

# TALLENTEX Mental Ability

## Sample Paper – 6

Duration: 30 Minutes

Maximum Marks: 80

### Instructions

- This paper contains **20** Multiple Choice Questions (Single Correct Answer) modelled on the Mental Ability (IQ) section of **TALLENTEX**.
- Each correct answer carries **+4 marks**. There is **–1 mark** for each incorrect answer. Unattempted questions carry no marks.
- Only **one** option is correct per question. Choose carefully.
- Use of mobile phones, calculators, or any electronic devices is strictly prohibited.
- Mark your answers on the OMR sheet with a black/blue ball-point pen only.

**Q1.** Find the missing number in the following series:

1, 2, 6, 24, 120, ?

- (A) 480
- (B) 720
- (C) 600
- (D) 840

**Q2.** Find the missing number in the following series:

1, 4, 13, 40, 121, ?

- (A) 243
- (B) 300
- (C) 364
- (D) 400



**Q3.** Find the missing letter in the following series:

**C, F, I, L, ?**

(A) M

(B) N

(C) P

(D) O

**Q4.** Complete the analogy:

**Hot : Cold :: Day : ?**

(A) Night

(B) Dusk

(C) Noon

(D) Dark

**Q5.** Complete the analogy (observe the pattern):

**(2, 3) : 8    (3, 4) : 15    (4, 5) : ?**

(A) 22

(B) 24

(C) 20

(D) 25

**Q6.** In a certain code language, **TIGER** is written as **UJHFS** (each letter is shifted forward by 1 position). Using the same rule, how will **HORSE** be written?

(A) GPQRD

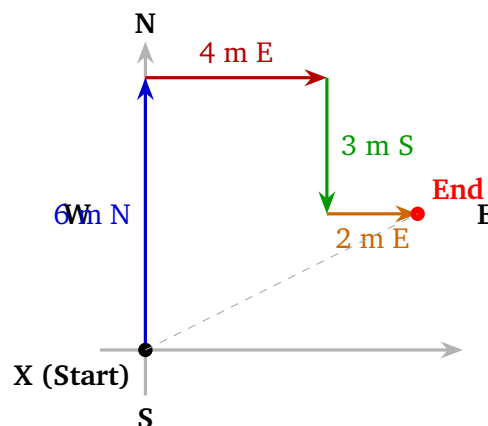
(B) HSRSE

(C) IPSTF

(D) HQSSD



- Q7.** Using the same rule as Q6 (each letter shifted forward by 1 position), how is **SOUL** coded?
- (A) RPKL  
(B) SNVM  
(C) TPLM  
(D) TPVM
- Q8.** A woman introduces a man as “the son of my mother’s brother.” How is the man related to the woman?
- (A) Cousin  
(B) Nephew  
(C) Uncle  
(D) Brother
- Q9.** Renu starts from point **X** facing North. She walks **6 m North**, turns right and walks **4 m**, turns right and walks **3 m**, then turns left and walks **2 m**. In which direction is she now from point **X**?



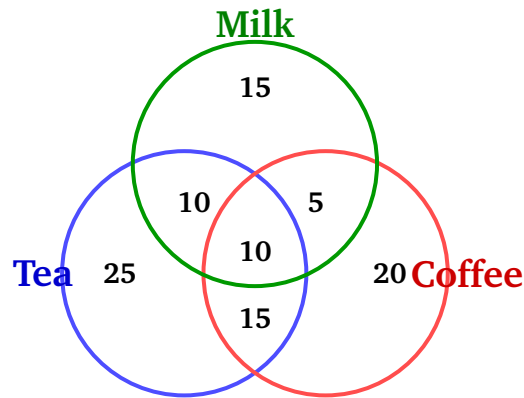
- (A) East  
(B) North-East  
(C) North  
(D) South-East



- Q10.** A clock shows exactly **6:00**. If the hour hand points towards the **South**, in which direction does the minute hand point?
- (A) East
  - (B) West
  - (C) North
  - (D) South
- Q11.** Four of the following five are alike in a certain way. Find the one that does **NOT** belong to the group.
- Mercury, Venus, Earth, Moon, Mars**
- (A) Mercury
  - (B) Venus
  - (C) Earth
  - (D) Moon
- Q12.** Find the number that does **NOT** belong to the group:
- 33, 44, 55, 63, 77**
- (A) 63
  - (B) 44
  - (C) 77
  - (D) 33
- Q13.** In a row of **25** students, Ravi is **12th from the left** and Anu is **8th from the right**. How many students are sitting **between** Ravi and Anu?
- (A) 4
  - (B) 5
  - (C) 6
  - (D) 7



