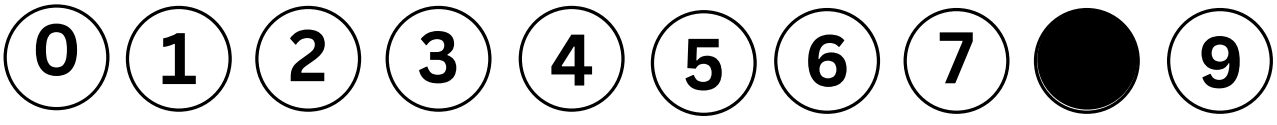
Grade 3: NGN LOGIC OLYMPIAD 2023 - Section A

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.



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SECTION A: 2 MARKS EACH

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

A F K P __

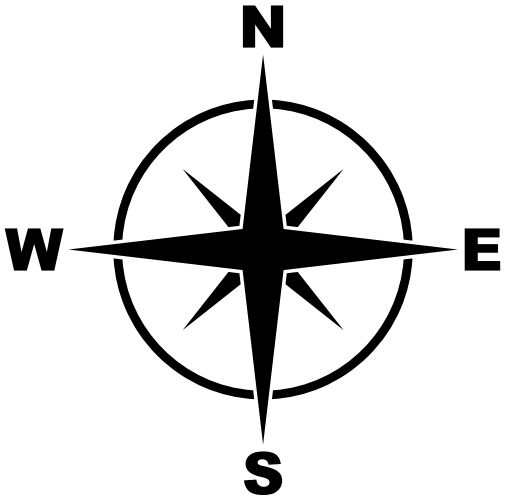
W	**V**	**U**	**Z**	**Q**
(A)	(B)	(C)	(D)	(E)

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)

SECTION A: 2 MARKS EACH

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

SECTION A: 2 MARKS EACH

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	

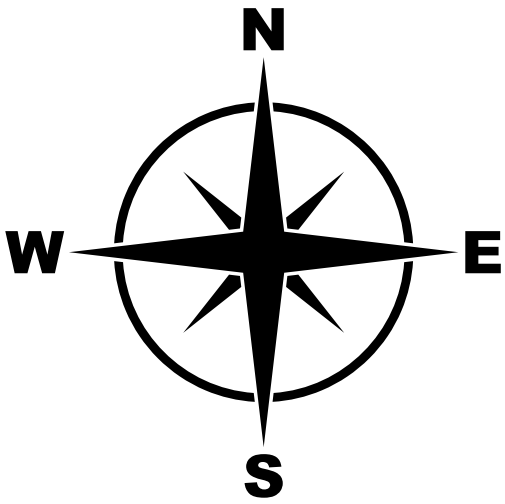
5. **Choose** one option to complete the series.

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	

SECTION A: 2 MARKS EACH

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)

SECTION A: 2 MARKS EACH

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

AEIM, BFJN, CGKO, ?

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

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.

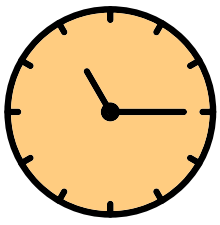
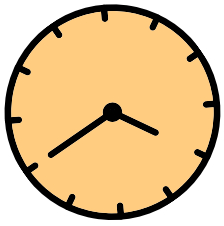
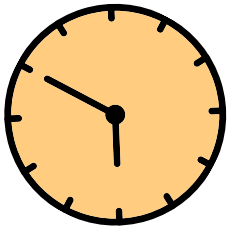
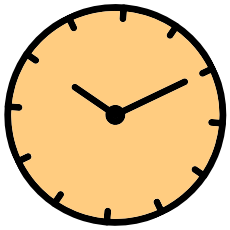
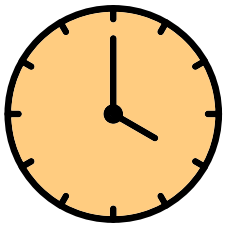
HLHE	HACR	HTCE	HLCE	HEHE
(A)	(B)	(C)	(D)	(E)

SECTION A: 2 MARKS EACH

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)

