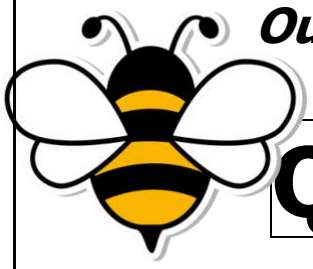






# SiL x WLC



***Our motto: "Practice Makes Improvement"***

# QUESTION BOOKLET

## PAPER: YOUNG SCHOLAR TOURNAMENT (SET A)

## Level: Junior Scholars (aged 12-14)

## DURATION OF TEST: 60 MINS

## PLEASE READ THE FOLLOWING INSTRUCTIONS:

1.) THIS TEST COVERS THE MAIN ASPECTS OF GENERAL KNOWLEDGE, ENGLISH, MATHS, SCIENCE, VERBAL & NON-VERBAL REASONING CORRESPONDING TO THE LEVEL STATED ABOVE.

2.) EACH QUESTION/SUB-QUESTION CARRIES 1 MARK, THE FULL SCORE OF THE TEST IS 80. TRY TO ANSWER ALL THE QUESTIONS WITHIN THE GIVEN TIME.

3.) YOU CANNOT ASK THE INVIGILATOR TO PROVIDE ANY HELP WITH THE ANSWERS.



## Section 1: General Knowledge, History, World News *(10 marks)*

1. Which network is most closely associated with the movement of silk, spices and ideas between East Asia and Europe before modern shipping? 1 Historical trade routes and cultural exchange

A) The Persian Royal Road B) The Grand Canal **C)** The Silk Roads
D) The Maritime Spice Routes E) The Trans-Siberian Highway

2 Digital globalisation and international collaboration

2. A student in London works online with classmates in Nairobi and Seoul on the same document. Which feature of globalisation is shown most clearly?

A) The complete erasure of local cultural identities B) A shift toward deglobalisation
C) The expansion of global trade networks D) The creation of a digital divide
**E)** The reduction of geographical and temporal barriers

3 Deductive reasoning and logical classification

3. All tablets are computers. Device X is a tablet. Which statement must be true?

A) All computers are tablets **B)** Device X is a computer
C) No tablet can use the internet D) Device X is a phone
E) Computers are expensive

4. Which country is among the top 3 producers of coffee in the world? 4 World agricultural production

A) Congo B) Mexico C) Ethiopia **D)** Vietnam E) Italy

5. Which organisation was founded in 1945 to support international cooperation and peace? 5 International organisations and peacekeeping

A) World Wide Web Consortium B) International Olympic Committee
**C)** United Nations D) European Space Agency
E) International Court of Justice

6. Which of the following sequences represents a valid progression for the team in designing a prototype? 6 Sequencing the engineering design process

A) Test → Design → Research B) Design → Research → Test
C) Research → Test → Design D) Test → Research → Design
**E)** Research → Design → Test

7. Which primary mechanism allowed Johannes Gutenberg's movable-type printing press to exponentially accelerate the dissemination of ideas across early modern Europe? 7 Printing technology and the spread of ideas

A) It immediately universalized literacy across the entire European peasantry.
B) It completely replaced handwritten manuscripts by legally banning all traditional scribes.
C) It unified all regional European dialects into a single, identical spoken language.
D) It permanently transferred intellectual authority from universities to trade guilds.
**E)** It enabled the rapid mass production of texts at a drastically lower cost.





8 Museums and cultural heritage

8. The oldest public university-affiliated museum in the world is located in:

**A)** Oxford, UK B) Rome, Italy C) Canberra, Australia D) Lima, Peru E) Cairo, Egypt

9. Who is/are generally credited with inventing and building the world's first successful airplane? 9 Aviation history and technological pioneers

A) Albert Einstein B) Isaac Newton **C)** The Wright brothers
D) Marie Curie E) Nikola Tesla

10. Which country currently has the highest number of time zones within its sovereign territory and overseas dependencies? 10 World geography and time zones

**A)** France B) The USA C) The UK D) Russia E) China

## Section 2: English, Reading, Language Use *(25 marks)*

### The Secret Life of a Smartphone

A smartphone may fit into a pocket, but its story can stretch across the planet.

