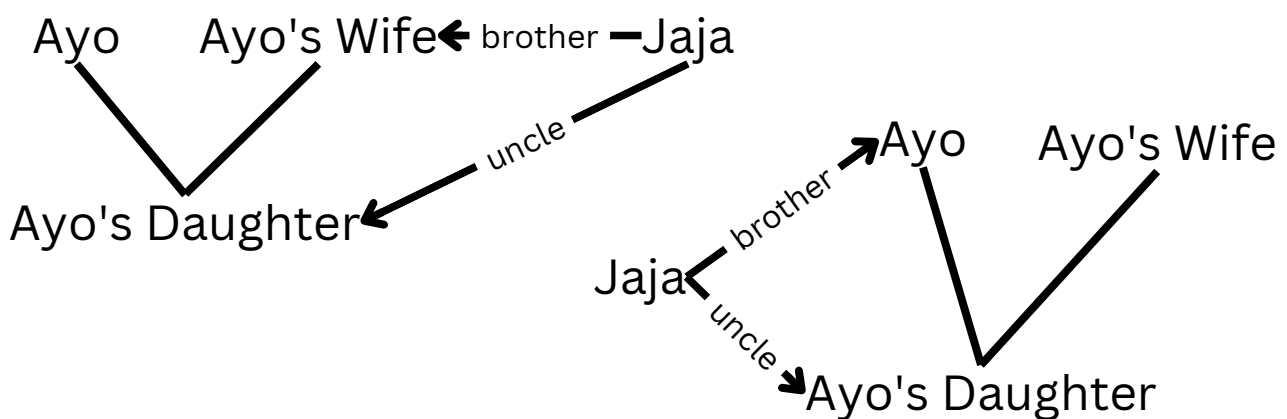| (A) There is a war in Sudan. |
| --- |
| (B) The water became polluted. |
| (C) People did not want to earn money. |
| (D) A disease spread all over the world. |
| (E) People left their homes for safety. |

6. (A), (B)

Step 1: Assumptions 1 and 2 support the statement given by Ravi, while others don't.

(A) Assumption 1	(B) Assumption 2	(C) Assumption 3
(D) Assumption 4	(E) None of these	

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7. (A), (D)

Step 1: There are two cases possible:

Ayo   Ayo's Wife ← brother — Jaja

Ayo's Daughter ← uncle

Jaja ← brother → Ayo   Ayo's Wife

Jaja — uncle → Ayo's Daughter

(A) Brother
(B) Uncle
(C) Father
(D) Brother-in-law
(E) None of these

8. (B), (D)

Step 1: The completed series will be:

B, BC, CDE, EFGH, HIJKL, LMNOP, PQRSTU

(A) DEF
(B) CDE
(C) PQRST
(D) PQRSTU
(E) None of these

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9. (A), (E)

Step 1: Notice the positions of the heads of the people in the figure.
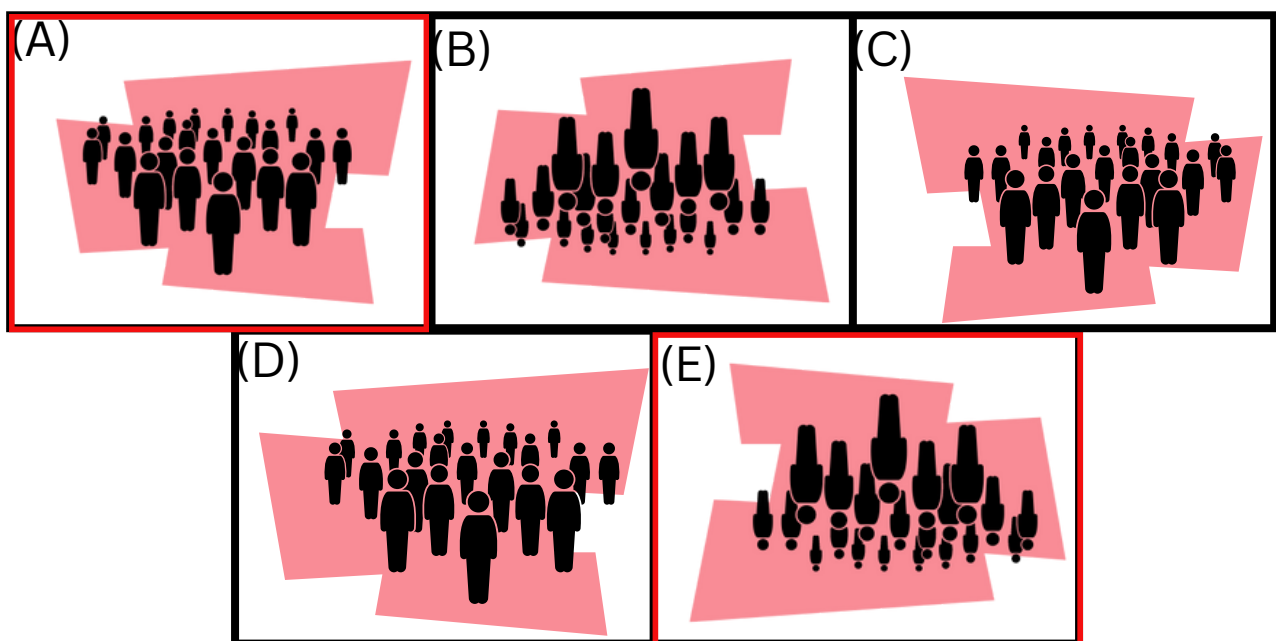
10. (B), (E)

