

Key abbreviations: cm: centimetre, g: gram, kg: kilogram, km: kilometre, m: metre, ml: millilitre,
R: remainder

Answers to Test A Paper 1

Comprehension

Q1 D

Winter (the passage says 'It was January the fifth.')

Q2 C

They were siblings (the passage says 'Peter lay down again with his eyes on his brother.')

Q3 D

A children's party

Q4 C

Option 2 only (the passage says 'had given him self-reliance and an instinct of protection towards the other who was afraid of so many things')

Q5 A

Ten (the passage says 'They were older than he. Joyce was eleven and Mabel Warren thirteen.')

Francis and Peter are the same age (the passage says 'But he was the elder, by a matter of minutes')

Q6 C

He was too embarrassed to do so (the passage says 'His cheeks still bore the badge of a shameful memory')

Q7 A

Pragmatic (the passage describes how she offers sensible and practical suggestions and is not drawn in by the boys' excuses)

Q8 B

Adverb

Q9 B

Serene

Q10 C

Simile

Shuffled Sentences

Q1 B

wood The farmer insisted that his animals were free to roam.

Q2 D

that The auctioneer was thrilled to have sold the antique mirror.

Q3 A

is The audience enjoyed watching the gripping final.

Q4 E

yellow Wood must be kept dry in order for it to burn effectively.

Q5 A

closing Sheena liked to leave her window open at night.

Q6 E

and I found his behaviour to be unkind and uncharitable. OR I found his behaviour to be uncharitable and unkind.

Q7 B

majority Few occasions are as momentous as this one.

Q8 E

quest The sloth lazily progressed along the bough of the tree. OR The sloth progressed lazily along the bough of the tree.

Q9 A

in Several of the protesters were rounded up and sent to jail.

Q10 C

from You must learn to think for yourself and make your own decisions. OR You must learn to make your own decisions and think for yourself.

Q11 B

through The new television was twice as expensive as the old one.

Q12 A

with Gigantic snakes have slowly encroached into the territory.

Q13 E

partial Water is fundamental to human survival.

Q14 C

slide The health of the old man began to deteriorate rapidly. OR The health of the old man began to rapidly deteriorate OR The health of the old man rapidly began to deteriorate.

Q15 A

sauce The reporter found it hard to find an unbiased source.

Numeracy**Q1** 1,694

$$456 + 1,238 = 1,694$$

Q2 39

$$507 \div 13 = 39$$

Q3 48

$$134 + 123 - 221 + 12 = 48$$

Q4 17

Rearrange in ascending order:

7, 7, 8, 9, 12, 17, 17, 21, 34, 48, 51

Therefore, median is 17

Q5 37

Sequence is $-9, -8, -7, -6, -5$

So missing term is $43 - 6 = 37$

Q6 200

$$2.45 \text{ km} = 2,450 \text{ m} = 245,000 \text{ cm}$$

$$2,448 \text{ m} = 244,800 \text{ cm}$$

$$245,000 \text{ cm} - 244,800 \text{ cm} = 200 \text{ cm}$$

Q7 11

$$4B - 7 = 2B + 15$$

$$4B - 2B = 15 + 7$$

$$2B = 22$$

$$B = 11$$

Q8 219

Factors of 18: 1, 2, 3, 6, 9, 18

Third lowest factor is 3

$$73 \times 3 = 219$$

Q9 12

$$4\frac{3}{4} - 3\frac{1}{4} = 1\frac{2}{4} = 1\frac{4}{8} = \frac{12}{8}$$

Q10 9

Area of Triangle A =

$$9 \text{ cm} \times 9 \text{ cm} \times \frac{1}{2} = 40.5 \text{ cm}^2$$

Area of Triangle B =

$$3 \text{ cm} \times 3 \text{ cm} \times \frac{1}{2} = 4.5 \text{ cm}^2$$

$$40.5 \text{ cm}^2 \div 4.5 \text{ cm}^2 = 9$$

Q11 42

Cube has 6 faces

$$6 \times 7 = 42$$

Q12 21

Total apples produced last year =

$$82 \times 9 = 738$$

Extra apples produced this year =

$$927 - 738 = 189$$

$$\text{Average extra per tree} = 189 \div 9 = 21$$

Q13 348

$$203 \div 7 = 29$$

$$\text{Number of pens} = 29 \times 5 = 145$$

$$\text{Total} = 145 + 203 = 348$$

Problem Solving**Q1 A**

Sum of angles in a quadrilateral = 360°

4th angle =

$$360^\circ - 55^\circ - 134^\circ - 109^\circ = 62^\circ$$

Q2 E

Number with black hair = 50% of 350 = 175

Number with black hair and glasses

$$= \frac{2}{5} \times 175 = 70$$

Number with black hair, glasses and left-handed = $0.2 \times 70 = 14$

Q3 C

Area of 1 face = $24 \text{ cm}^2 \div 6 = 4 \text{ cm}^2$

Each face is a square so side length of cube = 2 cm

Volume of cube =

$$2 \text{ cm} \times 2 \text{ cm} \times 2 \text{ cm} = 8 \text{ cm}^3$$

Q4 B

1

Q5 D

Area of 1 square = $162 \text{ cm}^2 \div 2 = 81 \text{ cm}^2$

So side length of 1 square = 9 cm

Perimeter of Figure B consists of 6 of these sides

$$9 \text{ cm} \times 6 = 54 \text{ cm}$$

Q6 E

The ratio of lions to leopards is 9:2

$$9 \div 2 = 4.5$$

So there are 4.5 times more lions than leopards

So if there are Y leopards, there must be 4.5Y lions

The expression that shows this number of lions is $9Y \div 2$

Q7 E

Departures per hour = 4

Departures per day = $24 \times 4 = 96$

Departures in 3 days = $96 \times 3 = 288$

Q8 B

All years have 365 days, except leap years, which have 366

Leap years in first decade: 2000, 2004 and 2008

Leap years in second decade: 2012 and 2016

So there was 1 extra day in the first decade.

Q9 A

$$9 = 3(9 + 1) - (2 \times 9) = 30 - 18 = 12$$

Q10 D

Four terms separate the 4th and 8th term
Each term is 7 times bigger than the
previous one so 8th term must be 7⁴ times
bigger than 4th term:
 $7 \times 7 \times 7 \times 7 = 2,401$

Synonyms**Q1 C** ruse**Q2 B** forbid**Q3 E** severe**Q4 A** scatter**Q5 D** settle**Q6 E** remove**Q7 C** swindle**Q8 B** leeway**Q9 E** engage**Q10 B** relinquish**Q11 C** chastise**Q12 E** disclose**Q13 C** grasp**Q14 E** supplement**Q15 A** assert**Q16 E** compel**Q17 A** occupy**Q18 A** resuscitate**Q19 E** wail**Q20 D** home**Q21 B** bond**Q22 C** diminish**Q23 D** refuge**Q24 E** instigate**Non-Verbal Reasoning****Q1 E**

The figure in the top left consists of an inner
and an outer shape.

To form the figure in the top right, the outer
shape rotates 90° clockwise and the inner
shape rotates 90° anticlockwise. Also, the
shading of the two shapes switches.

These changes must be applied to the figure
in the bottom left to form the figure in the
bottom right.

Therefore, the answer is E.

Q2 D

In each figure, the small circle moves one place
clockwise and the small square moves one
place anticlockwise to form the figure below it.
Therefore, these rules should be applied to
the figure in the top right to form the figure
below.

Therefore, the answer is D.

Q3 B

In each row, the figure in the centre is a
combination of the figures on the left and
the right.

Therefore, the answer is B.

Q4 A

Each column contains three figures. One is
shaded white, one is shaded black and one is
shaded grey.

Each figure has one side less than the figure
above it.

Therefore, the answer is A.