Suppose a new phone is purchased in Manchester on a Saturday afternoon. The customer sees a polished screen, a metal frame and a neatly printed box. Yet the phone is not truly the product of one factory, one country or even one continent. Its journey may have begun years earlier in a mine.

Modern phones require dozens of materials. Lithium may be used in batteries. Copper carries electrical current. Tiny quantities of gold are valuable because gold conducts electricity well and does not corrode easily. Other specialised minerals are required for screens, speakers and processors.

These materials are not usually found in the same place.

A battery material might be extracted in South America or Australia. Copper might come from Chile. Components may be manufactured in several Asian countries before being assembled elsewhere. Software may be designed by teams whose members live thousands of kilometres apart.

In this sense, a smartphone is a miniature map of globalisation.

Globalisation refers to the increasing movement of goods, services, people, money, information and ideas between different parts of the world. The modern smartphone industry could not operate in quite the same way without these international connections.

However, efficiency can create vulnerability. Imagine that one tiny component is produced mainly in a single region. If a natural disaster closes factories there, manufacturers on the other side of the world may suddenly be unable to complete their products. A missing part worth only a few pounds could delay devices worth millions.

This is known as a supply-chain disruption.

During the early 2020s, businesses around the world became increasingly aware of such risks. Some began seeking several suppliers rather than depending heavily on one. Others moved certain stages of production closer to the markets where products would eventually be sold.

Yet making supply chains stronger can also make them more expensive.

There is another problem: what happens when the phone is no longer wanted?

Globally, enormous numbers of electronic devices are discarded each year. Some are stored forgotten in drawers. Others enter recycling systems. Some are transported abroad, legally or illegally, as electronic waste.

This matters because old electronics contain both valuable and potentially harmful materials.

Recycling a device can recover metals that might otherwise have to be mined again. But separating those materials is technically difficult. Phones are designed to be compact. Components may be glued together, making repair and recycling harder.

For this reason, some engineers and environmental groups have called for **circular design**.
A traditional manufacturing model can be described as: **take → make → use → throw away**
A circular model aims instead for: **take less → make → use → repair → reuse → recycle**

Some manufacturers now design devices so batteries can be replaced more easily. Others offer trade-in programmes or use recycled metals.
Consumers also play a role. Keeping a phone for four years instead of two can reduce demand for newly manufactured devices. Repairing a damaged screen rather than replacing the whole phone may also reduce waste...

11. The opening sentence mainly emphasises: 11 Interpreting an opening sentence's main message

A) how physically large smartphones are.
B) why people lose smartphones.
**C)** how internationally complex smartphone production is.
D) why smartphones should not be purchased.
E) that phones are difficult to transport.

12. What does "vulnerability" most nearly mean in the sentence "efficiency can create vulnerability"? 12 Inferring vocabulary meaning from context

A) Popularity
**B)** Exposure to possible problems
C) Financial success
D) Technological progress
E) Confusion

13 Comparing traditional and circular production models

13. The circular design model differs from the traditional model because it emphasises:

A) faster disposal
B) replacing devices frequently
C) greater advertising
D) international shipping
**E)** repair, reuse and recycling

14. Why might companies use several suppliers? 14 Understanding supply-chain risk management

A) To make recycling impossible
B) To prevent software updates
C) To eliminate international trade
D) To make phones heavier
**E)** To reduce dependence on a single source

15 Identifying synonyms in context

15. "Components" in "Components may be manufactured…" most nearly means —

**A)** Parts B) Families C) Cities D) Messages E) Signals

16. Why can a very cheap component cause major losses? 16 Understanding cause and effect in supply chains

A) Cheap components always break.
B) Customers refuse to buy products containing them.
C) Small components cannot be transported internationally.
D) Factories charge extra for small parts.
**E)** It may be essential to completing an expensive product.