SECTION A: 2 MARKS EACH

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

B, F, J, ___ , R

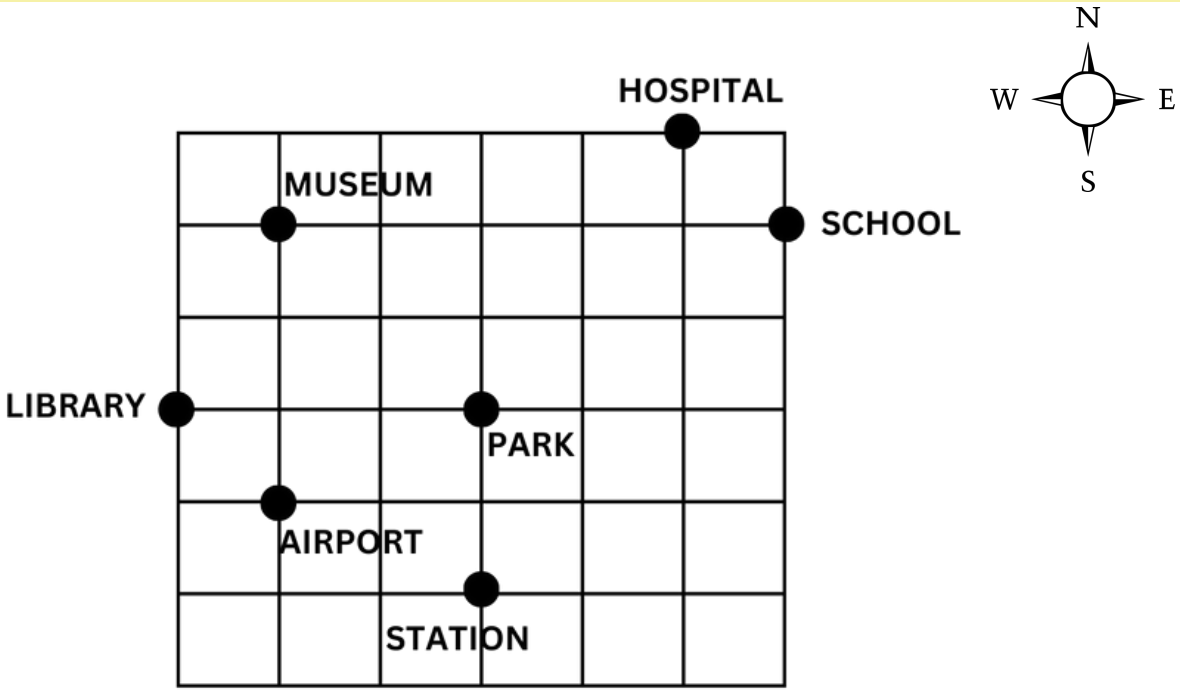
P	M	Q	U	N
(A)	(B)	(C)	(D)	(E)

12. In March, if the second day of the month is Monday. **Choose** which dates will be Monday, Thursday, and Saturday of the second week.

9, 10, 12	8, 11, 13	9, 13, 15	14, 18, 20	9, 12, 14
(A)	(B)	(C)	(D)	(E)

SECTION A: 2 MARKS EACH

13. Which place is to the northwest of the Park? **Choose** the correct option.



(A) HOSPITAL
(B) MUSEUM
(C) LIBRARY
(D) AIRPORT
(E) STATION

SECTION A: 2 MARKS EACH

14. If the word "KRAMER" is coded as "RKMARE," **choose** the code for the word "CRISPING" from the given options.

(A) CRSIPIGN	(B) RCSIPIGN
(C) RCISPING	(D) RCISIPNG
(E) RCSIIPGN	

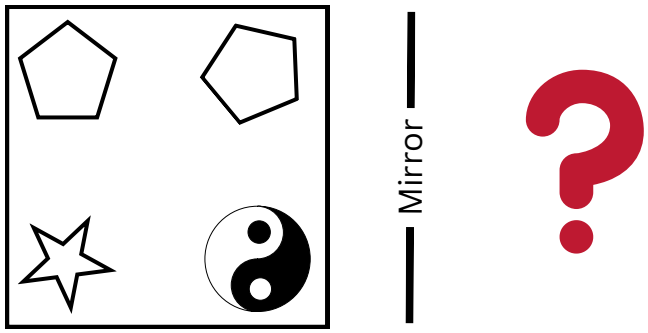
15. The letters of a word are repeated in a series a few times, as shown below.
Choose one option to complete the series.

