Grade 3: NGN LOGIC OLYMPIAD 2023

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. **Choose** one correct option and complete the series.

A F K P __

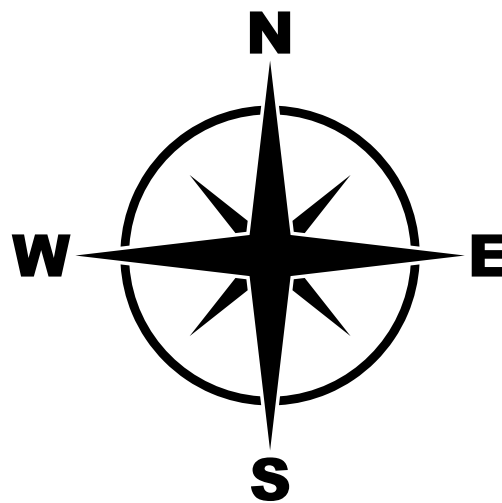| W	V	U	Z	Q
(A)	(B)	(C)	(D)	(E)

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2. In August, if the third day of the month is Tuesday. **Choose** which dates will be the fourth week, Monday, Thursday, and Saturday.

23, 26, 28	22, 25, 27	21, 24, 26	24, 27, 29	25, 28, 30
(A)	(B)	(C)	(D)	(E)

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3. Abeer is facing South and wants to meet Sean, who is in the East. Abeer turns back and then turns left by 90 degrees.
Choose which side Abeer should turn so that he reaches Sean.

(A) Turn left by 90 degrees
(B) Turn right by 90 degrees
(C) Don't turn
(D) Turn back
(E) Turn left by 270 degrees

4. If 'BRAKES' is coded as 'KESBRA.' **Choose** the code for 'STAIRS' from the given options.

(A) TRAISS	(B) IRSSTA
(C) ISRTSA	(D) IRSTSA
(E) ITRSSA	

5. **Choose** one option to complete the series.

H_ _S_HL_ _U_LO_U

(A) L,U,U,S,O,H,S	(B) L,O,U,O,S,H,S
(C) H,S,U,L,S,H,O	(D) L,O,S,O,U,O,S
(E) O,L,S,U,S,H,S	

6. Holly is facing north and started traveling 100m in the same direction. She then turned right and traveled another 100m. He then moved 200m south, turned right, and moved another 100m.
Choose how far she is from the original position.
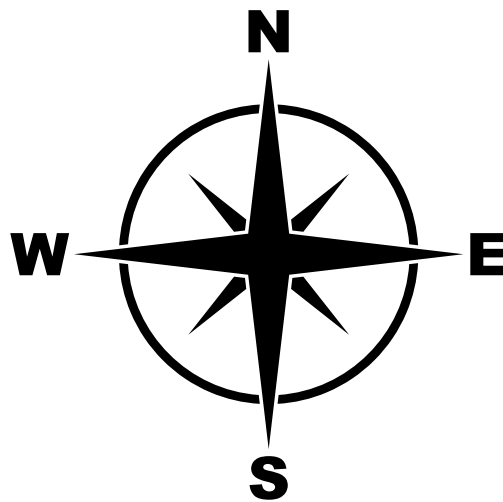
100m	300 m	400 m	200 m	500 m
(A)	(B)	(C)	(D)	(E)

7. **Choose** the next code in the series.

AEIM, BFJN, CGKO, ?

SHKO	RDLP	SDJO	RLPD	DHLP
(A)	(B)	(C)	(D)	(E)

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8. If the word 'EXTENSIONS' is coded as 'EEIS' and 'SEAHORSE' is coded as 'SHS.' What will be the code for 'HEALTHCARE'?
Choose the correct option.

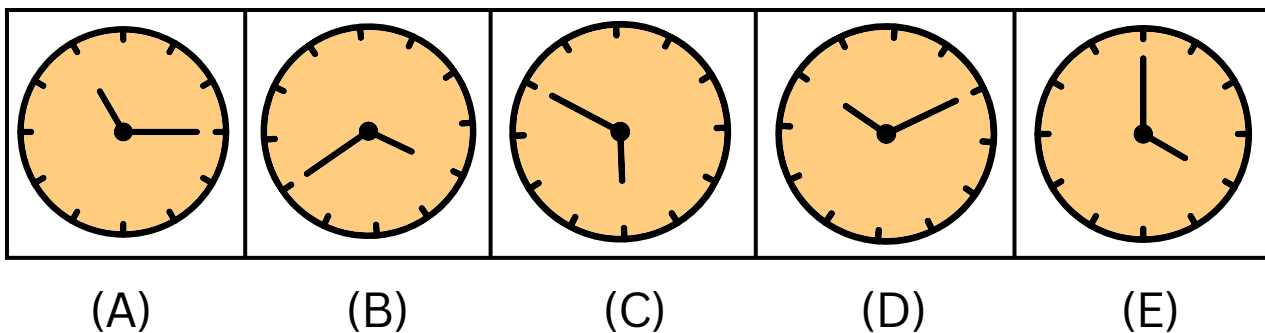| HLHE	HACR	HTCE	HLCE	HEHE
(A)	(B)	(C)	(D)	(E)

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9. If LM = 32 and MK = 24. How do we denote 'LK'? **Choose** the correct option.