17. The phrase "miniature map of globalisation" is an example of 17 Recognising metaphorical language

A) literal measurement.
B) contradiction.
C) statistical evidence.
D) technical instruction.
**E)** metaphorical description.

18. The author includes the Manchester purchaser mainly to: 18 Identifying the purpose of an illustrative example

**A)** create a relatable starting point.
B) identify the world's largest phone market.
C) describe a particular company.
D) criticise Manchester residents.
E) prove British factories manufacture all phones.

19. Which title best captures the central idea? 19 Identifying a text's central theme

A) A History of Manchester Shops
B) How to Buy the Cheapest Phone
C) The End of International Trade
**D)** Inside One Device: A Global Journey
E) Why Batteries Never Fail

20 Distinguishing fact from opinion

20. Which statement is an opinion or judgement rather than a straightforward fact?

A) Some companies operate trade-in programmes.
B) Batteries lose capacity.
C) Components may come from different countries.
**D)** The most remarkable feature may be the global network behind the phone.
E) Phones contain many materials.

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"***The Cashless Café***"

In this passage you have to choose the **best word**, or **group of words**, to complete each numbered line so that it makes sense and is written in correct English. Choose the **best** answer and mark its letter on your answer sheet.

When a new café opened opposite Priya's school, its sign announced proudly that it was 100% CASHLESS.

At first, Priya thought little of it. Most of her friends already paid for snacks by tapping a phone or bank card, and hardly anyone _____**21**_____ coins in their pockets any more.

21 Past-tense consistency in narrative writing

**A)** carried B) carries C) has carried D) carrying E) carry

The café was fast, bright and popular. Customers ordered from screens, and drinks were prepared almost _____**22**_____ their payments had been accepted.

22 Selecting conjunctions expressing time

A) unless B) although C) despite D) whereas **E)** as soon as

One afternoon, however, Priya saw an elderly man standing beside the counter with a five-pound note in his hand.

"I'm afraid we don't take cash," the assistant said politely. The man looked embarrassed. He explained that he did not own a smartphone and rarely used a bank card.

Priya had never considered that a system designed to make shopping _____**23**_____ might also make it harder for some people.

23 Word classes and adjective complements

A) conveniences B) more conveniently C) conveniently
D) convenience **E)** convenient





The following week, her class discussed how technology was changing spending habits.

Their teacher asked whether businesses should be free to decide _____**24**_____ forms of payment they accepted.

24 Question words in embedded clauses

A) what did B) whom C) whose **D)** which E) that

Some students argued that digital payments reduced queues and made theft less likely. Others pointed out that cash could still be useful during power failures or when electronic systems _____**25**_____ working. 25 Verb tense in reported statements

A) have stopping B) stopping C) had stop
**D)** stopped E) stop

Priya found herself agreeing with both sides.

The issue was not _____**26**_____ simple as she had first imagined.

26 Comparative structures: "not so…as"

**A)** so B) much C) too D) enough E) very

A month later, the café changed its sign.

It now read:

**CARD PREFERRED — CASH WELCOME**

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***Spelling/Sentence Structure Exercises***

Each line contains ONE mistake or NO mistake. Mark A, B, C, D or E (E is for "*No mistake*").