Step 1: The month of April is shown here:

Mon	Tue	Wed	Thur	Fri	Sat	Sun
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

(A) 8th April
(B) 3rd April
(C) 18th April
(D) 31st April
(E) 24th April

11. (B), (C)

Step 1: Possible solutions to prevent water pollution includes help from the government, cleaning the ocean, and others.

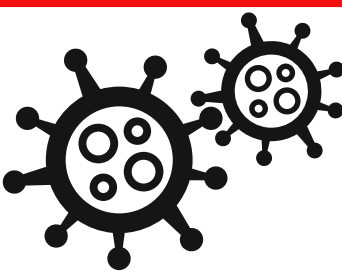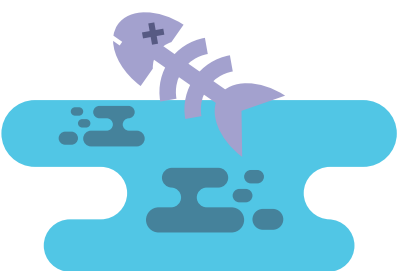| |
|---|
| (A) Promoting the use of high-grade plastic. |
| (B) Government helping the cause. |
| (C) Cleaning water by removing plastic waste. |
| (D) Increase in fishing. |
| (E) Releasing only domestic waste into the sea. |

12. (C), (D), (E)

Food shortage (A)	**Harsh climate** (B)
Spreading of diseases (C)	**Affected foodchain** (D)
Fishes dying (E)	

13-15.

Step 1: Yuliana is sitting in the middle.

_ _ _ Y _ _ _

Step 2: Abdo is sitting between Kaifa and Yuliana.

_ K A Y _ _ _

_ _ _ Y A K _

Step 3: Tabitha is sitting at the extreme right end and is not Kaifa's immediate neighbor.

_ K A Y _ _ T

Step 4: Lisa is sitting between Wahiba and Tabitha.

_ K A Y W L T

 S K A Y W L T
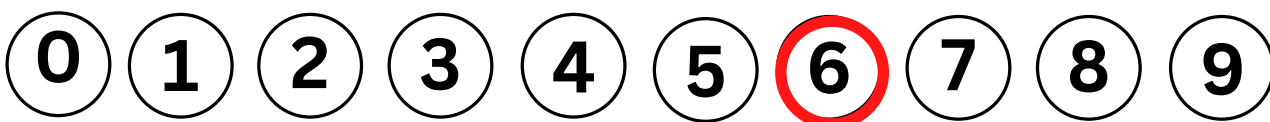
13. 4

Step 1:

 S K A Y W L T

⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

14. 6

Step 1:

L K A Y W S T

⓪ ① ② ③ ④ ⑤ **⑥** ⑦ ⑧ ⑨

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15. (C), (E)

Step 1:

S K A Y W L T

Lisa	Yuliana	Abdo	Tabitha	Sabrina
(A)	(B)	(C)	(D)	(E)