43	22	33	42	23
(A)	(B)	(C)	(D)	(E)

10. **Choose** which among the given clocks' reflections will show a time of 8:00?

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

11. 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

12. 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) |
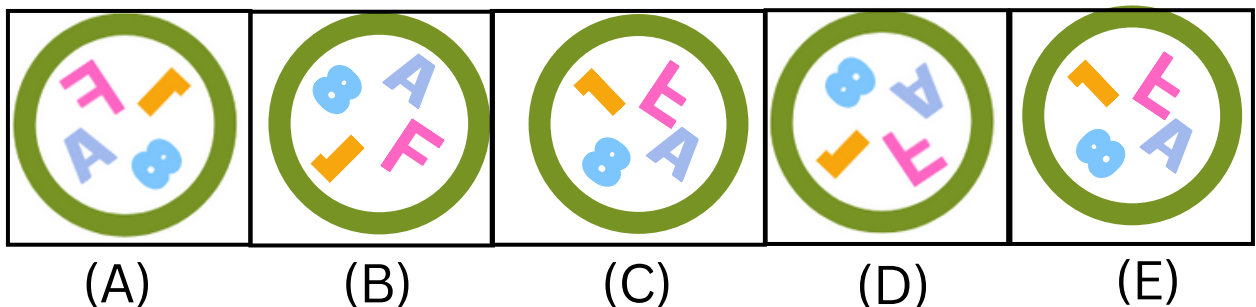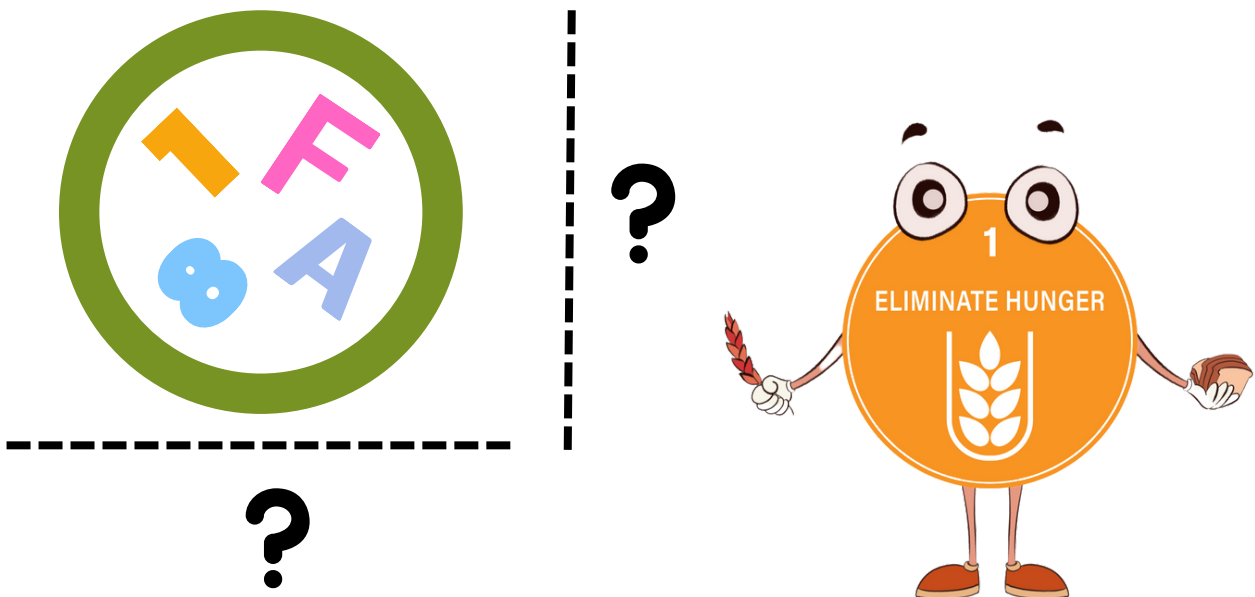
13. In **2010**, the football world cup was held in South Africa. So, many people and businesses in South Africa could earn money because of the World Cup. Pienaar's job was to print the names of football players on jerseys. **Find the missing alphabets** on the jersey if all the jerseys follow a pattern.