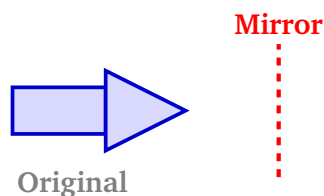
- Q14.** In a survey of 100 people: 60 drink Tea, 50 drink Coffee, and 40 drink Milk. 25 drink both Tea and Coffee, 15 drink both Coffee and Milk, and 20 drink both Tea and Milk. 10 drink all three. Study the Venn diagram below and find how many people drink **exactly two** of the three beverages.

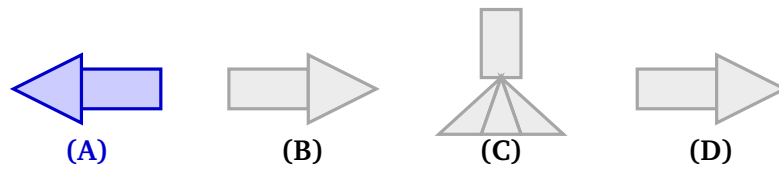


- (A) 25  
(B) 20  
(C) 30  
(D) 35
- Q15.** In a special code:  $+$  means  $\times$ ,  $\times$  means  $-$ ,  $-$  means  $+$ ,  $\div$  means  $\div$ .

Find the value of:  $6 + 4 \times 2 - 3 \div 1$

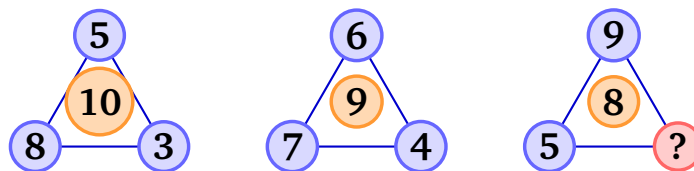
- (A) 31  
(B) 27  
(C) 22  
(D) 25
- Q16.** The figure on the left (an arrow pointing to the upper-right) is placed in front of a vertical mirror. Which of the options (A)–(D) correctly shows its mirror image?





- (A) Option A  
 (B) Option B  
 (C) Option C  
 (D) Option D

**Q17.** In each triangle, the inner number equals (top vertex + bottom-left vertex) – bottom-right vertex. Find the missing number (?) in the third triangle.



- (A) 5  
 (B) 6  
 (C) 7  
 (D) 8

**Q18.** Study the pattern in the  $3 \times 3$  grid below. Find the number that should replace the question mark (?).

|   |    |    |
|---|----|----|
| 2 | 6  | 10 |
| 3 | 8  | 13 |
| 4 | 10 | ?  |

- (A) 14



- (B) 15
- (C) 16
- (D) 18

**Q19.** Five friends P, Q, R, S, and T each wear shirts of a different colour: red, blue, green, yellow, and white (one each). Read the clues carefully and answer:

- Q wears **blue**.
- S wears **yellow**.
- T does not wear red or white.
- P does not wear green or white.

What colour does **R** wear?

- (A) Red
- (B) Green
- (C) Blue
- (D) White

**Q20. Statement:** “Kindly use the stairs as the elevator is under maintenance.”

Which of the following is the **most implicit assumption** behind this statement?

- (A) People can use stairs as an alternative means of reaching upper floors.
- (B) The elevator will never be repaired again.
- (C) Using stairs is always faster than using an elevator.
- (D) People are unaware that the elevator is under maintenance.



**Detailed Solutions****Q1.****Solution**

**Concept:** Number Series based on factorials.

**Step 1 – Identify the pattern:**

$$1 = 1!, \quad 2 = 2!, \quad 6 = 3!, \quad 24 = 4!, \quad 120 = 5!.$$

Each term is the factorial of its position number.

**Step 2 – Find the missing term:**

$$\text{Next term} = 6! = 6 \times 5! = 6 \times 120 = 720.$$

**Why other options are wrong:**

(A) 480:  $= 4 \times 120$ ; uses factor 4, not 6.

(C) 600:  $= 5 \times 120$ ; uses factor 5, not 6.

(D) 840:  $= 7 \times 120$ ; skips the 6th factorial entirely.

