



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
General Certificate of Education  
Advanced Subsidiary Level and Advanced Level

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**THINKING SKILLS**

**9694/12**

Paper 1 Problem Solving and Critical Thinking

**May/June 2010**

**1 hour 30 minutes**

Additional Materials:      Multiple Choice Answer Sheet  
   Soft clean eraser  
   Soft pencil (type B or HB is recommended)

\* 5 7 6 8 2 0 7 6 9 1 \*

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**READ THESE INSTRUCTIONS FIRST**

Write your Centre number, candidate number and name on all the work you hand in.

There are **30** questions on this paper. Answer **all** the questions.

For each question there are five possible answers **A, B, C, D** and **E**. Choose the **one** you consider correct and record your choice in pencil on the separate answer sheet.

**Read very carefully the instructions on the answer sheet. Ignore responses numbered 31 – 50 on the answer sheet.**

**INFORMATION FOR CANDIDATES**

Each correct answer will score one mark. A mark will not be deducted for a wrong answer.

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This document consists of **20** printed pages.



- 1 I have to award the prizes to the participants in a recent set of competitions. There are guidelines for the values of the prizes that I am allowed to give for each event shown in the table below:

| <i>Competition</i>     | <i>Minimum prize (£)</i> | <i>Maximum prize (£)</i> |
|------------------------|--------------------------|--------------------------|
| Crossword              | 30                       | 45                       |
| Logic Puzzle           | 10                       | 15                       |
| Wordsearch             | 15                       | 35                       |
| Mental Arithmetic      | 30                       | 35                       |
| General Knowledge Quiz | 10                       | 20                       |
| Chess Tournament       | 30                       | 50                       |

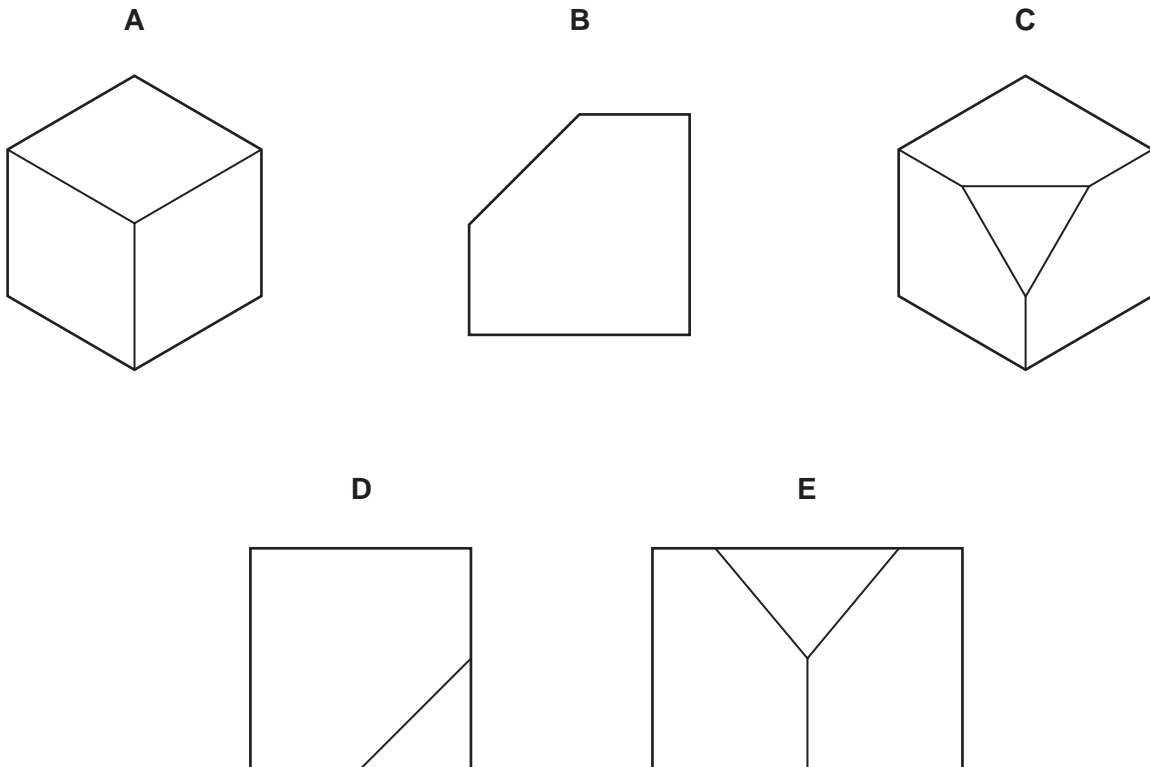
John was the most successful of the participants. He won three competitions: the crossword, logic puzzle and mental arithmetic competitions.