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)

14. In **2020**, most schools in the Philippines were closed due to a global disease. As a result, students 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?

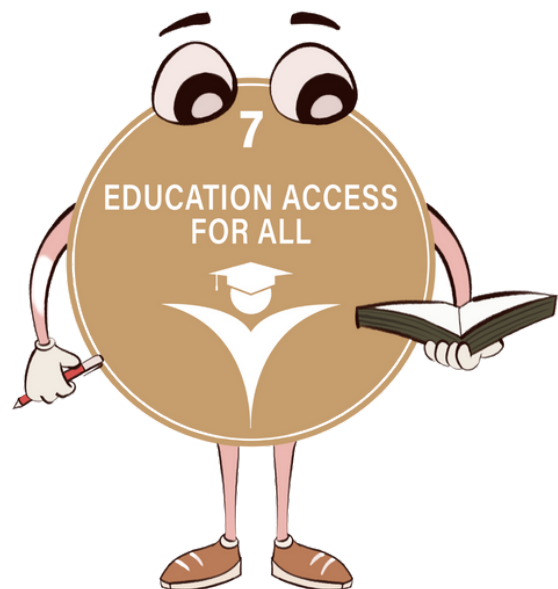Credit: NGN Research
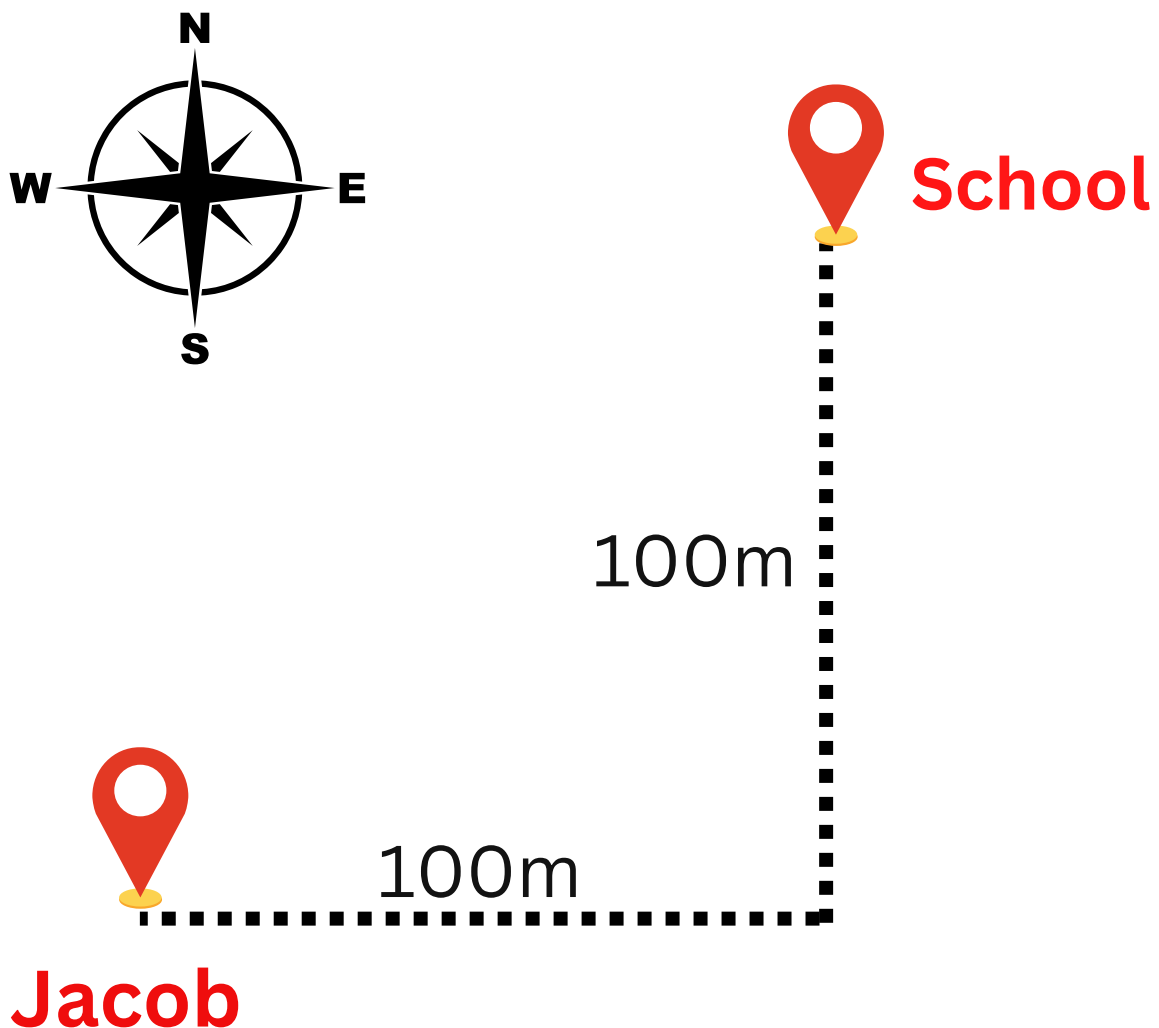
Choose all the correct options.