**Answer: (B)** [Go Back to Q1](#)

**Q2.****Solution**

**Concept:** Number Series with recursive rule: each term  $= 3 \times (\text{previous term}) + 1$ .

**Step 1 – Verify the rule:**

$$4 = 3 \times 1 + 1. \quad \checkmark$$

$$13 = 3 \times 4 + 1. \quad \checkmark$$

$$40 = 3 \times 13 + 1. \quad \checkmark$$

$$121 = 3 \times 40 + 1. \quad \checkmark$$

**Step 2 – Find the next term:**

$$? = 3 \times 121 + 1 = 363 + 1 = 364.$$

**Why other options are wrong:**

(A) 243:  $= 3^5$ ; follows a powers-of-3 pattern, not this series.

(B) 300:  $\approx 2.47 \times 121$ ; wrong multiplier.

(D) 400:  $\approx 3.3 \times 121$ ; wrong multiplier.

**Answer: (C)** [Go Back to Q2](#)



Q3.

**Solution**

**Concept:** Letter Series with constant alphabetical skip.

**Step 1 – Assign positions:**

C = 3, F = 6, I = 9, L = 12.

**Step 2 – Find the gap:**

$6 - 3 = 3$ ,  $9 - 6 = 3$ ,  $12 - 9 = 3$ . Each letter advances by **3** positions.

**Step 3 – Next letter:**

$12 + 3 = 15 \Rightarrow$  the 15th letter = **O**.

**Why other options are wrong:**

(A) M is the 13th letter (+1 from L, not +3).

(B) N is the 14th letter (+2 from L, not +3).

(C) P is the 16th letter (+4 from L, not +3).

**Answer:** (D) [Go Back to Q3](#)

Q4.

**Solution**

**Concept:** Word Analogy based on **opposites**.

**Step 1 – Understand the relationship:**

Hot and Cold are antonyms (opposites).

**Step 2 – Apply the same relationship:**

The opposite of Day is Night.

**Why other options are wrong:**

(B) Dusk: dusk is the transition from day to night, not the opposite of day.

(C) Noon: noon is the middle of the day, not its opposite.

(D) Dark: dark is a condition (absence of light), not specifically the antonym of “day” as a time unit.

**Answer:** (A) [Go Back to Q4](#)



Q5.

**Solution****Concept:** Number Analogy using the rule:  $\text{result} = a \times b + a$ .**Step 1 – Verify the rule with given pairs:**

$(2, 3): 2 \times 3 + 2 = 6 + 2 = 8. \checkmark$

$(3, 4): 3 \times 4 + 3 = 12 + 3 = 15. \checkmark$

**Step 2 – Apply to (4, 5):**

$4 \times 5 + 4 = 20 + 4 = 24.$

**Why other options are wrong:**(A) 22:  $4 \times 5 + 2 = 22$  – uses +2 instead of +a (+4).(C) 20:  $4 \times 5 + 0 = 20$  – ignores the +a term entirely.(D) 25:  $5 \times 5 = 25$  – wrong base numbers.**Answer: (B)** [Go Back to Q5](#)

Q6.

**Solution****Concept:** Coding-Decoding – each letter shifted forward by 1 position in the alphabet.**Step 1 – Verify the rule with TIGER → UJHFS:**

$T(20) + 1 = 21 = U. \checkmark \quad I(9) + 1 = 10 = J. \checkmark \quad G(7) + 1 = 8 = H. \checkmark$

$E(5) + 1 = 6 = F. \checkmark \quad R(18) + 1 = 19 = S. \checkmark$

**Step 2 – Encode HORSE using +1 shift:**

$H(8) + 1 = 9 = I; \quad O(15) + 1 = 16 = P; \quad R(18) + 1 = 19 = S;$

$S(19) + 1 = 20 = T; \quad E(5) + 1 = 6 = F.$

Code = **IPSTF**.**Why other options are wrong:**

(A) GPQRD: H→G is -1 (backward shift), not +1.

(B) HSRSE: H is unchanged; letters not shifted consistently.

(D) HQSSD: H is unchanged and other shifts are wrong.

**Answer: (C)** [Go Back to Q6](#)

Q7.

