## Numerical Reasoning Free Test 2

 Solutions Booklet
## Instructions

This numerical reasoning test comprises $\mathbf{3 0}$ questions, and you will have $\mathbf{3 0}$ minutes in which to correctly answer as many as you can. Calculators are permitted for this test, and it is recommended you have some rough paper to work on.

You will have to work quickly and accurately to perform well in this test. If you don't know the answer to a question, leave it and come back to it if you have time. Each question will have five possible answers, one of which is correct. You may click Back and Next during the test to review or skip questions.

You can submit your test at any time. If the time limit is up before you click submit the test will automatically be submitted with the answers you have selected. It is recommended to keep working until the time limit is up.

Try to find a time and place where you will not be interrupted during the test. The test will begin on the next page.

| Company | Company <br> Annual Profit $(£)$ | Cost to Buy <br> Company $(£)$ | Number of <br> Employees |
| :---: | :---: | :---: | :---: |
| A | 20,000 | 18,000 | 5 |
| B | 26,000 | 25,000 | 8 |
| C | 21,000 | 20,000 | 8 |
| D | 30,000 | 30,000 | 18 |

Q1 Which company has the highest annual profit per employee?
(A) A
(B) B
(C) C
(D) D

Step 1 - Simply divide the annual profit by the number of employees for each company: Company $A=£ 4,000 /$ employee.
Company $B=£ 3,250 /$ employee.
Company $C=£ 2,625 /$ employee.
Company $D=£ 1,667 /$ employee.
Tip - This is a relatively easy question; don't waste time by looking for anything more complicated.

Thus the correct answer is (A) A

| Company | Company <br> Annual Profit (£) | Cost to Buy <br> Company ( $£$ ) | Number of <br> Employees |
| :---: | :---: | :---: | :---: |
| A | 20,000 | 18,000 | 5 |
| B | 26,000 | 25,000 | 8 |
| C | 21,000 | 20,000 | 8 |
| D | 30,000 | 30,000 | 18 |

Q2 If the profits per employee remain the same, how many extra employees would Company B have to recruit to achieve annual profits of $£ 39,000$ ?
(A) 6
(B) 3
(C) 12
(D) 4

Step 1 - For company B, profit per employee is originally ( $£ 26,000 \div 8)=£ 3,250 /$ employee. So $£ 39,000 \div £ 3,250=12$ employees, which is 4 more than they currently have.

Tip - Whilst each question can be done in isolation, it will help here if you can quickly locate the workings from the previous question.

Thus the correct answer is (D) 4

| Company | Company <br> Annual Profit (£) | Cost to Buy <br> Company (£) | Number of <br> Employees |
| :---: | :---: | :---: | :---: |
| A | 20,000 | 18,000 | 5 |
| B | 26,000 | 25,000 | 8 |
| C | 21,000 | 20,000 | 8 |
| D | 30,000 | 30,000 | 18 |

Q3 If every employee of Company D contributes equally, how much would each employee have to contribute in order to collectively buy Company A?
(A) $£ 1,000$
(B) $£ 1,500$
(C) $£ 1,700$
(D) $£ 2,700$

Step 1 - We are told that the cost to buy Company $A$ is $£ 18,000$. We are also told there are 18 employees in Company D. So $£ 18,000 \div 18$ employees $=£ 1,000$ per person.

Thus the correct answer is (A) $£ 1,000$


Q4 Between 1990 and 2000, what was the increase in energy use for the PC Room, Meeting Rooms and Office Space combined?
(A) 50 kWh
(B) 184 kWh
(C) 188 kWh
(D) Cannot say

Step 1 - The graphs give percentages, with the total shown at the bottom. Don't waste time by working out the kWh value for each of the PC Room, the Meeting Rooms and the Office Space. Use the percentages and add up at the end:

In 1990: $(12 \%+12 \%+41 \%)$ of $17,000 \mathrm{kWh}=11,050 \mathrm{kWh}$
In 2000: $(21 \%+14 \%+39 \%)$ of $15,000 \mathrm{kWh}=11,100 \mathrm{kWh}$.
Which is an increase of 50 kWh .