100m

100m

Jacob

School

(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.

15. 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

16-17. **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

16. 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.

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

Choose the correct option(s).
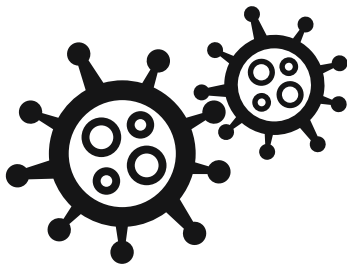
Hint: Take a look at the images given below.

Food shortage (A)	**Harsh climate** (B)
Spreading of diseases (C)	**Affected foodchain** (D)
Fishes dying (E)	
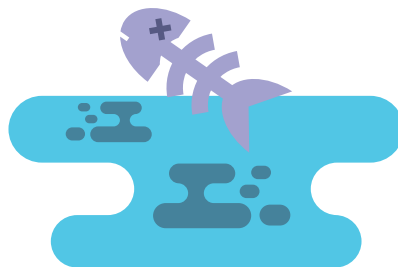
18-20. **2020-2023:** Following the Covid-19 pandemic, the United States experienced a shortage of teachers. Many schools had difficulties finding teachers. Sarah decided to teach math at her home to her child and some local children. In a row of seven, she made her students, Abdo, Wahiba, Kafia, Sabrina, 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.

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

0 1 2 3 4 5 6 7 8 9

19. 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

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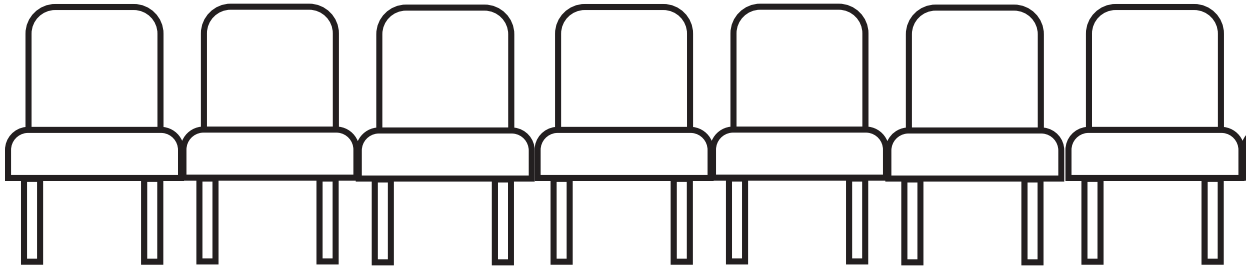
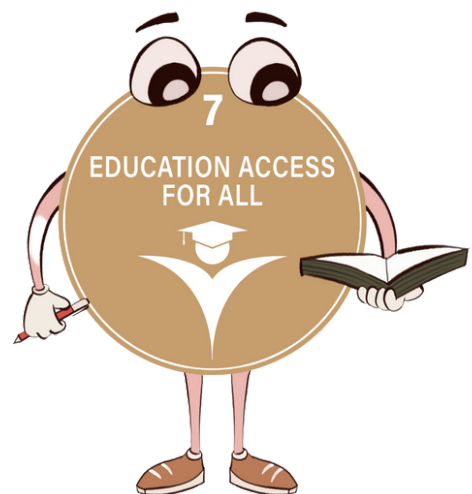| Lisa	Yuliana	Abdo	Tabitha	Sabrina
(A)	(B)	(C)	(D)	(E)

ANSWER KEY

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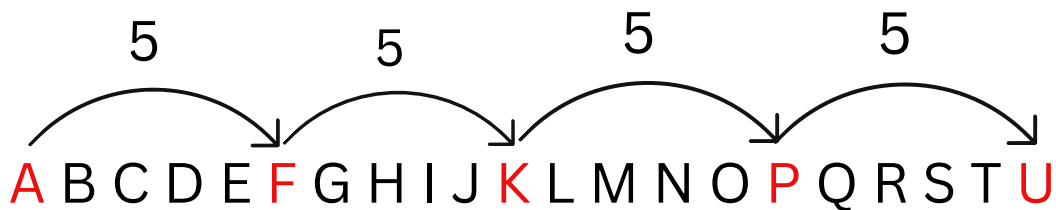**Step-Wise Solution Available**
NGNLearning.com/Logic-Olympiad

1. (C)

Step 1: A plus 5 letters are F.