**Solution****Concept:** Coding-Decoding – same +1 letter shift rule as Q6.**Step 1 – Encode SOUL using +1 shift:** $S(19) + 1 = 20 = T$ ;  $O(15) + 1 = 16 = P$ ;  $U(21) + 1 = 22 = V$ ;  $L(12) + 1 = 13 = M$ .**Step 2 – Write the code:**SOUL  $\rightarrow$  TPVM.**Why other options are wrong:**(A) RPKL:  $S \rightarrow R$  is  $-1$  (backward),  $O \rightarrow P$  is  $+1$  (inconsistent).(B) SNVM:  $S \rightarrow S$  (no shift), N is not from  $O + 1$ .(C) TPLM: T and P are correct, but  $U \rightarrow L$  is wrong ( $U + 1 = V$ , not L).**Answer:** (D)[Go Back to Q7](#)

Q8.

**Solution****Concept:** Blood Relations – two-step family chain.**Step 1 – Parse the statement:**“My mother’s brother” = the woman’s **maternal uncle**.**Step 2 – Find the relationship:**The man is the **son** of the woman’s maternal uncle.Uncle’s son = **Cousin**.**Why other options are wrong:**

(B) Nephew: a nephew is the son of the woman’s own sibling, not of her uncle.

(C) Uncle: the uncle is the mother’s brother; his son is a different person.

(D) Brother: a brother shares the same parents; this man’s father is the woman’s uncle.

**Answer:** (A)[Go Back to Q8](#)

Q9.

**Solution****Concept:** Direction Sense – tracking position after a multi-step journey with turns.**Step 1 – Trace the path (refer to the diagram in the question):**Start at  $X = (0, 0)$ , facing **North**.Walk **6 m North**: reach  $(0, 6)$ .**Turn right** (now facing East): walk **4 m East**: reach  $(4, 6)$ .**Turn right** (now facing South): walk **3 m South**: reach  $(4, 3)$ .

**Turn left** (now facing East): walk **2 m East**: reach (6, 3).

**Step 2 – Find direction from start:**

End point (6, 3) from start (0, 0):

$x = 6$  (positive  $\Rightarrow$  East),  $y = 3$  (positive  $\Rightarrow$  North).

She is to the East **and** North of her starting point, i.e., **North-East**.

**Why other options are wrong:**

(A) East: she has northward displacement ( $y = 3 \neq 0$ ), so not purely East.

(C) North: she has eastward displacement ( $x = 6 \neq 0$ ), so not purely North.

(D) South-East: her  $y$ -coordinate is positive (North), not negative (South).

Answer: (B) [Go Back to Q9](#)

Q10.

### Solution

**Concept:** Clock hand directions mapped to compass directions.

**Step 1 – Understand the clock at 6:00:**

At 6:00, the **hour hand** points straight down (towards 6 on the clock face) and the **minute hand** points straight up (towards 12 on the clock face). The two hands are exactly opposite each other.

**Step 2 – Map to compass:**

The hour hand points **South** (given). Since the minute hand is directly opposite, it points **North**.

**Why other options are wrong:**

(A) East: the minute hand points to 12 (straight up), not sideways.

(B) West: also sideways – incorrect for 6:00.

(D) South: both hands cannot point in the same direction at 6:00.

Answer: (C) [Go Back to Q10](#)

Q11.

### Solution

**Concept:** Classification – Odd One Out (Astronomical category).

**Step 1 – Classify each object:**

Mercury – planet orbiting the Sun. ✓

Venus – planet orbiting the Sun. ✓

Earth – planet orbiting the Sun. ✓

Mars – planet orbiting the Sun. ✓

**Moon** – natural satellite orbiting Earth, **not** a planet. ✗



**Step 2 – Identify the odd one out:**

All others are **planets** in our Solar System. The Moon is a **natural satellite** and does not orbit the Sun directly.

**Why other options are wrong:**

(A) Mercury, (B) Venus, (C) Earth: all are planets and correctly belong to the group.

Answer: (D) [Go Back to Q11](#)

Q12.

**Solution**

**Concept:** Classification – Odd One Out (Multiples of 11).

**Step 1 – Check divisibility by 11:**

$$33 \div 11 = 3 \text{ (exact). } \checkmark$$

$$44 \div 11 = 4 \text{ (exact). } \checkmark$$

$$55 \div 11 = 5 \text{ (exact). } \checkmark$$

$$77 \div 11 = 7 \text{ (exact). } \checkmark$$

$$63 \div 11 = 5.727 \dots \text{ (not exact). } \times \quad [63 = 7 \times 9]$$

**Step 2 – Identify the odd one out:**

63 is **not** a multiple of 11, so it does not belong to the group.