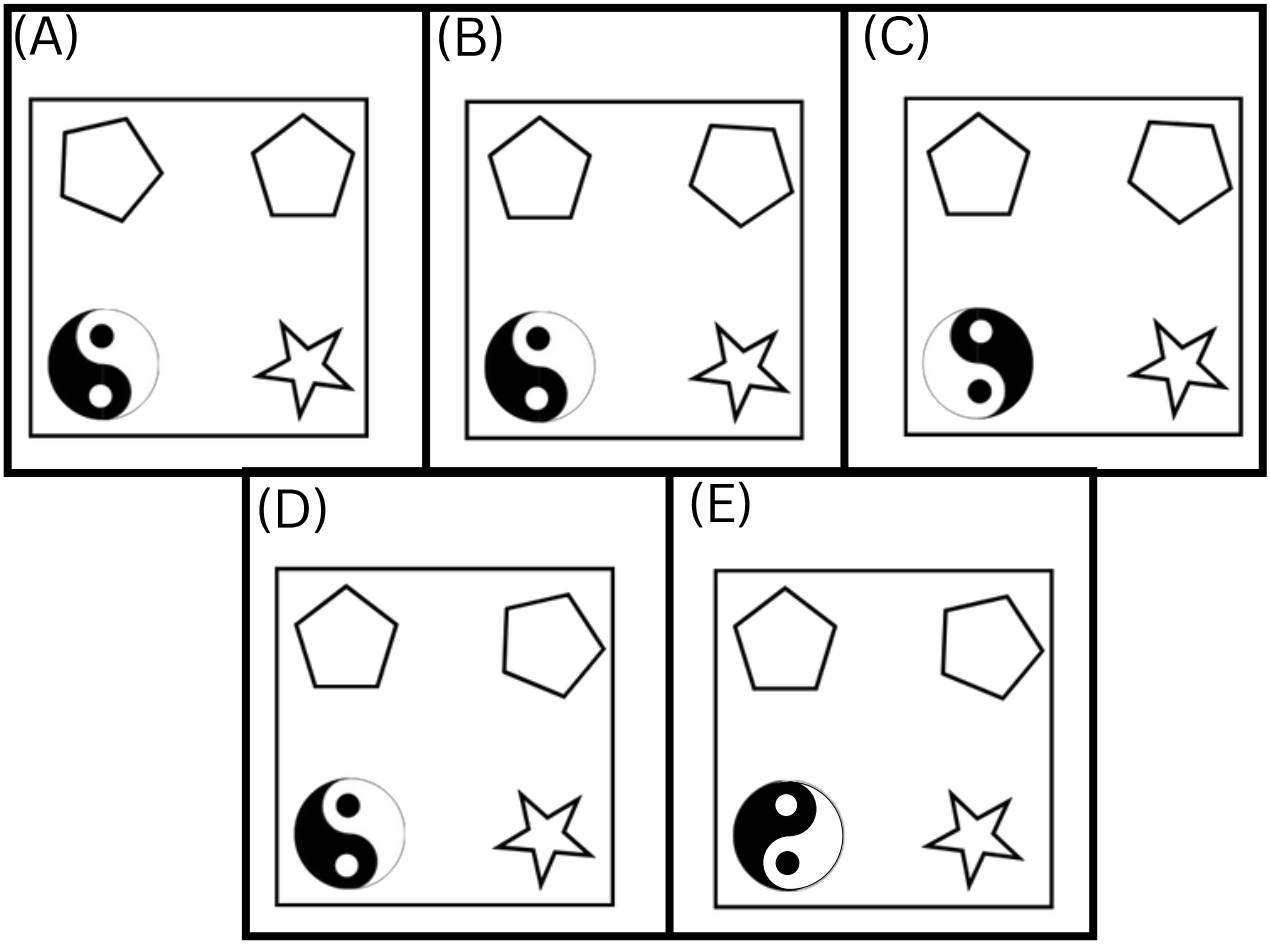
H_ _E_OP_ _OP_HO

(A) O, P, H, E, H, E	(B) P, O, H, H, E, H
(C) O, P, E, H, E, E	(D) P, O, H, E, H, E
(E) O, P, O, E, H, E	

SECTION A: 2 MARKS EACH

16. **Choose** the correct mirror image of the given figure shown below.





SECTION A: 2 MARKS EACH

17. In a row of thirty kids, Heather is positioned in the 12th place when counted from the left side. What is her position when counted from the right side? **Choose** the correct answer.

12	13	18	19	22
(A)	(B)	(C)	(D)	(E)

18. If Tim's father is Jim's brother, what is the relationship between Tim and Jim?
Choose the correct answer from the options.

(A) Brother and Sister
(B) Cousins
(C) Uncle and niece
(D) Father and daughter
(E) None of these

SECTION A: 2 MARKS EACH

19. Here is a statement and three assumptions regarding it. **Choose** the assumption(s) that will support the statement.

Statement: Eating a variety of fruits and vegetables is important for staying healthy.

Assumption 1: Fruits and vegetables provide essential vitamins and minerals that our bodies need.