27 Subjunctive verb forms after recommendations

27. The chief recommended that each applicant submit a statement before the interview. **E)**

**A** **B** **C** **D**

**E : No mistake**

28 Subject–verb agreement with "each"

28. Each of the datasets were checked by two independent analysts before publication. **B)**

**A** **B** **C** **D**

**E : No mistake**

29 Parallel structures with "both…and"

29. The new policy aims both to reduce waste and improving access to affordable repairs. **C)**

**A** **B** **C** **D**

**E : No mistake**

30 Quantifiers with uncountable nouns

30. We had much fewer time than expected to finish the lengthy task. **B)**

**A** **B** **C** **D**

**E : No mistake**





31 Distinguishing possessives from contractions

31. The company changed it's policy after customers complained about privacy. **B)**

A B C D

**E : No mistake**

32 Subject–verb agreement with "a number of"

32. A number of local shops has started accepting digital payments this year. **B)**

A B C D

**E : No mistake**

33 Commonly confused words: "affect" and "effect"

33. The council's decision may effect how quickly the repairs begin. **B)**

A B C D

**E : No mistake**

34 Subject–verb agreement with "one of"

34. One of the oldest bridges in the county were damaged during the recent floods. **C)**

A B C D

**E : No mistake**

35 Parallel structures with "not only…but also"

35. The author not only described the landscape vividly but also revealing the villagers' fears. **C)**

A B C D

**E : No mistake**

## Section 3: STEM & Innovation *(20 marks)*

36. Plants harness energy from sunlight mainly through… 36 Photosynthesis and energy transfer

A) respiration B) condensation C) friction D) evaporation **E)** photosynthesis

37 Renewable and non-renewable energy sources

37. Which of the following energy sources is classified as renewable?

**A)** Solar B) Coal C) Natural gas D) Diesel E) Nuclear

38 Calculating density from mass and volume

38. A block has a mass of 240 g and a volume of 80 $cm^3$. What is its density?

A) 0.33 $g/cm^3$ B) 3.0 $kg/m^3$ **C)** 3.0 $g/cm^3$ D) 160 $g/cm^3$ E) 3,000 $g/cm^3$

39. What is the mean of the dataset: 6, 8, 10, 12? 39 Calculating the arithmetic mean

A) 8 **B)** 9 C) 10 D) 11 E) None of the listed ones

40 Iterative design and prototype improvement

40. An engineering team tests a physical prototype, uncovers an unexpected structural weakness, and loops back to modify the initial blueprints before rebuilding. This cyclical process of testing, evaluating, and redesigning is best described as...

A) encryption B) validation C) troubleshooting D) refinement **E)** iteration

41 Greenhouse gases and human-caused warming

41. Which gas below is the most significant contributor to human-caused global warming?

A) Water vapor B) Methane C) Nitrous oxide **D)** Carbon dioxide E) CFCs

42. Genes are functional sections of... 42 Genes and DNA

A) Chromosomes B) Proteins **C)** DNA D) RNA E) Genomes





43. Which of the following explains why a satellite remains in orbit rather than flying straight off into space? 43 Gravity and orbital motion

A) Solar panels generate a magnetic field that anchors it.
B) The total vacuum of space prevents any forward motion.
**C)** Gravity continually pulls it downward, changing its direction.
D) Continuous radio waves from ground stations pull it toward Earth.
E) The satellite has reached a point where Earth's gravity drops to zero.

44. An energy-saving device reduces consumption from 80 Wh to 60 Wh. What is the percentage reduction in energy usage? 44 Calculating percentage decrease

A) 15% B) 20% C) 33% **D)** 25% E) 75%

45. Why are triangles specifically chosen over other geometric polygons in bridge truss designs? 45 Triangulation and structural rigidity

A) They naturally minimize the downward force of gravity acting on the bridge deck.
**B)** They cannot change shape without a corresponding change in their side lengths.
C) They completely eliminate internal bending stress within individual components.
D) They consistently require less total physical mass than arches or cylinders.
E) They maximize the surface area available to counter strong lateral crosswinds.

46. A greenhouse controller automatically activates a ventilation fan when the indoor temperature exceeds 30°C. Which component is responsible for initiating this system response? 46 Sensors and automated control systems

A) Relay B) Transducer C) Microprocessor **D)** Sensor E) Actuator

47. A train travels 1800 meters in 3 hours. What is its average speed in meters per second (m/s), rounded to three decimal places? 47 Average speed, unit conversion and rounding

A) 600 m/s B) 0.6 m/s **C)** 0.167 m/s D) 5400 m/s E) 0.056 m/s

48. An algorithm is best defined as a: 48 Algorithms and procedural problem-solving

A) formula used only for calculating percentages
B) hardware component in a computer
C) programming language syntax error
D) digital data storage device
**E)** precise set of rules to solve a problem

49. A model uses a scale of 1:50. If a wall is 4 cm long on the model, how long is the real wall? 49 Scale drawings and measurement conversion