Thus the correct answer is (A) 50kWh


Q5 If the Building Energy Use today is 6\% less than it was in 2000, by what percentage is today's Building Energy Use lower than that of 1990 ?
(A) $82.9 \%$
(B) $17.1 \%$
(C) $17.8 \%$
(D) Cannot say

Step 1 - Total energy usage in $2000=15,000 \mathrm{kWh}$, so today's at $6 \%$ less is $15,000 \times 0.94=$ $14,100 \mathrm{kWh}$. This compares with 1990 levels of $17,000 \mathrm{kWh}$.

Step 2 - To work out the reduction from 17,000 to 14,100, calculate $(14,100 \div 17,000)=$ 0.8294 , which is a reduction of $(1-0.8294=0.17059) 17.1 \%$.

Thus the correct answer is (B) 17.1\%


Q6 Which space experienced the smallest reduction in kWh used between 1990 and 2000?
(A) Office Space
(B) Print Room
(C) Meeting Rooms
(D) PC Room

Step 1 - We can rule out the PC Room from the possible answers by inspection since it is apparent its energy use actually increased between 1990 and 2000.

Step 2 - So the other three possible answers.

Print Room: 2,550-1,800 = 750kWh.
Office Space: 6,970-5,850=1,120kWh.
Meeting Rooms: 2,040-2,100 = Increase of 60kWh (note question asked for smallest reduction).

Thus the correct answer is (B) Print Room

| Sector | Male | Female |
| :--- | :---: | :---: |
| Voluntary Work | 41,000 | 67000 |
| IT | 121,000 | 107,000 |
| Engineering | 398,000 | 105,000 |
| Legal Services | 273,000 | 251,000 |
| Healthcare | 227,000 | 271,000 |
| Business Services | 186,000 | 124,000 |
| Self Employed | 45,000 | 62,000 |
| Unemployed | 52,000 | 43,000 |
|  | $1,343,000$ | $1,031,000$ |

Q7 Approximately what percentage of the people sampled are unemployed?
(A) $7 \%$
(B) $5 \%$
(C) $6 \%$
(D) $4 \%$

Step 1 - Make sure you add together the male and female figures to arrive at a figure for 'people'.
Total number unemployed $=52,000+43,000=95,000$.
Step 2 - Total number people sampled $=1,343,000+1,031,000=2,374,000$.

Step 3 - So now $95,000 \div 2,374,000=4 \%$.
Thus the correct answer is (D) 4\%

| Sector | Male | Female |
| :--- | :---: | :---: |
| Voluntary Work | 41,000 | 67000 |
| IT | 121,000 | 107,000 |
| Engineering | 398,000 | 105,000 |
| Legal Services | 273,000 | 251,000 |
| Healthcare | 227,000 | 271,000 |
| Business Services | 186,000 | 124,000 |
| Self Employed | 45,000 | 62,000 |
| Unemployed | 52,000 | 43,000 |
|  | $1,343,000$ | $1,031,000$ |

Q8 If it is predicted that the number of females employed in IT will rise by $10 \%$ every year, but the number of males stays the same, what percent of IT employees would be female after a three year period?
(A) $54.1 \%$
(B) $53.5 \%$
(C) $85.0 \%$
(D) $45.5 \%$

Step 1 - Number of female IT employees to start with is 107,000 from the table.
Step 2 - If the number of female employees rises by 10\%, that gives 142,417 employees after three years $(107,000 \times 1.10 \times 1.10 \times 1.10=142,417)$.

Step 3 - The number of male IT employees is still 121,000, so the total in IT is now 142,417 + $121,000=263,417$. So 142,417 out of 263,417 IT employees is $54.07 \%$.

Tip - With this question, where we are dealing with number of people, you should end up with integers in the working since it is not possible to have part of a person. If you start to get decimals, consider whether you have made a mistake.

Thus the correct answer is (A) 54.1\%

| Town |  | Aug | Sep | Oct | Nov | Average cost per accident (£) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ribley | Number of Accidents | 8 | 6 | 12 | 10 | 1,900 |
|  | Vehicles on Road* | 85 | 76 | 79 | 81 |  |
| Wartop | Number of Accidents | 14 | 18 | 4 | 20 | 3,200 |
|  | Vehicles on Road* | 112 | 101 | 89 | 117 |  |
| Surren | Number of Accidents | 6 | 20 | 9 | 21 | 1,050 |
|  | Vehicles on Road* | 96 | 104 | 119 | 125 |  |
| *In Thousands |  |  |  |  |  |  |

Q9 What was the average accident cost per vehicle on the road in Ribley in November?
(A) $£ 0.23$
(B) $£ 0.47$
(C) $£ 15.40$
(D) $£ 2.30$

Step 1 - Hopefully you have noticed that the 'Vehicles on Road' figures are in thousands. Total average cost of accidents in Ribley in November $=10 \times £ 1,900=£ 19,000$. Number of vehicles on road $=81,000$. So $£ 19,000 \div 81,000=£ 0.2346$.