Q5 D**Q6 B****Q7 B****Q8 C****Q9 A****Q10 D****Q11 A****Q12 C****Q13 B**

Answers to Test A Paper 2

Problem Solving**Q1 E**

$$\text{Matches won} = \frac{3}{5} \times 35 = 21$$

$$\text{Matches drawn} = 20\% \text{ of } 35 = 7$$

$$\text{Matches lost} = 35 - 21 - 7 = 7$$

Q2 B

$$11 \times 10.3 \text{ km} = 113.3 \text{ km}$$

Q3 I

Worst paid player salary

$$= £3,500 - £1,231 = £2,269$$

Q4 J

Number of players weighing 90 kg

$$\text{or less} = 24 - 8 = 16$$

$$\frac{16}{24} = \frac{2}{3}$$

Q5 F

Training begins at 10:45 a.m.

Players must arrive by 10:40 a.m.

 $\frac{1}{2}$ an hour before 10:40 a.m. is 10:10 a.m.**Q6 H**Return journey distance = $32 \text{ km} \times 2 = 64 \text{ km}$ Round trip distance = $32 \text{ km} + 64 \text{ km}$
= 96 km**Q7 A**Adult tickets cost = $13 \times \text{£}25 = \text{£}325$ Child tickets cost = $36 \times \text{£}12.50 = \text{£}450$ Total ticket costs = $\text{£}325 + \text{£}450 = \text{£}775$ **Q8 D**

Training starts at 10:45 a.m.

20 minutes before 10:45 a.m. is 10:25 a.m.

Q9 G

35 matches per season

Average number of balls used per match
= $315 \div 35 = 9$ **Q10 C**

$$\frac{16,500}{22,000} = \frac{3}{4}$$

Fraction of stadium that is empty

$$= 1 - \frac{3}{4} = \frac{1}{4}$$

Cloze**Q1 C** towards**Q2 I** deck**Q3 F** wandered**Q4 E** fine**Q5 A** coconut**Q6 B** crackle**Q7 H** clusters**Q8 G** coloured**Q9 D** bathing**Q10 J** rubber**Q11 H** broken**Q12 A** travelled**Q13 F** steep**Q14 E** excusing**Q15 D** intangible**Q16 B** absence**Q17 J** peep**Q18 G** flung**Q19 I** undulations**Q20 C** twisted**Non-Verbal Reasoning****Q1 B**

The arrows in each of the figures on the left point in a clockwise direction.

Therefore, the answer is B.

Q2 C

The figures on the left are each divided into two unequal parts by a black line that passes through two sides of the figure.

The smaller part of each figure on the left contains a black circle.

Therefore, the answer is C.

Q3 B

If a figure on the left has an even number of sides, it has dashed sides.

If a figure on the left has an odd number of sides, it has dotted sides.

Therefore, the answer is B.

Q4 EThe figures on the left each consist of two of the same shape. The right-hand of these two shapes is a 135° clockwise rotation of the left-hand shape.

Therefore, the answer is E.

Q5 D

The figures on the left each contain one more triangle than they do circles.

Therefore, the answer is D.

Q6 B**Q7 D****Q8 A****Q9 C****Q10 A****Q11 B**

From left to right, the cube turns one face to the left from one box to the next.

Therefore, the answer is B.

Q12 CFrom left to right, the circular figure rotates 45° clockwise from one box to the next.

From left to right, the two circles alternate from being within the shape to outside the shape. The circles are black within the shape and white or grey outside the shape.

Therefore, the answer is C.

Q13 B

Each figure consists of two shapes.

From left to right, the outer shape alternates between two positions.

From left to right, the inner shape rotates 90° clockwise from one box to the next.

Therefore, the answer is B.

Q14 A

Each figure consists of two shapes.

From left to right, the outer shape has one side less from one box to the next.

From left to right, the inner shape has one side more from one box to the next.

Therefore, the answer is A.

Q15 D

From left to right, the colour of circles in each figure change from one box to the next as follows:

Black circles turn grey. White circles turn black. Dot circles turn white. Grey circles turn to a dot.

Therefore, the answer is D.