A) 20cm **B)** 2m C) 200m D) 20m E) 0.08cm

50 Probability of a single event

50. A bag contains 3 blue and 2 red counters. What is the probability of choosing blue?

A) $\frac{2}{5}$ B) $\frac{2}{3}$ **C)** $\frac{3}{5}$ D) 3:2 E) $\frac{3}{2}$

51 Training-data bias and AI fairness

51. Why can biased training data be problematic for an artificial intelligence system?
A) It permanently locks the neural network's activation functions into a linear state.
B) It degrades hardware processing speeds by creating asynchronous vector loops.
C) It forces the optimisation algorithm to overfit exclusively.
**D)** The system may absorb and perpetuate unfair or inaccurate patterns from the dataset.
E) It triggers automatic gradient explosion during the initial backpropagation phase.

52. Find the smallest prime number > 60. 52 Identifying prime numbers

**A)** 61 B) 63 C) 67 D) 69 E) 71

53. The ratio of boys to girls in a room is 7:5. If 2 girls leave, the new ratio of boys to girls becomes 3:2. How many boys are currently in the room? 53 Algebraic reasoning with changing ratios

A) 21 B) 28 C) 56 D) 35 **E)** 42

54 Successive percentage changes

54. A number increased by 68% then reduced by 68% → What is the effect?

A) Same B) Increase **C)** Decrease D) Double E) Becomes 0

55. In a pie chart representing 120 students, the sector for "Music" has an angle of 54°. How many students do not like Music? 55 Pie-chart proportions and complementary quantities

A) 18 B) 54 C) 66 **D)** 102 E) 108

## Section 4: Verbal Reasoning *(12 marks)*

Move ONE letter from the first word to the second word.
The order of the letters must **not** otherwise be changed, and the two new words must **make sense**.

56. smile at 56 Letter transfer and word formation

**A)** s B) m C) i D) l E) e

57. shore all 57 Letter transfer and word formation

A) s **B)** h C) o D) r E) e

58. sting rain 58 Letter transfer and word formation

A) s **B)** t C) i D) n E) g

59. batch ore 59 Letter transfer and word formation

A) b B) a C) t **D)** c E) h

In these following questions, the **same letter** must fit into both sets of brackets to complete the word in front of the brackets and begin the word after the brackets.

60. cas ( ? ) able  par ( ? ) opic 60 Shared-letter word completion

A) r  B) s  **C)** t  D) m  E) p

61. loa (?) esk  see (?) oor 61 Shared-letter word completion

**A)** d  B) b  C) f  D) l  E) t

62. hea ( ? ) ower  nea ( ? ) ool 62 Shared-letter word completion

A) l  B) d  **C)** t  D) r  E) p

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In these sentences, **a word of four letters** is hidden at the end of one word and the beginning of the next word. Find the pair of words that contains the hidden word and mark this answer on the answer sheet.

63. The loud bang alarmed the sleeping cat. 63 Finding hidden words across word boundaries

A) loud bang  **B)** bang alarmed  C) alarmed the  D) the sleeping  E) sleeping cat

64. Her absolute refusal to cooperate shocked the panel. 64 Finding hidden words across word boundaries

A) Her absolute  B) absolute refusal  **C)** refusal to

D) cooperate shocked  E) shocked the

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Three of the following four words are given in code.
The codes are not written in the same order as the words, and one is missing.
Use the codes below to answer the questions in this section.

| TRACE | CATER | REACT | CRATE |
|---|---|---|---|
| 64183 | 43186 | 81634 | |

65. Find the code for the word **CART**. 65 Deducing letter–number codes and encoding words

**A)** 8146  B) 8416  C) 1846  D) 8164  E) 4816

66. Find the code for **TEAR**. 66 Applying letter–number substitution codes

A) 6341  B) 6134  C) 3614  D) 6431  **E)** 6314

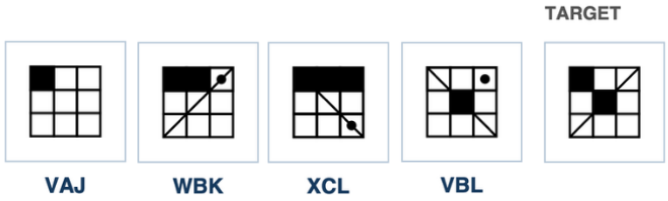
67. Find the word that has the number code **8163434** 67 Decoding words from numerical sequences