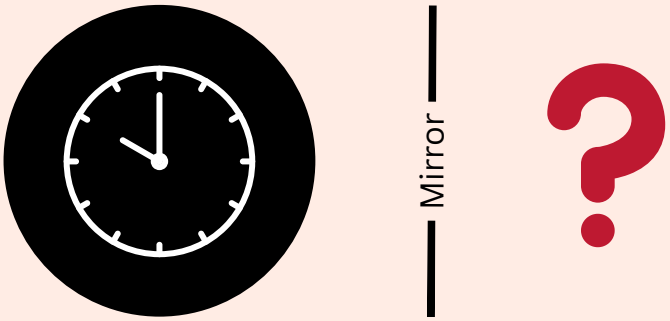
Assumption 2: Eating too many fruits and vegetables can be harmful to our health.

Assumption 3: Fruits and vegetables are not as important for staying healthy as other types of food.

(A) Assumption 1
(B) Assumption 2
(C) Assumption 3
(D) Assumptions 1 and 2
(E) Assumptions 2 and 3

SECTION A: 2 MARKS EACH

20. Determine the time displayed on the clock's mirror image. **Choose** the correct answer.



(A) 1:59 PM
(B) 2:00 PM
(C) 2:02 PM
(D) 2:02 AM
(E) None of these

ANSWER KEY

Preparatory Classes Available

Step-Wise Solution Available

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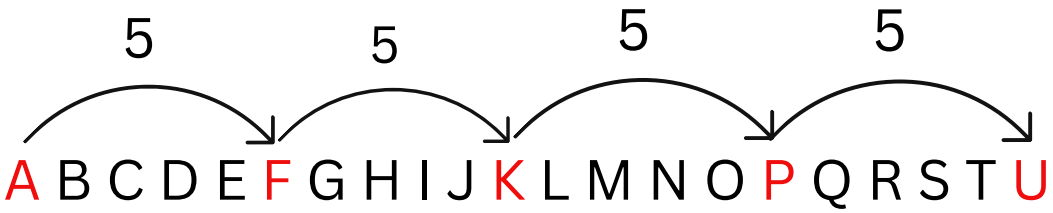
SECTION A: ANSWER KEY

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.



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

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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).

SECTION A: ANSWER KEY

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				

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

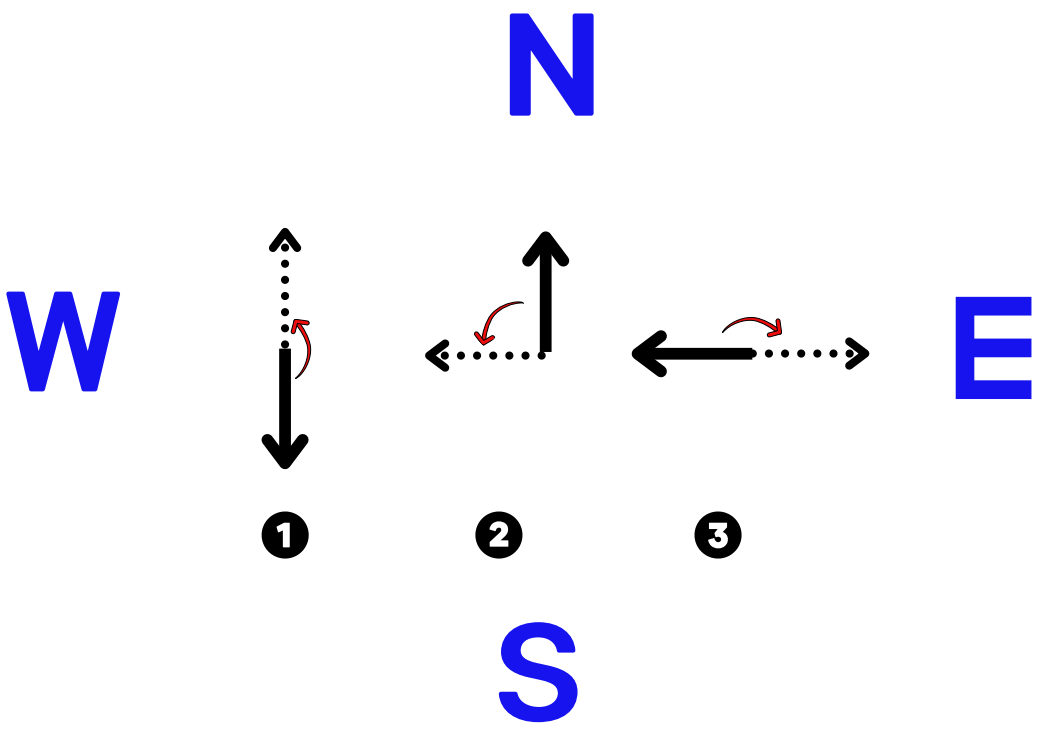
SECTION A: ANSWER KEY

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.