What is the greatest difference that there could be between the value of two of John's individual prizes?

- A £20
- B £25
- C £35
- D £40
- E £45

- 2 One corner is sliced off a solid cube to the midpoints of the three edges which meet at this corner.

Which one of the following could NOT be a view of the resulting solid from some direction?



- 3 Alice and Ben both carry pedometers when walking, to monitor how far they go. One day they go the same route, which Alice completes in 53 minutes, while Ben only takes 45 minutes. Alice's pedometer registers the route length as 5.27 km but Ben's pedometer suggests that it is 5.69 km. Neither knows whether their pedometer is accurate, so Alice takes hers to a reliable expert who tells her that her pedometer has been under-estimating distances travelled by 3.26%. Ben knows that his pedometer may consistently under or over estimate distances but does not get it checked.

Ben wishes to calculate as accurately as possible his average speed on the route he took with Alice, and his average speed on future walks he takes with his own pedometer. Which one of the pieces of information given above is **unnecessary** to complete such calculations?

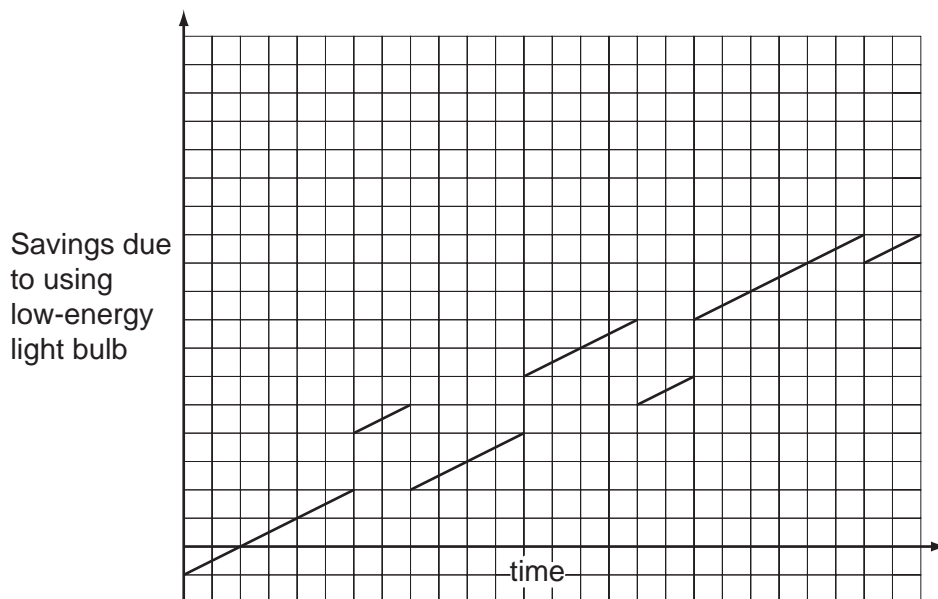
- A Alice completed the route in 53 minutes.
- B Alice's pedometer registered the route as 5.27 km long.
- C Alice's pedometer under-estimates distance by 3.26%.
- D Ben completed the route in 45 minutes.
- E Ben's pedometer registered the route as 5.69 km long.

- 4 All of the coins in my wallet are less than £1 and I have at least 1 of each type (1p, 2p, 5p, 10p, 20p, 50p). I can make any amount of money less than £2 exactly using the coins that I have.

What is the smallest number of coins that I could have?

- A 6  
 B 7  
 C 8  
 D 9  
 E 10
- 5 The Bolandian power company published the following graph to show potential customers the expected cumulative savings over time if just one light fitting uses low-energy light bulbs instead of old-fashioned ones. (In Bolandia a light bulb is also known as a light globe.)