A) CREATER  B) TREACET  C) TRACTER  D) REACTER  **E)** CATERER

## Section 5: Non-Verbal Reasoning *(8 marks)*

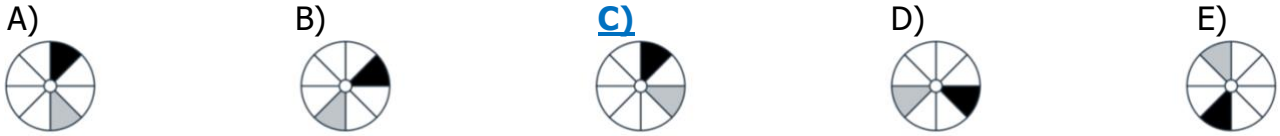
68 Deducing visual codes from multiple features

68. Deduce the visual code or spatial transformation and select the single best answer.

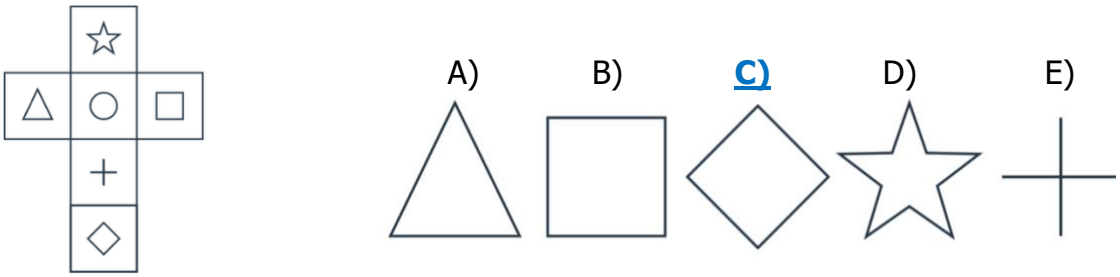



A) WAL **B)** WAK C) VAK D) WBK E) XAK

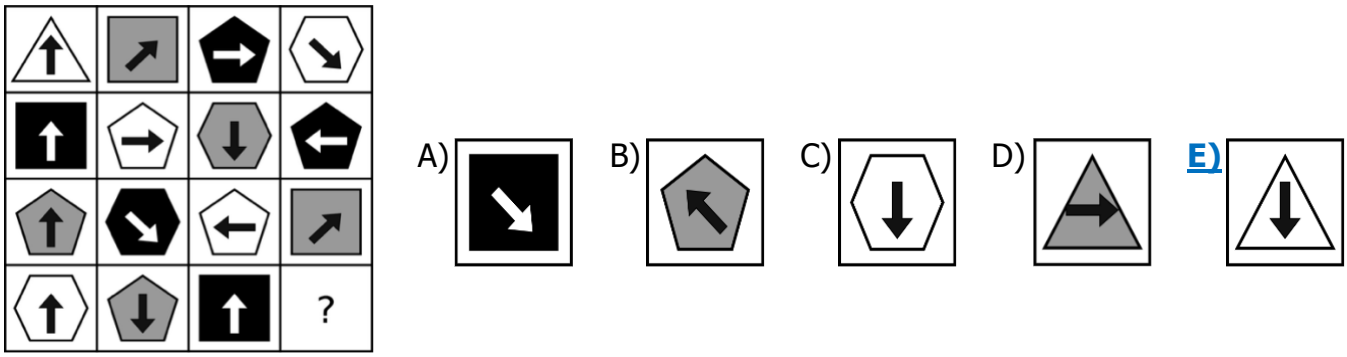
69. Find the odd one out. 69 Comparing relative positions in circular patterns