(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

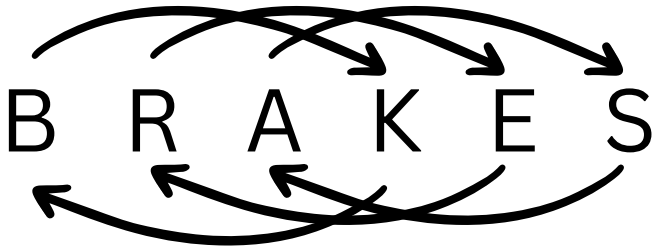
SECTION A: ANSWER KEY

4. (B)

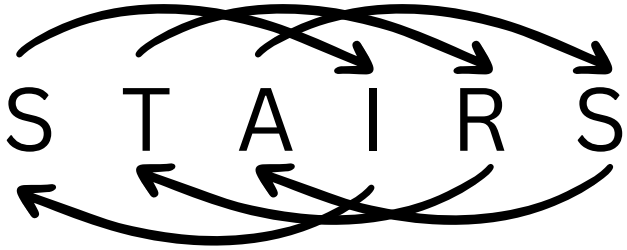
Step 1: 1st letter exchanges its position with 4th letter.

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

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



K E S B R A



I R S S T A

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

SECTION A: ANSWER KEY

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	

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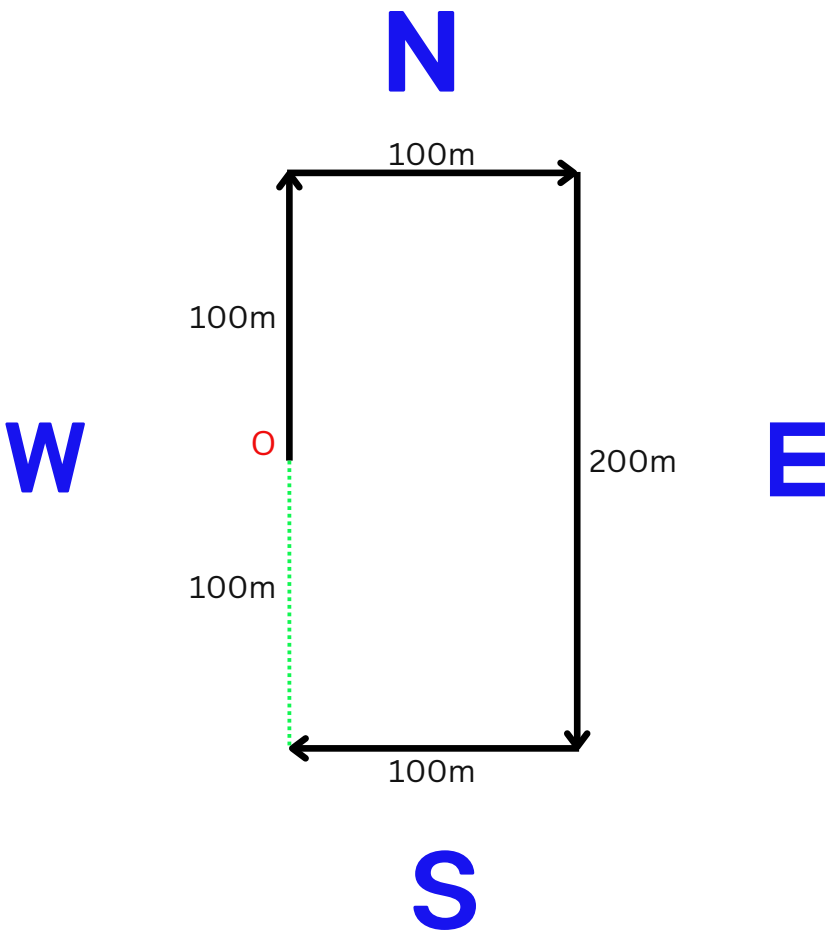
6. (A)

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.

SECTION A: ANSWER KEY



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

SECTION A: ANSWER KEY

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)

SECTION A: ANSWER KEY

8. (D)

Step 1: The code skips two letters every time.

EEIS

HLCE

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

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.