The cost includes both the running cost and the capital cost of replacing bulbs. The jumps on the graph represent the points at which light bulbs are expected to be replaced. The graph starts when a new bulb is fitted.



Obviously a low-energy bulb would use less energy. Which one of the following can NOT be deduced from the graph?

- A The cost of old-style bulbs is expected to change.  
 B Low-energy bulbs cost more than the old style.  
 C Low-energy bulbs last longer than the old style.  
 D After a certain time it will always be cheaper to use low-energy bulbs.  
 E The lifetime of a bulb of a given type is assumed to be fixed.

- 6 Animal extinction is a problem. Many species which existed when our grandparents were children now no longer exist and each year more animals face extinction. Up to now governments have done relatively little to ensure the survival of animals, despite having the financial resources. Although laws are passed to protect certain 'popular' animals, such as lions and elephants, other less popular animals such as frogs and insects are not protected and are disappearing. Much effort to protect animals is made by wildlife charities that rely on public generosity to carry out their very necessary conservation work. It should be governments that take the leading role and actively ensure that the correct funding and methods are in place to stop animals becoming extinct. The charities' role should be one of support to the governments given their lack of finance.

Which one of the following is the **main conclusion** of the above argument?

- A Charities do a lot of work to protect animals so additional government support is unlikely to improve the situation.
  - B Governments should take a more active role in protecting all endangered species.
  - C Charities do not have sufficient finance to protect endangered species.
  - D Support should really be for the more popular types of animals rather than less well known types.
  - E Animal extinction is a problem.
- 7 Hypochondriacs are people with an abnormal anxiety about their health. They think that every symptom of illness, however trivial, is evidence that they have a serious or fatal disease. Over the past few years, a large amount of information relating to disease has appeared on the Internet. The availability of this information, far from being reassuring, is very bad for hypochondriacs, because they are able to spend so much time researching potential illnesses, thus making themselves more and more anxious. Moreover, much of the information is inaccurate. Hypochondriacs should ignore the Internet, and instead seek medical advice and reassurance from their own doctors.

Which one of the following, if true, most **strengthens** the above argument?

- A Hypochondriacs often mistrust what doctors tell them.
- B Doctors are too busy to deal with the problems of hypochondriacs.
- C The incidence of hypochondria has not increased over the past few years.
- D Hypochondriacs can be referred by doctors for effective treatment of anxiety.
- E Hypochondriacs are not the only people who use the Internet for information about illness.

- 8 In the U.K, Remembrance Day commemorates the sacrifices of war veterans and civilians during the major World and other wars. Many people wear an imitation red poppy, the red colour being seen as an appropriate emblem of the bloodshed. But it is disturbing to note that over time a trend has set in which distorts this great tradition: to be seen to wear a poppy in public is treated as being respectable or politically correct. This ought not to be the case. Jon Snow, Channel 4 News presenter, was criticised for not wearing a poppy in November 2006. He is right to resist subscribing to such poppy zeal. He called it “a new brand of poppy fascism” and insisted, “I do not believe in wearing anything which represents any kind of statement.”

Which one of the following statements is the best clarification of the sense in which the expression ‘poppy zeal’ is used to describe the ‘trend’ in the above passage?

- A It shows the dangers of having traditions that commemorate bloodshed.
  - B People are becoming too right wing and / or politically correct.
  - C Those who wear the poppy are becoming intolerant of those who do not.
  - D People are wearing the poppy for reasons other than as an act of remembrance.
  - E People are losing the right to express themselves as they choose to.
- 9 “Members of the jury: the defendant claimed in his statement to the police that he had never been to the victim’s house in his life. However, the police have a number of witnesses who can testify that this claim is incorrect. Since the only plausible explanation for the defendant lying is that he has something to hide, there can be no doubt that he is guilty of the crime.”

A major **flaw** in the above argument is that:

- A It overlooks the principle that a person is innocent until proven guilty.
- B It implies that the jury can decide whether the defendant’s statement was true.
- C It assumes that what he has to hide is his guilt.
- D It bases the argument on a claim that is also the conclusion.
- E It attacks the defendant rather than the defendant’s case.