Grammar & Spelling

- Q1 C** wry
Q2 D deactivate
Q3 C wierd (should be weird)
Q4 B acommodate (should be accommodate)
Q5 E hankerchief (should be handkerchief)
Q6 B cemetary (should be cemetery)
Q7 A rythm (should be rhythm)
Q8 E opress (should be oppress)

Antonyms

- | | |
|---------------------------|-------------------------|
| Q1 A considered | Q9 D compliant |
| Q2 E survive | Q10 C embrace |
| Q3 C decent | Q11 B unfamiliar |
| Q4 B reap | Q12 D rational |
| Q5 E thin | Q13 C boon |
| Q6 B excessive | Q14 E duplicate |
| Q7 C prosperous | Q15 A flourish |
| Q8 A thanklessness | |

Numeracy

- Q1** 120
 $2,085 - 1,965 = 120$
- Q2** 82
 Sequence is +6, +5, +6, +5
 So next term is +6; $76 + 6 = 82$
- Q3** 278
 $278 \div 9 = 30 \text{ R } 8$
- Q4** 191
 Ninths in 21 = $21 \times 9 = 189$
 $\frac{8}{36} = \frac{2}{9}$
 So ninths in $21\frac{8}{36} = 2 + 189 = 191$
- Q5** 10
 Multiply both sides by 2: $X = \frac{100}{X}$
 Multiply both sides by X: $X^2 = 100$
 So X must equal 10
- Q6** 15
 $321 \div 17 = 18 \text{ R } 15$

Q7 8,000

$$5 \text{ miles} = (5 \div \frac{5}{8}) \text{ km}$$

$$= (5 \times \frac{8}{5}) \text{ km} = (\frac{40}{5}) \text{ km} = 8 \text{ km}$$

$$8 \text{ km} = 8,000 \text{ metres}$$

Q8 34

$$13\% \text{ of } 300 = 39$$

$$\frac{1}{9} \text{ of } 45 = 5$$

$$39 - 5 = 34$$

Q9 C

Probability of picking a cherry or a pineapple

$$= \frac{6}{19} + \frac{1}{19} = \frac{7}{19}$$

Probability of picking neither a cherry nor a pineapple

$$= 1 - \frac{7}{19} = \frac{12}{19}$$

Q10 E

$$80 \text{ cents} \div 5 = 16$$

$$\text{Total weight} = 16 \times 1.2 \text{ g} = 19.2 \text{ g}$$

Q11 A

1 is the most common number

Q12 A

$$3X^\circ + 5X^\circ + 10X^\circ = 18X^\circ$$

$$18X^\circ = 180^\circ$$

$$X^\circ = 10^\circ$$

$$\text{Smallest angle} = 3X^\circ = 3 \times 10^\circ = 30^\circ$$

Q13 C

The coordinates of the 4th vertex must be the missing combination of possible x and y values: (-8, 10)

Q14 E

$$1\frac{2}{3} + 3\frac{2}{7} = 1\frac{14}{21} + 3\frac{6}{21} = 4\frac{20}{21}$$

Q15 D

$$\frac{3}{11} \times \frac{11}{9} = \frac{33}{99} = \frac{1}{3}$$

Q16 A

$$\frac{1}{8} \div \frac{3}{9} = \frac{1}{8} \times \frac{9}{3} = \frac{9}{24} = \frac{3}{8}$$

Q17 C

Work backwards: $0 + 9 = 9$; $3 \times 9 = 27$;
 $27 - 2 = 25$
 Square root of 25 is 5

Q18 B

Total mixture = 6 litres
 50% of 6 litres = 3 litres so 3 litres remain
 $\frac{1}{3}$ of 3 litres = 1 litre
 Remaining paint = 3 litres - 1 litre = 2 litres

Answers to Test B Paper 1

Comprehension

Q1 C

Framton's sister had recommended that he visit Mrs. Sappleton (the passage says 'My sister was staying here, at the rectory, you know, some four years ago, and she gave me letters of introduction to some of the people here')

Q2 B

To help him recover from an affliction (the passage says 'the nerve cure which he was supposed to be undergoing')

Q3 D

We do not know (the passage says 'An undefinable something about the room seemed to suggest masculine habitation.')