Tip - Don't be fooled into thinking the answer is simply the 'Average cost per accident' figure given on the right hand side; per vehicle on the road is what the question is after. If it looks as though all you have to do for a question is read a number from the figure, you have probably misunderstood.

Thus the correct answer is (A) £0.23

| Town |  | Aug | Sep | Oct | Nov | Average cost per accident <br> (£) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ribley | Number of Accidents | 8 | 6 | 12 | 10 | 1,900 |
|  | Vehicles on Road* | 85 | 76 | 79 | 81 |  |
| Wartop | Number of Accidents | 14 | 18 | 4 | 20 | 3,200 |
|  | Vehicles on Road* | 112 | 101 | 89 | 117 |  |
| Surren | Number of Accidents | 6 | 20 | 9 | 21 | 1,050 |
|  | Vehicles on Road* | 96 | 104 | 119 | 125 |  |
| *In Thousands |  |  |  |  |  |  |

Q10 Comparing Wartop with Surren, what was the difference in average accident cost per vehicle on the road in October?
(A) 3.4 p
(B) $6.4 p$
(C) $£ 64.60$
(D) $£ 0.70$

Step 1 - The working is similar to the previous question, but there is a but more work to this question as you have to work it out for two towns. Again, don't forget that the 'Vehicles on Road' figure is in thousands. The fact that the question asks for 'average accident cost' means we can answer the question because we are given the 'Average cost per accident' figure to apply to all accidents. Otherwise we'd have to know the cost of every single accident.

Wartop: ( $£ 3,200$ per accident $x 4$ accidents $) \div 89,000$ vehicles on road $=(12,800) \div 89,000=$ £0.1438.
Surren: ( $£ 1,050$ per accident $\times 9$ accidents) $\div 119,000$ vehicles on road $=(9,450) \div 119,000=$ £0.0794.

Step 2 - Difference $=£ 0.064$.
Thus the correct answer is (B) 6.4p

| Town |  | Aug | Sep | Oct | Nov | Average cost per accident <br> (£) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ribley | Number of Accidents | 8 | 6 | 12 | 10 | 1,900 |
|  | Vehicles on Road* | 85 | 76 | 79 | 81 |  |
| Wartop | Number of Accidents | 14 | 18 | 4 | 20 | 3,200 |
|  | Vehicles on Road* | 112 | 101 | 89 | 117 |  |
| Surren | Number of Accidents | 6 | 20 | 9 | 21 | 1,050 |
|  | Vehicles on Road* | 96 | 104 | 119 | 125 |  |
| *In Thousands |  |  |  |  |  |  |

Q11 The only towns in the County are Ribley, Wartop and Surren. What was the average accident cost per vehicle on the road in September for the County?
(A) $£ 0.17$
(B) $£ 0.32$
(C) $£ 0.94$
(D) $£ 20.50$

Tip - Don't be fooled into working out the average accident cost per vehicle on road for all three towns, and then finding the average of these by summing and dividing by three. This is not the overall average, this would give a distorted average toward the town with the lowest number of accidents.

Step 1 - We need to first find the total costs of all accidents for all towns: $(£ 1,900 \times 6)+$ $(£ 3,200 \times 18)+(£ 1,050 \times 20)=£ 90,000$.

Step 2 - Now divide this by the total number of vehicles on the road for all three towns $(76,000+101,000+104,000)=281,000$.

Step 3-So $£ 90,000 \div 281,000=£ 0.320$.