Step 2: F plus 5 letters are K.

Step 3: K plus 5 letters are P.

Step 4: P plus 5 letters are U.

A B C D E F G H I J K L M N O P Q R S T U

W	V	U	Z	Q
(A)	(B)	(C)	(D)	(E)

2. (A)

Step 1: For the first week, since the 3rd day is Tuesday, Monday will be the 2nd, Thursday will be the 5th, and Saturday will be the 7th.

Step 2: for the second week, Monday, Thursday, and Saturday will be 9, 12, and 15 (adding 7 to each).

Step 3: Similarly, for the third week, Monday, Thursday, and Saturday will be 16, 19, and 21.

Step 4: Finally, for the third week, Monday, Thursday, and Saturday will be the 23, 26, and 28.

S	M	T	W	T	F	S
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	31				

23, 26, 28	22, 25, 27	21, 24, 26	24, 27, 29	25, 28, 30
(A)	(B)	(C)	(D)	(E)

3. (D)

Step 1: Abeer is facing north when he turns back.
Step 2: When he turned left, he faced the West.
Step 3: He has to turn around to turn East.
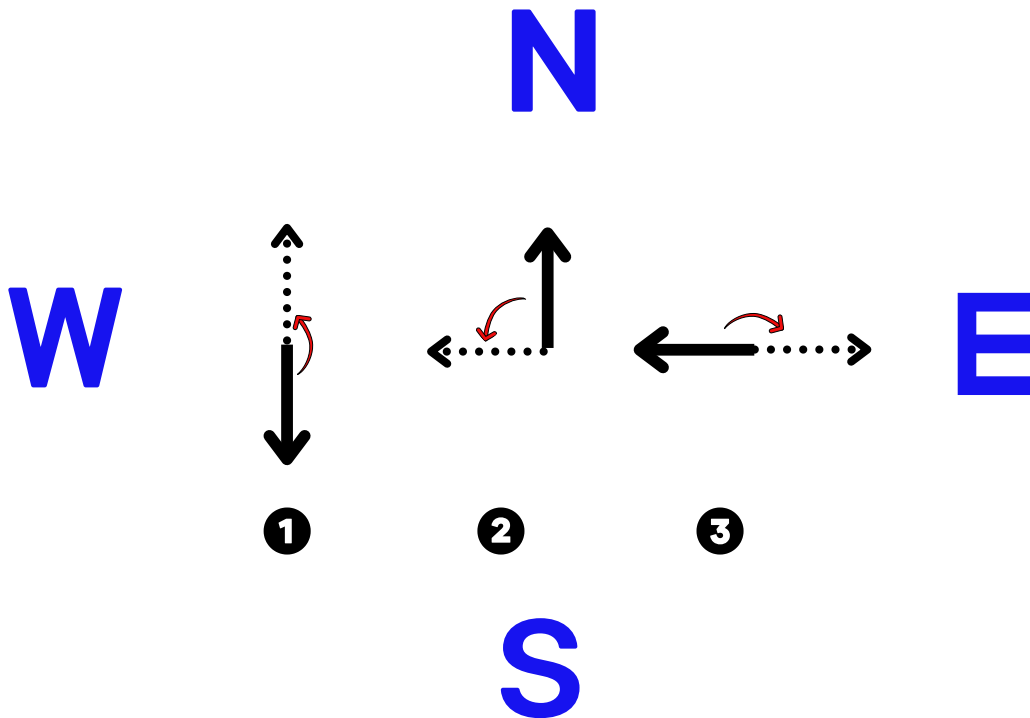
N

W   ❶   ❷   ❸   **E**

S

(A) Turn left by 90 degrees
(B) Turn right by 90 degrees
(C) Don't turn
(D) Turn back
(E) Turn left by 270 degrees

4. (B)

Step 1: 1st letter exchanges its position with 4th letter.

Step 2: 2nd letter exchanges its position with 5th letter.

Step 3: 3rd letter exchanges its position with 6th letter.