**Why other options are wrong:**

(B) 44:  $44 = 4 \times 11$  – a valid multiple.

(C) 77:  $77 = 7 \times 11$  – a valid multiple.

(D) 33:  $33 = 3 \times 11$  – a valid multiple.

Answer: (A) [Go Back to Q12](#)

Q13.

**Solution**

**Concept:** Ranking – finding the number of people between two positions.

**Step 1 – Find Anu's position from the left:**

Total students = 25. Anu is 8th from the right.

$$\text{Anu's position from left} = 25 - 8 + 1 = 18.$$

**Step 2 – Count students between Ravi (12th) and Anu (18th):**

$$\text{Students between} = 18 - 12 - 1 = 5.$$

**Verification:** Positions 13, 14, 15, 16, 17 lie between position 12 and 18 – that is 5 students.  $\checkmark$

**Why other options are wrong:**

- (A) 4: result of  $18 - 12 - 2 = 4$  (off-by-one error).  
 (C) 6: result of  $18 - 12 = 6$  (forgot to subtract 1 for the endpoints).  
 (D) 7: further overcount.

Answer: (B) [Go Back to Q13](#)

Q14.

### Solution

**Concept:** Venn Diagram – counting elements in exactly two sets.

**Step 1 – Find “exactly two” regions using the inclusion-exclusion data:**

$$\text{Tea} \cap \text{Coffee only} = 25 - 10 = 15.$$

$$\text{Coffee} \cap \text{Milk only} = 15 - 10 = 5.$$

$$\text{Tea} \cap \text{Milk only} = 20 - 10 = 10.$$

**Step 2 – Total drinking exactly two beverages:**

$$= 15 + 5 + 10 = 30.$$

**Verification using the diagram:** Region labels (only-T=25, only-C=20, only-M=15, T∩C only=15, C∩M only=5, T∩M only=10, all=10). Total =  $25 + 20 + 15 + 15 + 5 + 10 + 10 = 100$ . ✓

**Why other options are wrong:**

- (A) 25: counts only the Tea-Coffee overlap (not all three pairwise-only regions).  
 (B) 20: counts only the Tea-Milk overlap total (not the “exactly two” figure).  
 (D) 35: overcounts by including the all-three region ( $30 + 10 - 5 = 35$ ; wrong formula).

Answer: (C) [Go Back to Q14](#)

Q15.

### Solution

**Concept:** Mathematical Operations – symbol substitution followed by BODMAS evaluation.

**Step 1 – Replace symbols:**

$$+ \rightarrow \times, \quad \times \rightarrow -, \quad - \rightarrow +, \quad \div \rightarrow \div.$$

$$\text{Expression becomes: } 6 \times 4 - 2 + 3 \div 1.$$

**Step 2 – Apply BODMAS (multiplication and division first):**

$$6 \times 4 = 24; \quad 3 \div 1 = 3.$$

$$\text{Now: } 24 - 2 + 3 = 22 + 3 = 25.$$

**Why other options are wrong:**

- (A) 31: error in substitution or order (e.g., computing  $6 \times (4 - 2) + 3 \times 1 = 6 \times 2 + 3 =$



15; or other wrong grouping).

(B) 27: adding instead of subtracting the middle term.

(C) 22: stopping at  $24 - 2 = 22$  without adding the  $\div$  result.

**Answer:** (D) [Go Back to Q15](#)

**Q16.**

### Solution

**Concept:** Mirror Image – reflection of a figure about a vertical axis.

**Step 1 – Understand the original figure:**

The original figure is a right-pointing arrow: a rectangular body with a triangular head on the right side.

**Step 2 – Apply vertical mirror reflection:**

A vertical mirror swaps left and right. The right-pointing arrowhead moves to the left side, becoming a **left-pointing arrow**. The rectangular body remains, now on the right side. Up-down positions are unchanged.

**Step 3 – Match with options:**

Option (A) shows the correct mirror image: a left-pointing arrow (filled blue), which is the proper reflection of the original right-pointing arrow.

**Why other options are wrong:**

(B): arrow still points right – no reflection applied.

(C): arrow points downward – wrong axis of reflection (horizontal, not vertical).

(D): arrow is flipped vertically but still points right – reflects about a horizontal axis, not a vertical one.