Thus the correct answer is (B) $£ 0.32$


Q12 In 1996, total output from all fuels was 200TWh. If output for Nuclear in 2006 was twice that for Coal in 1996, what was the output for Nuclear in 2006 ?
(A) 140 TWh
(B) 400 TWh
(C) 64 TWh
(D) 96 TWh

Tip - If you read this quickly, it might be daunting. It needn't be if you take each step at a time.
Step 1 - We are told that the total output from all fuels in 1996 is 200TWh, so we can work out what is was for coal in 1996.
Coal in 1996 was $35 \%$ of 200TWh: 70TWh. So Nuclear in 2006 is twice this: 140 TWh.

Thus the correct answer is (A) 140TWh


Q13 If between 1996 and 2006, Renewables output doubled to 18TWh, approximately what was the Gas output in 1996 ?
(A) 129 TWh
(B) 86 TWh
(C) 120 TWh
(D) 110TWh

Tip - Again, work through each step using what we have been told. Bear in mind you never need information that was given in the previous question; each question should stand alone.

Step 1 - So in 2006 we are told Renewables was 18TWh, which was double what it was in 1996: 9TWh.

Step 2 - Therefore, if 9TWh is 3\% of the total (according to chart), the total in 1996 was $300 T W h$ ( $9 T W h \div 0.03=300 T W h$ ). Gas we are told made up $43 \%$ in 1996 , i.e. $0.43 x$ $300 T W h=129 T W h$.

Thus the correct answer is (A)129TWh


Q14 If total output was 200TWh in 1996 and 320TWh in 2006, what was Gas output in 2001?
(A) 107 TWh
(B) 133 TWh
(C) 120 TWh
(D) Cannot say

This is a fairly obvious 'cannot say' question. Don't try to extrapolate between 1996 and 2000 since we are not told what the trend was. No data is given, or can be implied, for 2001 in the question. Often, it is less obvious that the answer cannot be determined from the available information.

Thus the correct answer is (D) Cannot say

|  | Refund Data Report |  |
| :--- | :---: | :---: |
| Refund Cause | This Year <br> (\% of total refunds) | Last Year <br> (\% of total refunds) |
|  | Total number of refunds <br> not given | Total number of refunds <br> 912 |
| Faulty Software | 27 | 32 |
| Faulty Hardware | 48 | 41 |
| Delivery Damage | 9.5 | 8 |
| False Advertisement | 1.5 | 1 |
| Customer Service | 12 | 15 |
| Other | 2 | 3 |

Q15 This year saw a $20 \%$ increase in the total number of refunds over last year. Approximately how many refunds were issued this year due to Delivery Damage?
(A) 102
(B) 104
(C) 124
(D) 1040

Step 1 - Total refunds last year: 912, so for this year add 20\% by multiplying 912 by 1.2 which comes to 1094.4.

Step 2 - Of these 1094.4 refunds, we are told from the table $9.5 \%$ were refunded due to delivery damage. So $0.095 \times 1094.4=103.97$. The fact that the questions asks for an 'approximate' number of refunds means our decimal place answer for what can be only an integer is OK (in fact it should encourage us because an integer answer would not ask for an 'approximate' number in the question.)

Thus the correct answer is (B) 104

|  | Refund Data Report |
| :--- | :---: | :---: |

Q16 The number of refunds last year due to Faulty Hardware was an increase of $15 \%$ above the year before last. Approximately how many complaints were received from Faulty Hardware in the year before last?
(A) 186
(B) 215
(C) 325
(D) 343

Step 1 - Start with the total for last year: 912.
Step 2 - From the table we see that $41 \%$ of these were due to Faulty Hardware, so we know that last year there were ( $0.41 \times 912=$ ) 373.92 refunds due to Faulty Hardware.

Step 3 - Now, we are told in the passage that this figure is a $15 \%$ increase above the year before last. So $373.92 \div 1.15=325.15$ will be the number of refunds for the year before last.

Thus the correct answer is (C) 325

|  | Refund Data Report |  |
| :--- | :---: | :---: |
| Refund Cause | This Year <br> (\% of total refunds) | Last Year <br> (\% of total refunds) |
|  | Total number of refunds <br> not given | Total number of refunds <br> 912 |
| Faulty Software | 27 | 32 |
| Faulty Hardware | 48 | 41 |
| Delivery Damage | 9.5 | 8 |
| False Advertisement | 1.5 | 1 |
| Customer Service | 12 | 15 |
| Other | 2 | 3 |

Q17 If the total number of refunds this year was 840 , by what percentage did Faulty Hardware refunds increase between last year and this year?
(A) $7.8 \%$
(B) $2.8 \%$
(C) $79.1 \%$
(D) $11.0 \%$