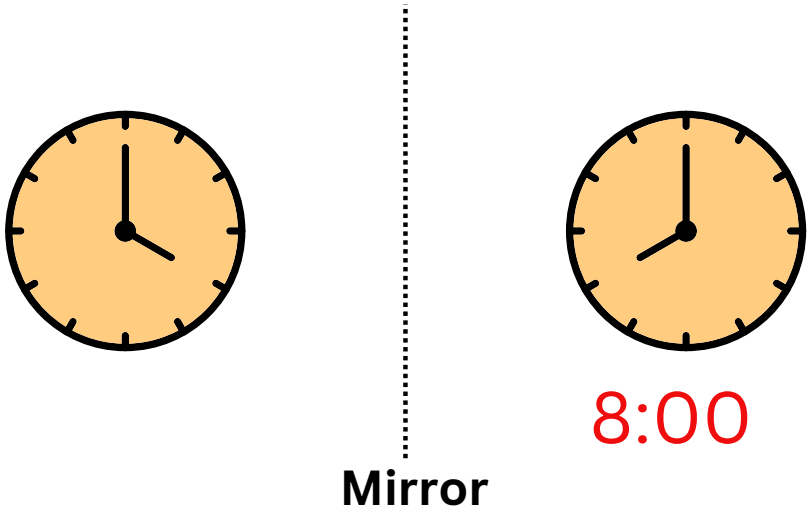
Step 4: The code for LK is 43.

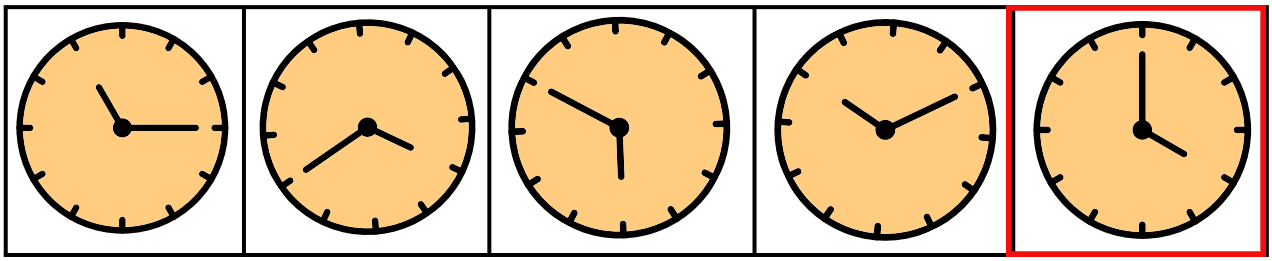
SECTION A: ANSWER KEY

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

10. (E)

Step 1:





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

SECTION A: ANSWER KEY

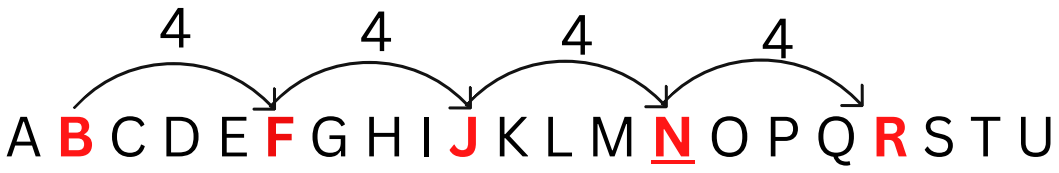
11. (E)

Step 1: B plus 4 letters is F.

Step 2: F plus 4 letters is J.

Step 3: J plus 4 letters is N.

Step 4: N plus 4 letters is R.



(A)	(B)	(C)	(D)	(E)
P	M	Q	U	N

12. (E)

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

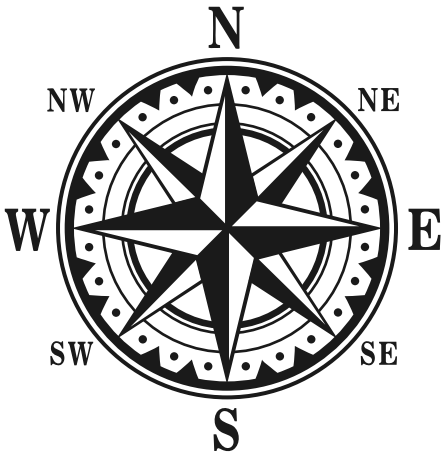
Step 2: For the second week, Monday, Thursday, and Saturday will be 9, 12, and 14. (adding 7 to each).