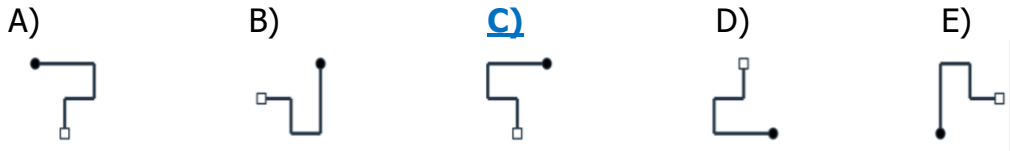

70. Fold the net into a cube. Which symbol is opposite the circle? 70 Visualising cube nets and opposite faces




71. Select the best option for the missing cell. 71 Completing matrices using multiple visual rules

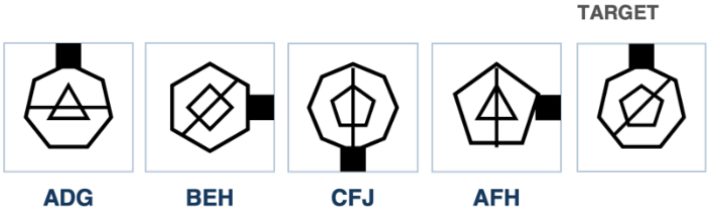



72. Find the odd one out. 72 Distinguishing rotations from reflections



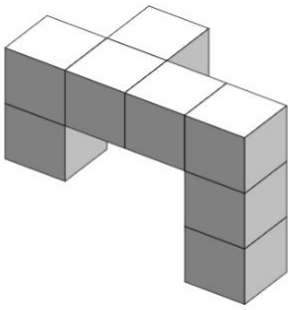

73 Coding shape, line orientation and marker position

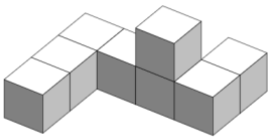
73. Deduce the visual code or spatial transformation and select the single best answer.

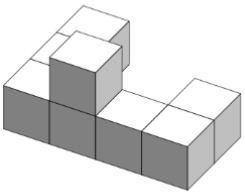


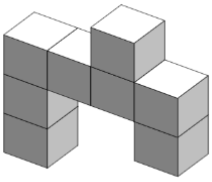

A) CFG B) BEG **C)** CEG D) CEH E) AEG

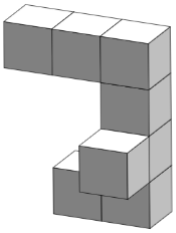
74. Select the option which is a rotation of the main shape. 74 Mental rotation of three-dimensional shapes

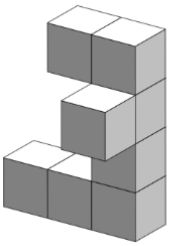


A) 

B) 

C) 

**D)** 

E) 

75 Tracking independent movements in visual sequences

75. Track two black cells travelling independently around the perimeter.




A) 

**B)** 

C) 

D) 

E) 

## Section 6: Miscellaneous *(5 marks)*

76. Which city is going to host the Summer Olympics 2028? 76 International sporting events and host cities

**A)** Los Angeles B) London C) Melbourne D) Munich E) New York

77. Which is the highest-valued and strongest currency in the world? 77 World currencies and exchange values

**A)** Kuwaiti Dinar B) Omani Rial C) US Dollar D) British pound E) Euro

78 AI platforms and global usage trends

78. Which is the most used artificial intelligence chatbot in the world in the year 2026?

A) Google Gemini **B)** ChatGPT C) Grok D) Meta AI E) Claude

79. Who is the most filmed author ever in any language? 79 Literary heritage and screen adaptations

A) Arthur Conan Doyle B) Stephen King C) Agatha Christie

**D)** William Shakespeare E) J.K. Rowling

80 GDP per capita and international comparisons

80. Which country has the highest GDP per capita as of Year 2026?

A) Switzerland B) Ireland C) Iceland **D)** Liechtenstein E) Luxembourg

**~END OF PAPER~**