Step 1 - This one is a fairly straight forward application of percentages.
Last year $=912 \times 41 \%=373.9$
This year $=840 \times 48 \%=403.2$
Therefore increase $=403.2 \div 373.9=1.0784$, which is an increase of $7.84 \%$.
Thus the correct answer is (A) 7.8\%

## UK Pounds Sterling

(£)
(\$)

| 1.00 UK Pounds Sterling $=$ | $£ 1.00$ | $\$ 1.74$ |
| ---: | :---: | :---: |
| 1.00 US Dollar $=$ | $£ 0.57$ | $\$ 1.00$ |
| 1.00 Canadian Dollar $=$ | $£ 0.50$ | $\$ 0.87$ |
| 1.00 JP Yen $=$ | $£ 0.005$ | $\$ 0.008$ |
| 1.00 Euro $=$ | $£ 0.69$ | $\$ 1.21$ |
| 1.00 Russian Ruble $=$ | $£ 0.02$ | $\$ 0.035$ |

Q18 What was the approximate value in Pounds Sterling of 150 Canadian Dollars in May 2004?
(A) $£ 55$
(B) $£ 75$
(C) $£ 130$
(D) $£ 300$

Step 1 - The table shows us that 1 Canadian Dollar is worth 0.5 Pounds Sterling. So 150 $C A D \times 0.5=£ 75$.

Thus the correct answer is (B) $£ 75$

Q19 Approximately how many Euros was 85 Russian Rubles worth in May 2004?
(A) 2.46
(B) 2,933
(C) 1,900
(D) Cannot say

You have to convert both Euros and Rubles to a common reference (we'll use Pounds). So for 85 Rubles; $85 \times 0.020=£ 1.7$. We are told one Euro is worth $£ 0.69$, so $£ 1.7$ must be worth €2.464.

Thus the correct answer is (A) 2.46

## UK Pounds Sterling US Dollars

(£)
(\$)

| 1.00 UK Pounds Sterling $=$ | $£ 1.00$ | $\$ 1.74$ |
| ---: | :---: | :---: |
| 1.00 US Dollar $=$ | $£ 0.57$ | $\$ 1.00$ |
| 1.00 Canadian Dollar $=$ | $£ 0.50$ | $\$ 0.87$ |
| 1.00 JP Yen $=$ | $£ 0.005$ | $\$ 0.008$ |
| 1.00 Euro $=$ | $£ 0.69$ | $\$ 1.21$ |
| 1.00 Russian Ruble $=$ | $£ 0.02$ | $\$ 0.035$ |

Q20 In May 2004 approximately how many more Canadian Dollars would you have got for 100 UK Pounds Sterling than you would for 120 US Dollars?
(A) $C A D \$ 35$
(B) $C A D \$ 54$
(C) CAD\$60
(D) CAD\$62

Step 1-100 Pounds $=200$ CAD $(100 \div 0.5)$.
Step 2-120 US Dollars = 137.93 CAD $(120 \div 0.87)$.
Step 3 - So the difference is 200-137.93=62.07 CAD.
Thus the correct answer is (D) CAD\$62

|  | UK |  | France |  |
| :---: | :---: | :---: | :---: | :---: |
| Mass Range (Kg) | Number of Cars (000) |  |  |  |
|  | 1995 | 2000 | 1995 | 2000 |
| 0-499 | 4 | 9 | 6 | 11 |
| 500-999 | 21 | 32 | 56 | 89 |
| 1000-1499 | 292 | 341 | 346 | 491 |
| 1500-1999 | 420 | 495 | 510 | 586 |
| 2000-Unlimited | 71 | 65 | 64 | 26 |

Q21 How many cars under 2,000kg were there in France in 1995?
(A) 918,000
(B) 918
(C) 408,000
(D) 737,000

Step 1 - Simply add up the number of cars in each bracket up to $1,999 \mathrm{~kg}$. There's also a little thing to look out for which is that these figures are all in thousands. So $510+346+56+6$ (thousand) $=918,000$.