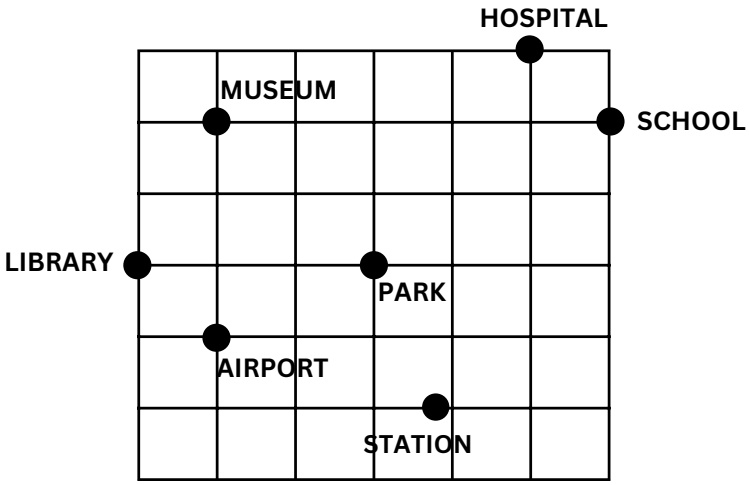
(A)	(B)	(C)	(D)	(E)
9, 10, 12	**8, 11, 13**	**9, 12, 15**	**9, 13, 15**	**9, 12, 14**

SECTION A: ANSWER KEY

13. (B)

Step 1:





Step 2: MUSEUM is in the North-West of the PARK.

(A) HOSPITAL
(B) MUSEUM
(C) LIBRARY
(D) AIRPORT
(E) STATION

SECTION A: ANSWER KEY

14. (E)

Step 1: To get the code, pair the letters of the word "KRAMER" as KR, AM, and ER. Then reverse the order of each pair; we get the code "RKMARE."
Step 2: We get the code for the word "CRISPING" as "RCSIIPGN."

(A) CRSIPIGN	(B) RCSIPIGN
(C) RCISPING	(D) RCISIPNG
(E) RCSIIPGN	

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15. (A)

Step 1: The letters of the word "HOPE" is repeated a few times in this series.