- 10 There is clear evidence that it is more difficult to score a high examination grade in certain subjects. For example, mathematics and foreign languages are much more difficult than most other subjects, in that a smaller percentage of those who take the examinations gain a high grade. Because schools in Britain want good examination results, they do not encourage students to choose these subjects for their Advanced-level examinations. This is why there is a decline in the numbers studying for university degrees in these subjects. Since the economy of the country is of prime concern, a policy of encouraging those with aptitudes for mathematics and languages should be introduced.

Which one of the following is an **assumption** underlying the reasoning in the above passage?

- A Students should be required to take examinations in mathematics and languages.
- B A successful economy needs people with advanced skills in mathematics and languages.
- C There are many people who have an aptitude for mathematics and foreign languages.
- D Schools in Britain think that mathematics and languages are not important subjects.
- E Students could get better results in mathematics and foreign languages if they worked harder.
- 11 The cost of plastic plant pots used by a garden centre is shown below. Pots can only be purchased in multiples of 50 or 100.

| <i>Diameter in inches</i> | <i>Depth in inches</i> | <i>Per 50</i> | <i>Per 100</i> |
|---------------------------|------------------------|---------------|----------------|
| 2.5                       | 3.0                    | £1.75         | £3.25          |
| 3.0                       | 3.5                    | £2.95         | £5.45          |
| 4.0                       | 5.0                    | £3.25         | £5.95          |
| 5.5                       | 6.5                    | £8.50         | £14.95         |
| 6.0                       | 5.5                    | £9.50         | £17.50         |
| 8.0                       | 7.5                    | £11.00        | £23.85         |
| 10.0                      | 9.5                    | £13.50        | £33.95         |
| 12.0                      | 11.5                   | £16.00        | £54.85         |

What is the minimum cost of pots for 47 plants requiring 3-inch diameter pots and 95 plants requiring 5.5-inch diameter pots?

- A £13.95
- B £17.90
- C £18.20
- D £19.25
- E £20.40

- 12 The United States Postal Service has an online guide to make life easy for people using their postal service. This is an extract.

### First Class Mail

First class mail must be used for handwritten or personal correspondence.

| <i>First Class Mail Rates - single piece rates</i> |                              |
|--|------------------------------|
| First ounce (oz.) Letter size mail *               | \$0.44                       |
| Each additional oz. or fraction                    | \$0.17 per oz. up to 3.5 oz. |
| First ounce Flat size mail **                      | \$0.88                       |
| Each additional oz. or fraction                    | \$0.17 per oz. up to 13 oz.  |
| First ounce Parcel ***                             | \$1.22                       |
| Each additional oz. or fraction                    | \$0.17 per oz. up to 13 oz.  |
| Standard Postcard ****                             | \$0.28                       |

\* **Letters:** (min. dimension: 5" L, 3.5" H, 0.007" W; max. dimension: 11.5" L, 6.125" H, 0.25" W, max. weight 3.5 oz.). Letter size mail over 3.5 ounces, see Flat size prices.

\*\* **Flats:** (min. dimension: 11.5" L, 6.125" H, 0.25" W; max. dimension: 15" L, 12" H, 0.75" W).

\*\*\* **Parcels:** Anything larger.

\*\*\*\* **Postcards:** (min. dimension: 5" L, 3.5" H, 0.007" W; max. dimension: 6" L, 4.25" H, 0.016" W).

I want to send two items through the post using first class mail.

One fits into an envelope 20" L, 10" H and 4" W and weighs 10 oz.

The other fits into an envelope 8" L, 5" H and 0.20" W and weighs 2.5 oz.

How much are the items going to cost me to send?

- A \$1.49
- B \$2.21
- C \$2.41
- D \$3.36
- E \$3.53



- 13 I've bought a present for one of my friends and want to get it wrapped. Since the present is some extra pieces for one of his favourite games I need to put them in a box. I don't mind if I need to use two or three boxes, but I don't want there to be more than three boxes in total. The shape of the box doesn't matter. I need there to be a total volume of at least  $95 \text{ cm}^3$ . The prices for the boxes are shown in the table.