Thus the correct answer is (A) 918,000

|  | UK |  | France |  |
| :---: | :---: | :---: | :---: | :---: |
| Mass Range (Kg) | Number of Cars (000) |  |  |  |
|  | 1995 | 2000 | 1995 | 2000 |
| 0-499 | 4 | 9 | 6 | 11 |
| 500-999 | 21 | 32 | 56 | 89 |
| 1000-1499 | 292 | 341 | 346 | 491 |
| 1500-1999 | 420 | 495 | 510 | 586 |
| 2000-Unlimited | 71 | 65 | 64 | 26 |

Q22 What was the combined mass of all the cars in the UK in 2000?
(A) $211,000 \mathrm{~kg}$
(B) $858,500 \mathrm{~kg}$
(C) $1,426,500 \mathrm{~kg}$
(D) Cannot Say

You might be tempted to do something like multiply the number of cars in each range by their average weight, or something similar. Don't; read the question carefully. Because the data is grouped, we don't know how many cars are at the bottom end of the group, and how many are towards the top. It is impossible to say from the data given.

Thus the correct answer is (D) Cannot Say

|  | UK |  | France |  |
| :---: | :---: | :---: | :---: | :---: |
| Mass Range (Kg) | Number of Cars (000) |  |  |  |
|  | 1995 | 2000 | 1995 | 2000 |
| 0-499 | 4 | 9 | 6 | 11 |
| 500-999 | 21 | 32 | 56 | 89 |
| 1000-1499 | 292 | 341 | 346 | 491 |
| 1500-1999 | 420 | 495 | 510 | 586 |
| 2000-Unlimited | 71 | 65 | 64 | 26 |

Q23 In the UK, what was the percentage increase in the total number of cars between 1995 and 2000?
(A) $15.0 \%$
(B) $16.6 \%$
(C) $32.1 \%$
(D) $58.0 \%$

You have to find the sum of the number of cars in 1995, do the same for 2000, and work out the percentage difference between the two.

Step 1-In 1995: $4+21+292+420+71=808$ (thousand)
Step $2-\ln 2000: 9+32+341+495+65=942$ (thousand)

Step 3 - So the percentage increase was $942 \div 808=1.166=16.6 \%$.

Thus the correct answer is (B) 16.6\%

Population Structure 1985

|  | Population at <br> start of year <br> (millions) | Live Births per <br> 1000 population <br> (Jan-Dec) | Deaths per <br> population <br> (Jan-Dec) | Percentage of population at <br> start of year aged: |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
| UK | 56.6 | 13.3 | 11.8 | 19 | 60 or over |
| France | 55.2 | 13.9 | 10.0 | 21 | 19 |
| Australia | 46.5 | 8.0 | 6.5 | 19 | 17 |
| Germany | 61.0 | 9.6 | 11.5 | 15 | 20 |
| Greece | 28.5 | 13.2 | 7.8 | 21 | 18 |

Q24 How many live births occurred in 1985 in Greece and Australia combined?
(A) 21,200
(B) 748,200
(C) $1,051,000$
(D) Cannot say

Note live births are given per 1,000 population.

Step 1 - So considering each country we have:
Greece: 28.5 (million) x 13.2 (per 1000). The best way to rationalise the units is to say this is equivalent to $28,500 \times 13.2$ which $=376,200$.

Step 2 - And the same with Australia: 46.5 (million) x 8.0 (per 1000) $=372,000$.

Step 3 - Add these together and the total is 748,200.

Thus the correct answer is (B) 748,200

Population Structure 1985

|  | Population at <br> start of year <br> (millions) | Live Births per <br> 1000 population <br> (Jan-Dec) | Deaths per <br> 1000 <br> population <br> (Jan-Dec) | Percentage of population at <br> start of year aged: <br> under 15 | 60 or over |
| :--- | :---: | :---: | :---: | :---: | :---: |
| UK | 56.6 | 13.3 | 11.8 | 19 | 21 |
| France | 55.2 | 13.9 | 10.0 | 21 | 19 |
| Australia | 46.5 | 8.0 | 6.5 | 19 | 17 |
| Germany | 61.0 | 9.6 | 11.5 | 15 | 20 |
| Greece | 28.5 | 13.2 | 7.8 | 21 | 18 |

Q25 Which country had the highest number of people aged under 15 at the start of 1985?
(A) UK
(B) France
(C) Australia
(D) Germany