Q4 A

Confident (the passage says 'a very self-possessed young lady of fifteen')

Q5 C

Mrs. Sappleton was hoping for the return of her husband and brothers (the passage says 'Poor aunt always thinks that they will come back some day... That is why the window is kept open every evening till it is quite dusk.')

Q6 B

It had drowned on the moor (the passage says 'engulfed in a treacherous piece of bog... and the little brown spaniel that was lost with them')

Q7 D

Options 1 and 4 only (the passage says 'Privately he doubted more than ever whether these formal visits on a succession of total strangers would do much towards helping' and 'He made the last statement in a tone of distinct regret.')

Q8 A

Adverb

Q9 B

Hesitantly

Q10 D

Indefinite

Shuffled Sentences

Q1 C

in He kept on making the same mistakes.

Q2 D

joy The lawyer was not deterred by the severity of the crime.

Q3 D

currant Many voters were disillusioned with the current president.

Q4 A

toes Giraffes use their long necks to reach leaves on tall trees.

Q5 A

on Both of the women were upset with the outcome.

Q6 E

legal The star of the show contracted a mystery illness.

Q7 E

no There are some arguments against this hypothesis.

Q8 E

her The man bought a yellow bag for his daughter.

Q9 B

blister The hiker ascended the mountain at a blistering pace.

Q10 E

eaten Half of the fruit in the orchard was stolen.

Q11 A

above A vile smell emanated from the sewers below the city.

Q12 D

sold Business was booming for the young entrepreneur.

Q13 B

plentiful Endangered species are becoming extinct on a daily basis.

Q14 E

below The eager rower loved to spend time on the water.

Q15 A

police I could not decide whether to paint my room red or black. OR I could not decide whether to paint my room black or red.

Numeracy**Q1** 77

$$\frac{1}{9} \text{ of } 99 = 99 \div 9 = 11$$

$$\frac{7}{9} \text{ of } 99 = 7 \times 11 = 77$$

Q2 10

$$40 \text{ minutes is } \frac{2}{3} \text{ of } 1 \text{ hour}$$

$$\frac{2}{3} \text{ of } 15 \text{ km} = 10 \text{ km}$$

Q3 64

$$\text{Volume of cube with side length of } 2 \text{ cm} \\ = 2 \text{ cm} \times 2 \text{ cm} \times 2 \text{ cm} = 8 \text{ cm}^3$$

$$\text{Volume of cube with side length of } 8 \text{ cm} \\ = 8 \text{ cm} \times 8 \text{ cm} \times 8 \text{ cm} = 512 \text{ cm}^3$$

$$512 \text{ cm}^3 \div 8 \text{ cm}^3 = 64$$

Q4 63

$$X = 27 \times 2\frac{1}{3} = 63$$

Q5 6

Difference between the 1st, 3rd, 5th and 7th terms in sequence is -2

Difference between the 2nd, 4th, 6th and 8th terms in sequence is $+3$

$$\text{So missing term is } +3; 3 + 3 = 6$$

Q6 70

$$\frac{1}{6} \text{ of an hour} = 10 \text{ minutes}$$

$$10 \text{ minutes} \times 7 = 70 \text{ minutes}$$

Q7 10

$$4,330 \text{ rounded to the nearest } 50 = 4,350$$

$$4,330 \text{ rounded to the nearest } 20 = 4,340$$

$$4,350 - 4,340 = 10$$

Q8 16

$$\text{Tina's age this year} = 6$$

$$\text{Alex's age in } 3 \text{ years' time} = 3 \times 6 = 18$$

$$\text{Alex's current age} = 18 - 3 = 15$$

$$\text{Alex's age next year} = 15 + 1 = 16$$

Q9 1,886

$$92 \text{ Fibs} = 2 \text{ Fabs so } 46 \text{ Fibs} = 1 \text{ Fab}$$

$$41 \text{ Fobs} = 1 \text{ Fib so } (41 \times 46) \text{ Fobs} = 1 \text{ Fab}$$