B R A K E S

K E S B R A

S T A I R S

I R S S T A

(A) TRAISS	(B) IRSSTA
(C) ISRTSA	(D) IRSTSA
(E) ITRSSA	

5. (B)

Step 1: The series starts with H.

Step 2: L comes immediately after H.

Step 3: O comes immediately after L.

Step 4: Thus, we find that S and U come after HLO.

HLOSU HLOSU HLOSU

(A) L,U,U,S,O,H,S	(B) L,O,U,O,S,H,S
(C) H,S,U,L,S,H,O	(D) L,O,S,O,U,O,S
(E) O,L,S,U,S,H,S	

6. (A)

Step 1: Holly travels 100m north, turns right, and travels 100m, which means she is in the northeast direction of the original position.

Step 2: Now she travels 200m south, putting her in the southeast direction of the original position.

Step 3: Now she turns right and moves 100m, which means she is south of the original position by 100m.

N

100m

100m

O

W   200m   **E**

100m

100m

S
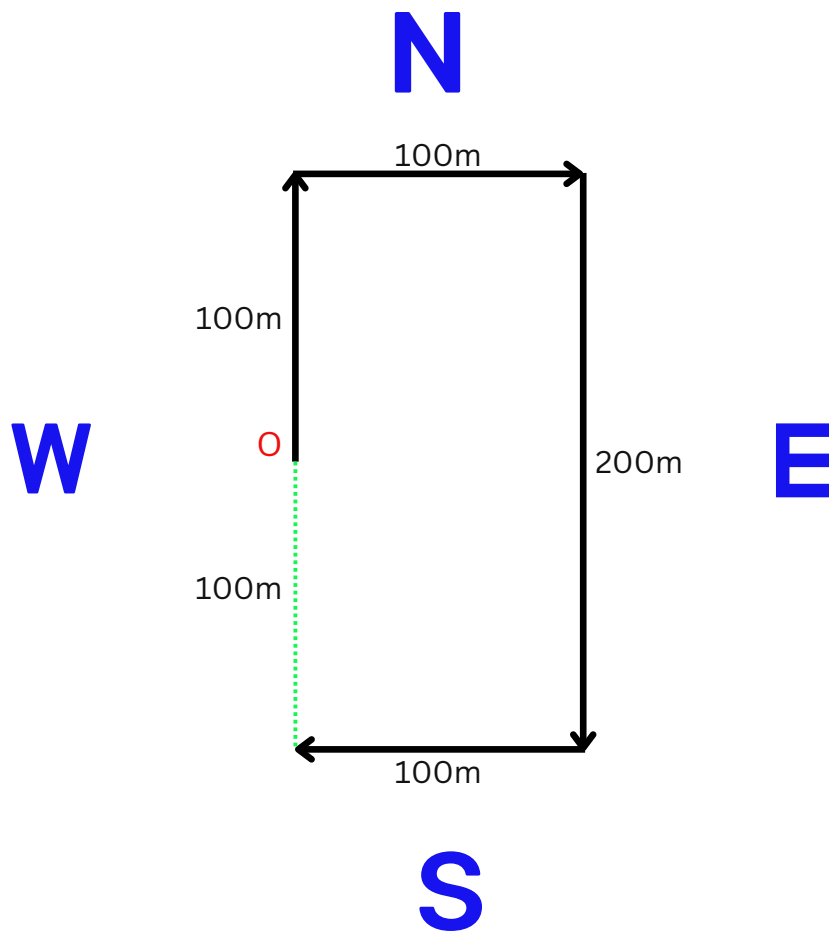
100m	300 m	400 m	200 m	500 m
(A)	(B)	(C)	(D)	(E)

7. (E)

Step 1: First letters of each code are A, B, and C. So the next letter will be D.

Step 2: Second letters of each code are E, F, and G. So the next letter will be H.

Step 3: Third letters of each code are I, J, and K. So the next letter will be L.

Step 4: First letters of each code are M, N, and O. So the next letter will be P.

AEIM, BFJN, CGKO, DHLP

SHKO	RDLP	SDJO	RLPD	DHLP
(A)	(B)	(C)	(D)	(E)

8. (D)

Step 1: The code skips two letters every time.

E X T E N S I O N S

EEIS

H E A L T H C A R E

HLCE

HLHE	HACR	HTCE	HLCE	HEHE
(A)	(B)	(C)	(D)	(E)

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9. (A)

Step 1: LM = 32, MK = 24.

Step 2: M and 2 are common in both. So 2 is code for M

Step 3: Since LM = 32, MK = 24, M is code for 2, 3 is code for L, and 4 is code for K.

Step 4: The code for LK is 43.