Immediately from the possible answers we can neglect Greece in our working.
Step 1 - But we have to work out the number of people under 15 for the other countries, although we don't need to bother with the units since the question asks only for the largest in magnitude.
UK: $56.6 \times 19 \%=10.754$
France: $55.2 \times 21 \%=11.592$
Australia: $46.5 \times 19 \%=8.835$
Germany: $61.0 \times 15 \%=9.15$
Thus the correct answer is (B) France

Population Structure 1985

|  | Population at <br> start of year <br> (millions) | Live Births per <br> 1000 population <br> (Jan-Dec) | Deaths per <br> population <br> (Jan-Dec) | Percentage of population at <br> start of year aged: |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
| UK | 56.6 | 13.3 | 11.8 | 19 | 60 or over |
| France | 55.2 | 13.9 | 10.0 | 21 | 15 |
| Australia | 46.5 | 8.0 | 6.5 | 19 | 17 |
| Germany | 61.0 | 9.6 | 11.5 | 15 | 20 |
| Greece | 28.5 | 13.2 | 7.8 | 21 | 18 |

Q26 What was the net effect on the UK population in 1985 ?
(A) Increase of 84,900
(B) Increase of 85,170
(C) Increase of 542,810
(D) Decrease of 61,400

We have to consider the births and deaths and find the net effect.

Step 1 - Births: 13.3 (per 1000) $\times 56.6$ (million) $=752,780$.
Step 2 - Deaths: 11.8 (per 1000) x 56.6 (million) $=667,880$.

Step 3 - So the net increase is 84,900.

Thus the correct answer is (A) 84,900

Population Structure 1985

|  | Population at <br> start of year <br> (millions) | Live Births per <br> 1000 population <br> (Jan-Dec) | Deaths per <br> 1000 <br> population <br> (Jan-Dec) | Percentage of population at <br> start of year aged: <br> under 15 | 60 or over |
| :--- | :---: | :---: | :---: | :---: | :---: |
| UK | 56.6 | 13.3 | 11.8 | 19 | 21 |
| France | 55.2 | 13.9 | 10.0 | 21 | 19 |
| Australia | 46.5 | 8.0 | 6.5 | 19 | 17 |
| Germany | 61.0 | 9.6 | 11.5 | 15 | 20 |
| Greece | 28.5 | 13.2 | 7.8 | 21 | 18 |

Q27 Approximately what percentage of the German population were aged 60 or over at the end of 1985?
(A) $20 \%$
(B) $21 \%$
(C) $16 \%$
(D) Cannot Say

The end column giving percent over 60 is for the start of the year only. By the end of the year, this will certainly have changed but we are not told what the figure is.

Thus the correct answer is (D) Cannot Say


Q28 For the four shops combined, which of the months shown saw the largest decrease in number of PC sales compared to the previous month?
(A) Feb
(B) Mar
(C) Apr
(D) Cannot say

Step 1 - Sometimes it is possible to rule out some of the possible answers just by looking at the figure, but for this question that is quite difficult. We have to sum for every month:

Jan: $8+20+5+10=43$
Feb: $10+20+4+14=48$
Mar: $13+18+6+18=55$
Apr: $10+16+8+19=53$

April was the only month where sales dropped from levels of the previous month.

Note the question said for "the months shown". This is important because otherwise we wouldn't be able to tell without being given sales figures for May - December.

Thus the correct answer is (C) April


Q29 Approximately what percentage of Regal PC's sales were made in April?
(A) $21 \%$
(B) $22 \%$
(C) $24 \%$
(D) $28 \%$

This is a fairly straightforward percentage question.

Step 1-Total PC sales for Regal in the data given $=8+10+13+10=41$.
Sales in April = 10.

Step 2 - So $10 \div 41=24.4 \%$.

Thus the correct answer is (C) 24 any way or use its contents commercially.


Q30 If the average profit made on each PC sold by Quick PC was $£ 62$, what was the total profit over the four months for Quick PC?
(A) $£ 3,144$
(B) $£ 3,782$
(C) $£ 3,857$
(D) Cannot say

Step 1-Total sales by Quick PC over the four months $=10+14+18+19=61$.

Step 2 - So 61 x $£ 62=£ 3,782$.

Thus the correct answer is (B) $£ 3,782$

## -- End of Test --

For more numerical reasoning tests visit AssessmentDay.co.uk