$$41 \times 46 = 1,886$$

Q10 10

$$\text{Number of faces} = 8$$

$$\text{Number of edges} = 18$$

$$18 - 8 = 10$$

Q11 1,069

$$2,950 - 1,881 = 1,069$$

Q12 2,080

$$\text{Half a year} = 26 \text{ weeks}$$

$$\text{Total eggs produced} = 26 \times 80 = 2,080$$

Q13 9

$$2.02 \text{ litres} = 2,020 \text{ ml}$$

$$2,020 \div 220 = 9 \text{ R } 40$$

So 9 cups can be filled completely

Q14 143

$$14 + 19(4 - 2) + 7(6 + 7) = 14 + 38 + 91 \\ = 143$$

Q15 30

$$180 \div 6 = 30$$

Problem Solving**Q1** E

Possible combinations:

$$1) 1p \ 1p \ 1p \ 1p \ 1p \ 1p \ 1p$$

$$2) 1p \ 1p \ 1p \ 1p \ 1p \ 2p$$

$$3) 1p \ 1p \ 1p \ 2p \ 2p$$

$$4) 1p \ 2p \ 2p \ 2p$$

$$5) 5p \ 1p \ 1p$$

$$6) 5p \ 2p$$

Q2 E

April has 30 days

$$\frac{3}{10} \text{ are rainy: } 9 \text{ days}$$

$$\frac{7}{10} \text{ are non-rainy: } 21 \text{ days}$$

$$21 - 9 = 12$$

Q3 E

$$\frac{3}{4} \text{ of } 21 \neq 14$$

Q4 C

8 is in the tens of thousands column
so 80,000

Q5 B

$$8:30 \text{ a.m. to } 6 \text{ p.m. is } 9.5 \text{ hours}$$

$$9.5 \text{ hours minus half-hour lunch break}$$

$$= 9 \text{ hours; } 9 \times \text{£}6.50 = \text{£}58.50$$

Q6 E

Total consumed in 1 week

$$= 325 \text{ ml} \times 7 = 2,275 \text{ ml}$$

$$\text{Total consumed on Tuesday} = 2,275 - 350$$

$$- 280 - 100 - 175 - 480 - 450 = 440 \text{ ml}$$

Q7 D

40 red pens; 80 green pens; 80 blue pens

Percentage of green pens

$$= \frac{80}{200} \times 100 = 40\%$$

Q8 A

$$\text{Largest 3-digit prime number} = 997$$

$$\text{Largest 3-digit square number} = 961$$

$$997 + 961 = 1,958$$

Q9 A

$$7T + 8 = 85; 7T = 77; T = 11$$

$$6T - 8 = 66 - 8 = 58$$

Q10 D

6 hours of machine work to clear 80 m of ditch

160 m is double 80 m so double the number of hours required: $6 \times 2 = 12$ hours

12 hours of work shared between 3 machines: $12 \div 3 = 4$ hours

Synonyms**Q1 E** accountable**Q2 A** upright**Q3 B** expel**Q4 D** distress**Q5 B** submerge**Q6 E** loot**Q7 B** scorched**Q8 A** collude**Q9 E** quake**Q10 B** vigorous**Q11 C** agile**Q12 E** escape**Q13 C** warehouse**Q14 E** oppose**Q15 B** cajole**Q16 D** loiter**Q17 E** danger**Q18 E** torpid**Q19 D** dedicate**Q20 A** crouch**Q21 E** fraud**Q22 B** hang**Q23 A** bizarre**Q24 C** restrain**Non-Verbal Reasoning****Q1 D****Q2 B****Q3 A****Q4 D****Q5 C****Q6 A****Q7 D**

In all the other figures, the right-hand arrow is lower than the left-hand arrow.

Q8 E

All the other figures are rotations of the same shape.

Q9 D

In all the other figures, the bottom row contains one more symbol than the top row.