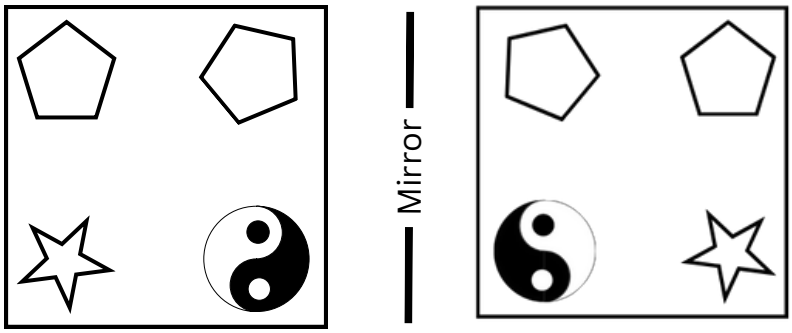
HOPEHOPEHOPEHO

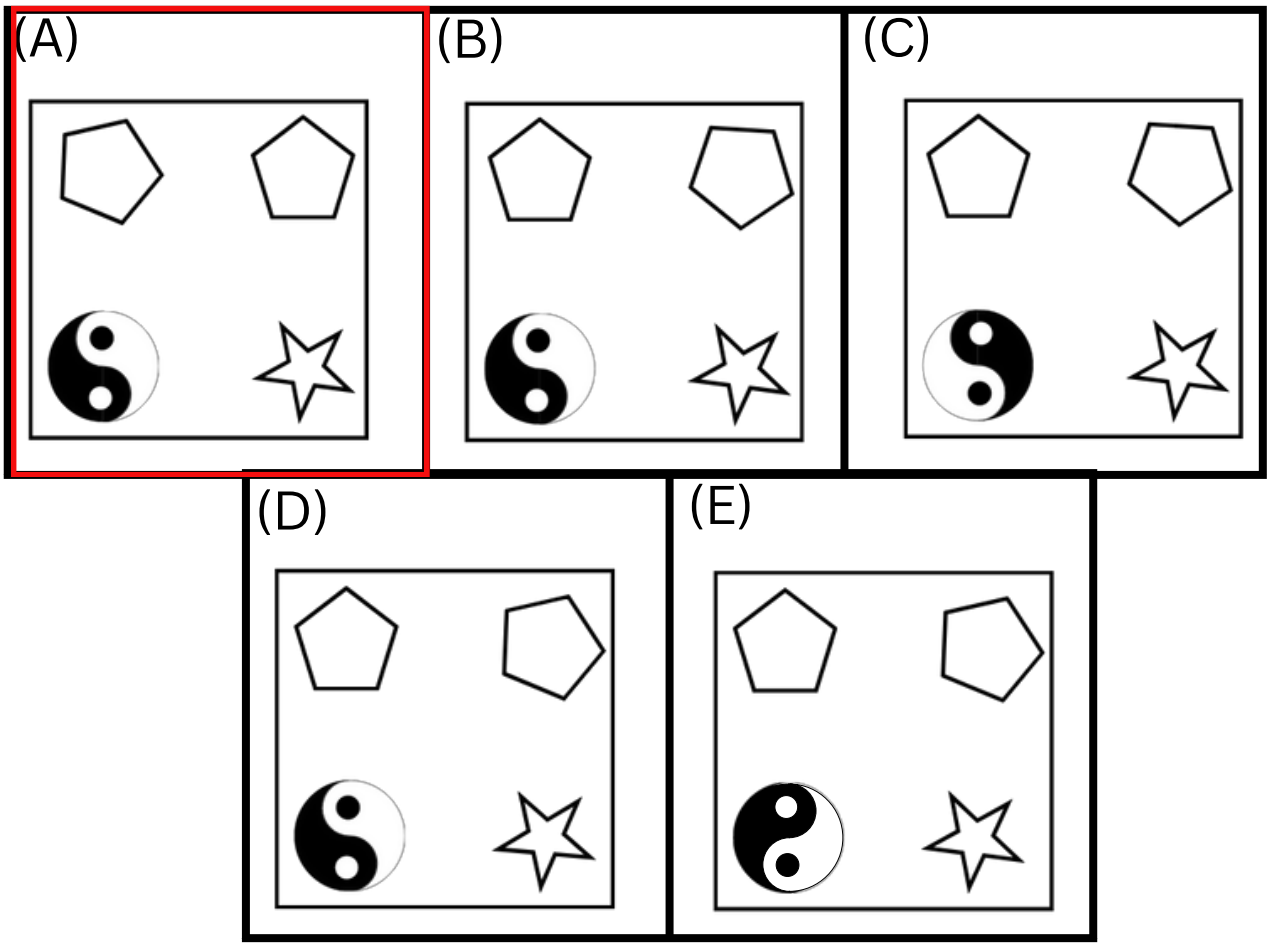
(A) O, P, H, E, H, E	(B) P, O, H, H, E, H
(C) O, P, E, H, E, E	(D) P, O, H, E, H, E
(E) O, P, O, E, H, E	

SECTION A: ANSWER KEY

16. (A)

Step 1: The figure is reflected to get the figure shown below.





SECTION A: ANSWER KEY

17. (D)

Step 1: The number of kids to the left of Heather will be 11 kids, and the number of kids to the right of Heather will be 30 - 12 = 18.

Step 2: The position of Heather from the right of the line will be 18 + 1 = 19.

12	13	18	19	22
(A)	(B)	(C)	(D)	(E)

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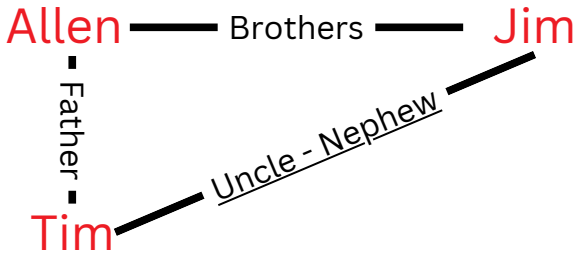
18. (C)

Step 1: Let's call Tim's father, Allen. We can draw the diagram shown below.



(A) Brother and Sister
(B) Cousins
(C) Uncle and nephew
(D) Father and daughter
(E) None of these

SECTION A: ANSWER KEY

19. (A)

Step 1: Assumption 1 is correct because fruits and vegetables are rich in essential vitamins, minerals, and other nutrients that our bodies need to function properly; Other assumptions do not support the statement.

(A) Assumption 1
(B) Assumption 2
(C) Assumption 3
(D) Assumptions 1 and 2
(E) Assumptions 2 and 3

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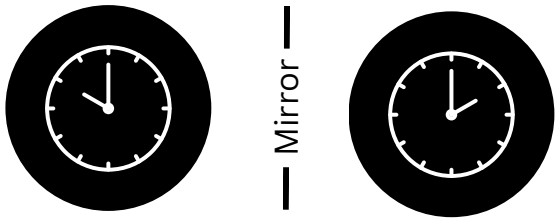
20. (B)

Step 1: The orignal time is 11 o'clock, and the reflection of the time will be 2 o'clock.



(A) 1:59 PM
(B) 2:00 PM
(C) 2:02 PM
(D) 2:02 AM
(E) None of these