**Answer:** (A) [Go Back to Q16](#)

**Q17.**

### Solution

**Concept:** Missing Number in Triangle – rule: inner = top + bottom-left – bottom-right.

**Step 1 – Verify the rule with given triangles:**

Triangle 1:  $5 + 8 - 3 = 10$ . ✓

Triangle 2:  $6 + 7 - 4 = 9$ . ✓

**Step 2 – Apply the rule to Triangle 3:**

Inner = 8 (given). Top = 9, Bottom-left = 5, Bottom-right = ?

$$9 + 5 - ? = 8$$

$$14 - ? = 8$$

$$? = 6.$$



**Why other options are wrong:**

(A) 5:  $9 + 5 - 5 = 9 \neq 8$ .

(C) 7:  $9 + 5 - 7 = 7 \neq 8$ .

(D) 8:  $9 + 5 - 8 = 6 \neq 8$ .

**Answer: (B)** [Go Back to Q17](#)

**Q18.**

### Solution

**Concept:** Pattern Matrix – arithmetic sequences with increasing common difference across rows.

**Step 1 – Identify the row-wise pattern:**

Row 1: 2, 6, 10 – common difference = +4.

Row 2: 3, 8, 13 – common difference = +5.

Row 3: 4, 10, ? – common difference = +6 (increases by 1 each row).

**Step 2 – Also verify the column-wise pattern:**

Column 1: 2, 3, 4 – difference +1.

Column 2: 6, 8, 10 – difference +2.

Column 3: 10, 13, ? – difference +3, so  $? = 13 + 3 = 16$ . ✓

**Step 3 – Find the missing number:**

$? = 10 + 6 = 16$ .

**Why other options are wrong:**

(A) 14:  $10 + 4 = 14$  – uses Row 1's difference, not Row 3's.

(B) 15:  $10 + 5 = 15$  – uses Row 2's difference.

(D) 18:  $10 + 8 = 18$  – wrong; the difference increment pattern gives +6, not +8.

**Answer: (C)** [Go Back to Q18](#)

**Q19.**

### Solution

**Concept:** Logical Puzzle – Deductive reasoning with colour assignments.

**Step 1 – Apply direct clues:**

Q = blue (given directly). S = yellow (given directly).

Remaining colours for P, R, T: red, green, white.

**Step 2 – Apply elimination clues:**

Clue: T does not wear red or white  $\Rightarrow$  T must wear **green**.

Remaining colours for P and R: red and white.

Clue: P does not wear green or white  $\Rightarrow$  P cannot wear white  $\Rightarrow$  P wears **red**.

Therefore R wears **white**.



**Final assignment:** P=red, Q=blue, R=white, S=yellow, T=green.

**Why other options are wrong:**

- (A) Red: P wears red (not R).
- (B) Green: T wears green (not R).
- (C) Blue: Q wears blue (not R).

**Answer: (D)** [Go Back to Q19](#)

**Q20.**

### Solution

**Concept:** Statement-Assumption – identifying what must be implicitly true for the statement to make sense.

**Step 1 – Analyse the statement:**

“Kindly use the stairs as the elevator is under maintenance.”

The notice **directs** people to use the stairs as an **alternative** to the elevator.

**Step 2 – Identify the implicit assumption:**

For this direction to be meaningful, it must be assumed that stairs are a **viable alternative** – i.e., that people are physically able to use stairs to reach upper floors.

**Option (A)** captures this assumption directly.

**Why other options are wrong:**

(B) The notice does not imply the elevator will *never* be repaired; “under maintenance” implies temporary downtime.

(C) The notice makes no claim about speed of stairs vs. elevator; speed is irrelevant.

(D) The purpose of the notice is *to inform* people – so the assumption is actually the opposite: people may *not* already know. This is not an assumption underlying the instruction itself, but rather its motivation; the *core* assumption is that stairs are usable.

**Answer: (A)** [Go Back to Q20](#)



**Answer Key**

| Q  | Ans | Q  | Ans | Q  | Ans | Q  | Ans | Q  | Ans |
|----|-----|----|-----|----|-----|----|-----|----|-----|
| 1  | B   | 2  | C   | 3  | D   | 4  | A   | 5  | B   |
| 6  | C   | 7  | D   | 8  | A   | 9  | B   | 10 | C   |
| 11 | D   | 12 | A   | 13 | B   | 14 | C   | 15 | D   |
| 16 | A   | 17 | B   | 18 | C   | 19 | D   | 20 | A   |