Q10 E

All the other figures are rotations of the same shape.

Q11 A

In all the other figures, the four arrows on the left are reflected through a vertical mirror line to form the four arrows on the right.

Q12 C

All the other figures consist of part of a loop of the sequence $+-\times\div$

Answers to Test B Paper 2**Problem Solving****Q1 E**

$$2(89 \times 3) = 534$$

Q2 I

Smallest factor of 70 is 1

Largest factor of 1,000 is 1,000

$$1,000 - 1 = 999$$

Q3 F

60 minutes in an hour so 12 trains pass through per hour

$$12 \times 24 = 288$$

Q4 L

Sequence is +999, +998, +997

So next term is +996; $3,993 + 996 = 4,989$

Q5 A

$$\text{Sum of 5 numbers} = 12 \times 5 = 60$$

$$\text{Sum of 6 numbers} = 13 \times 6 = 78$$

$$\text{So 6}^{\text{th}} \text{ number} = 78 - 60 = 18$$

Q6 C

$$54 \div 7 = 7 \text{ R } 5$$

Q7 B

$$\text{Cost of 1 apple} = £1.75 \div 7 = £0.25$$

$$£8.95 \div £0.25 = 35 \text{ R } £0.20$$

So 35 apples can be bought with £8.95

Q8 J

$$200 \div 0.5 = 400$$

Q9 K

$$18 \times 18 = 324$$

Q10 D

Numbers in Set D: 16, 36, 64
So there are 3 numbers in Set D

Q11 H

Number of blue cards is $\frac{5}{8} \times 320 = 200$

Q12 O

20% of 5 days per week is 1 day per week
So Martin cycles 1 day per week
He takes 4 weeks' holiday so he travels to work for 48 weeks per year
 $48 \times 1 = 48$

Q13 M

Jon = X; Harry = 2X; Peter = 2X + 3
 $X + 2X + 2X + 3 = 48$; $5X = 45$; $X = 9$
Peter = $2X + 3 = 18 + 3 = 21$

Q14 N

Number of children = 30% of 1,200 = 360
Number of adults = $1,200 - 360 = 840$
Sweets eaten by children = $360 \times 9 = 3,240$
Sweets eaten by adults = $840 \times 4 = 3,360$
Total number of sweets eaten
 $= 3,240 + 3,360 = 6,600$

Q15 G

$65 \times 0.07 \times 100 = 65 \times 7 = 455$

Cloze

- | | |
|--------------------------|--------------------------|
| Q1 B sultry | Q11 H state |
| Q2 E occupants | Q12 E landscape |
| Q3 F opposite | Q13 A treacherous |
| Q4 H emphatically | Q14 C climate |
| Q5 D attentions | Q15 F rare |
| Q6 A aunt | Q16 D species |
| Q7 J window | Q17 G important |
| Q8 G reluctantly | Q18 J population |
| Q9 C another | Q19 B study |
| Q10 I protested | Q20 I number |

Non-Verbal Reasoning**Q1 C**

The figures on the left each have thirteen sides.
Therefore, the answer is C.

Q2 B

The shapes in the top right and bottom left quarters of each figure on the left have the same number of sides.
Therefore, the answer is B.

Q3 E

In each figure on the left, the number of black squares equals the number of horizontal lines above the squares.
Therefore, the answer is E.

Q4 E

In each figure on the left, the number of circles is twice the number of sides of the shape they are in.
Therefore, the answer is E.

Q5 C

The figures on the left each consist of the same eight symbols, each appearing once.
Therefore, the answer is C.

Q6 B**Q7 C****Q8 D****Q9 A****Q10 D****Q11 B**

The shading of the figure changes from striped to grey.
The border of the shape changes from dotted to solid and the shape rotates 180° .
Therefore, the answer is B.

Q12 B

The four shapes within the cross shape move and rotate as follows:
The shape at the top rotates 90° anticlockwise and moves to the bottom.
The shape on the left moves to the top.
The shape at the bottom rotates 180° and moves to the right.
The shape on the right rotates 90° clockwise and moves to the left.
Therefore, the answer is B.