43	**22**	**33**	**42**	**23**
(A)	(B)	(C)	(D)	(E)

10. (E)

Step 1:

Mirror

8:00
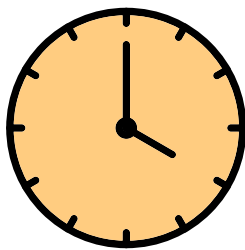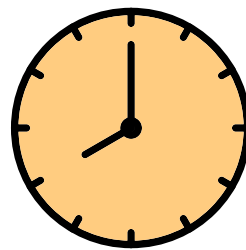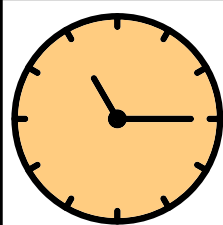
(A)	(B)	(C)	(D)	(E)
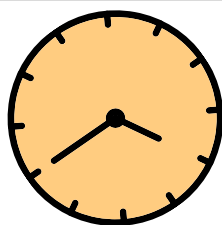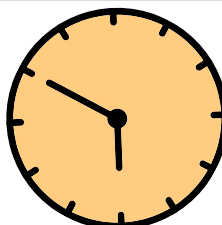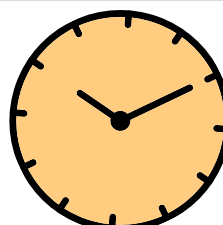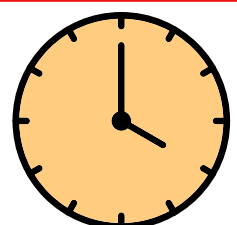
11. (B), (D)

Step 1: October 19th is a Thursday.

Step 2: October 21st is a Saturday.

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

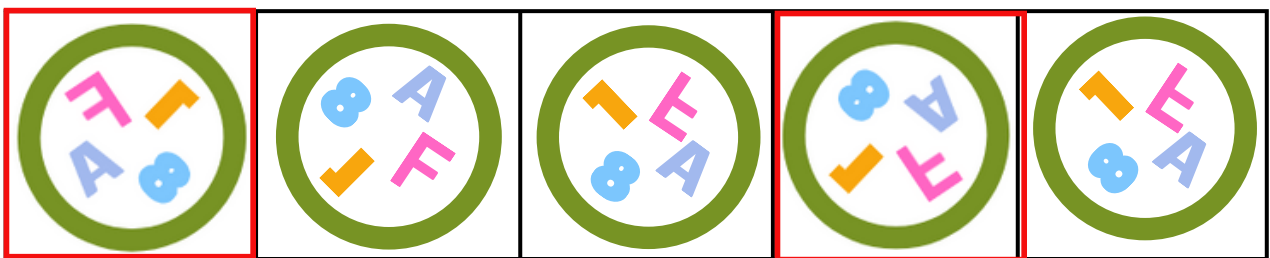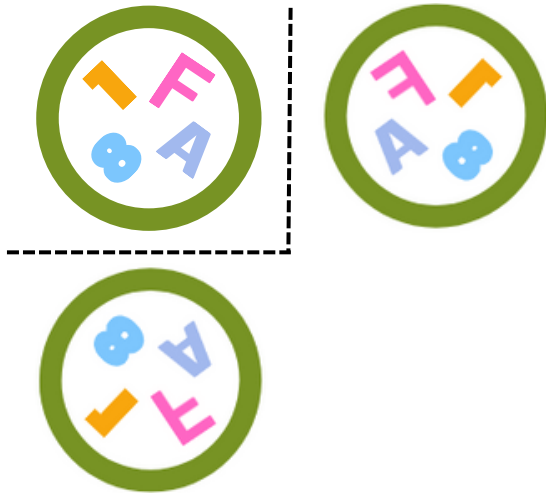| |
|---|
| (A) 30th September |
| (B) 28th September |
| (C) 13th October |
| (D) 14th October |
| (E) 29th October |

12. (A),(D)

Step 1:

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

13. (B), (D)

Step 1:

ABCDEFGHIJ
QRSTUVWXYZ
MNOPQRSTUV
FGHIJKLMNO

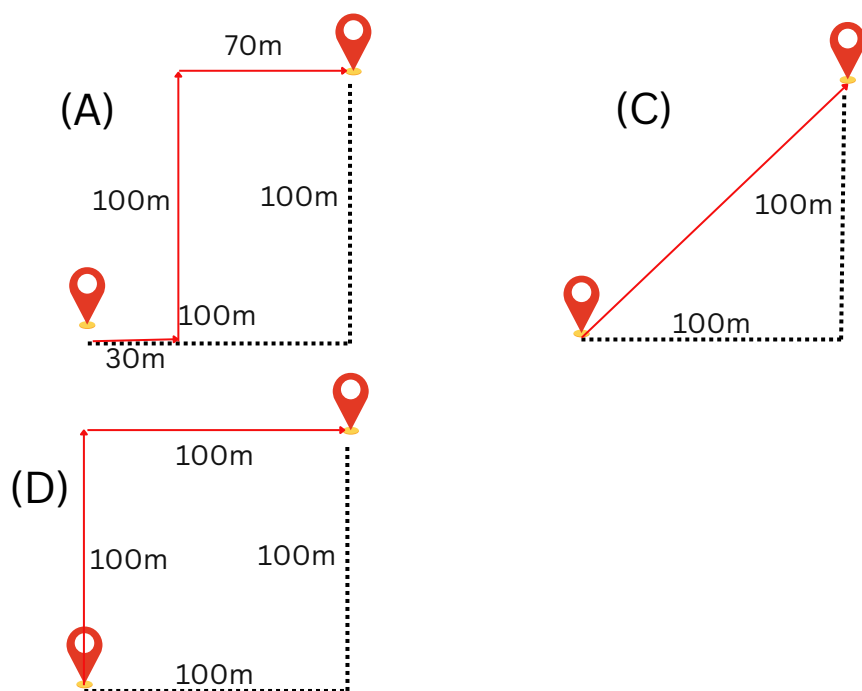| **O**	**P**	**M**	**L**	N
(A)	(B)	(C)	(D)	(E)
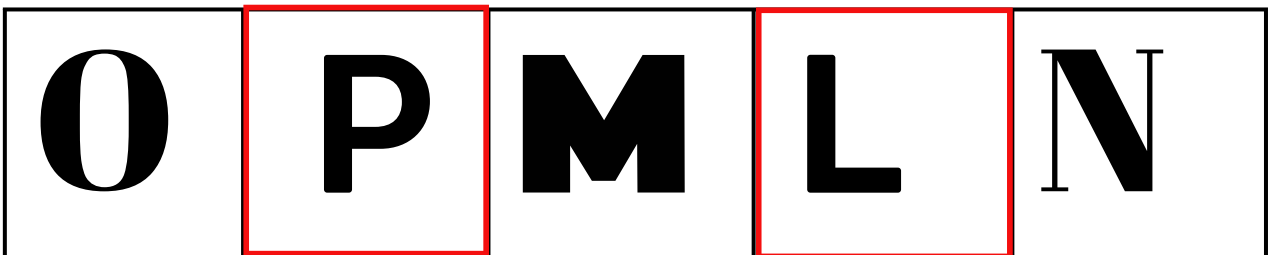
14. (A),(C), (D)

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.

15. (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.

16. (B), (C)

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

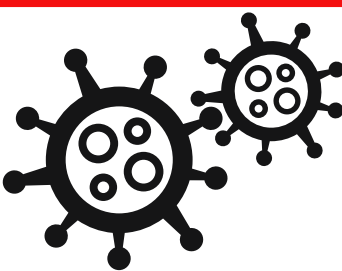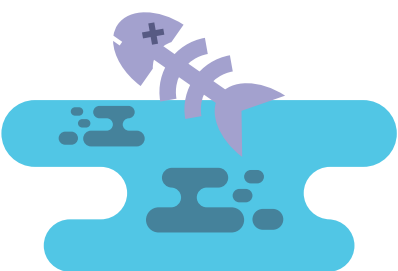| |
|---|
| (A) Promoting the use of high-grade plastic. |
| (B) Government helping the cause. |
| (C) Cleaning water by removing plastic waste. |
| (D) Increase in fishing. |
| (E) Releasing only domestic waste into the sea. |

17. (C), (D), (E)

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

18-20.

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
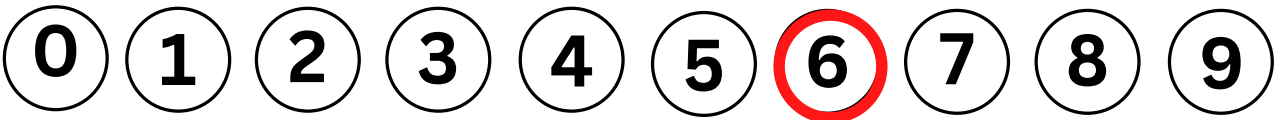
18. 4

Step 1:

S K A Y W L T

⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

19. 6

Step 1:

L **K** A Y W **S** T

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

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20. (C), (E)

Step 1:

S K **A** Y W L T

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

Grade: 3