Q13 C

The number of points on the star decreases by 4.
Therefore, the answer is C.

Q14 A

The outer grey circles turn white and their border changes from solid to dashed.
The middle white circles turn grey.
The inner black circles turn white.
Therefore, the answer is A.

Q15 A

The two shapes in the square switch places.
Therefore, the answer is A.

Antonyms

- Q1 E** deteriorate **Q10 E** insincere
Q2 D support **Q11 C** dignify
Q3 E unleash **Q12 A** deprive
Q4 B improvise **Q13 E** undermine
Q5 E common **Q14 B** outgoing
Q6 D worsen **Q15 E** acquiescent
Q7 B ally **Q16 A** indifferent
Q8 E avoid **Q17 A** placid
Q9 B entertain **Q18 D** deduct

Numeracy

- Q1 120**
 $77,898 - 77,778 = 120$
- Q2 5**
 $5X - 8 = 2X + 7; 5X - 2X = 7 + 8;$
 $3X = 15; X = 5$
- Q3 290**
 Sequence is $-30, -40, -50$
 So next term is $-60; 350 - 60 = 290$
- Q4 345**
 Half of 726 = 363
 $363 - 18 = 345$
- Q5 15**
 Area = $7.5 \text{ cm} \times 4 \text{ cm} \times 0.5 = 15 \text{ cm}^2$
- Q6 15**
 Area of surface = $1.5 \text{ m} \times 1.5 \text{ m} = 2.25 \text{ m}^2$
 $2.25 \text{ m}^2 \div 0.15 \text{ m}^2 = 15$
- Q7 217**
 7 months with 31 days: Jan, Mar, May, Jul, Aug, Oct, Dec
 $31 \times 7 = 217$
- Q8 234**
 3 hours = 180 minutes
 $0.9 \text{ hours} = 0.9 \text{ of } 60 \text{ minutes} = 54 \text{ minutes}$
 $180 \text{ minutes} + 54 \text{ minutes} = 234 \text{ minutes}$
- Q9 27**
 $2.5:7.5 = 1:3$
 $81 \div 3 = 27$
- Q10 10**
 Savings per week = 15% of £35 = £5.25
 $9 \times £5.25 = £47.25$
 $10 \times £5.25 = £52.50$
 So 10 weeks are needed
- Q11 825**
 Half of 22 = 11
 $75 \times 11 = 825$
- Q12 66**
 Number of books read = $(12 \times 0) + (11 \times 1) + (7 \times 2) + (8 \times 3) + (3 \times 4) + (1 \times 5) = 11 + 14 + 24 + 12 + 5 = 66$
- Q13 2**
 Shape B is four times as large as half of Shape A so Shape B must be two times as large as Shape A.
- Q14 48**
 Time spent at work in 5 days is $\frac{2}{5} \times 5 = \frac{10}{5} = 2$ days
 $= 2 \times 24 \text{ hours} = 48 \text{ hours}$
- Q15 30**
 $1 = \frac{9}{9}$ so $3 = \frac{27}{9}$
 $\frac{1}{3} = \frac{3}{9}$
 So $3 \frac{3}{9} = \frac{27}{9} + \frac{3}{9} = \frac{30}{9}$
 So there are 30 ninths in $3 \frac{3}{9}$
- Q16 720**
 $2.5\% \text{ of } U = 18$
 So $1\% \text{ of } U = 18 \div 2.5 = 7.2$
 So $100\% \text{ of } U = 7.2 \times 100 = 720$
- Q17 45**
 $10\% \text{ of } 50 \text{ seconds} = 5 \text{ seconds}$
 Jill's time = 50 seconds - 5 seconds
 $= 45 \text{ seconds}$
- Q18 0**
 There 7 people in front of Omar and 6 people behind him.
 So he stands 8th out of 14, so he is in the 2nd half of the queue.
 So there is zero probability that he is in the first half of the queue.