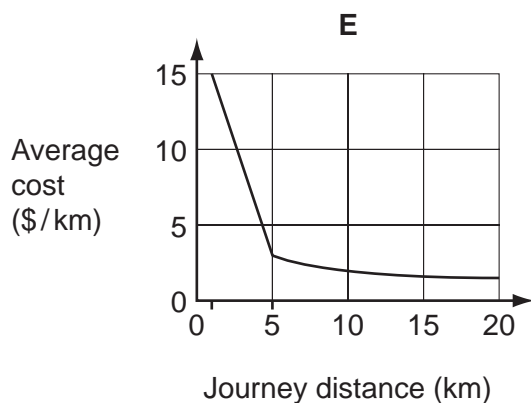
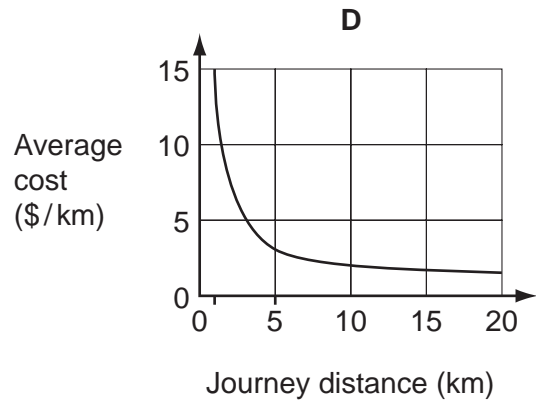
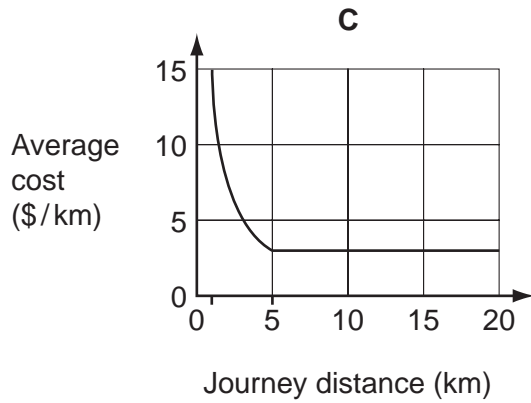
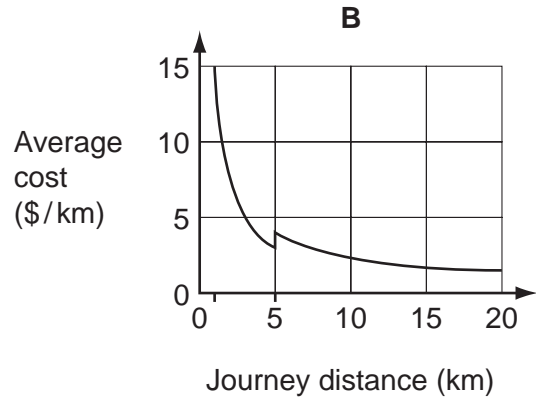
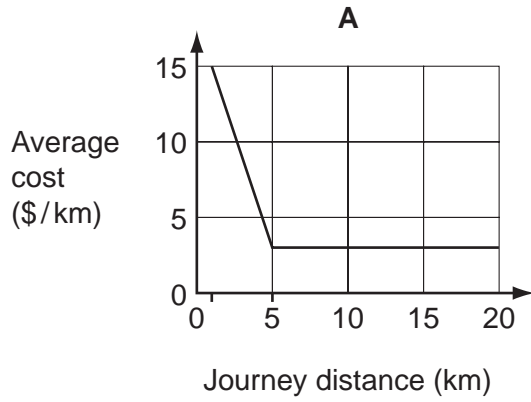
| <i>Length (cm)</i> | <i>Width (cm)</i> | <i>Depth (cm)</i> | <i>Price (cents)</i> |
|--------------------|-------------------|-------------------|----------------------|
| 3                  | 2                 | 2                 | 9                    |
| 5                  | 3                 | 3                 | 25                   |
| 6                  | 5                 | 2                 | 35                   |

What is the lowest total cost that I will need to pay to buy the boxes?

- A 59¢
- B 60¢
- C 62¢
- D 70¢
- E 72¢

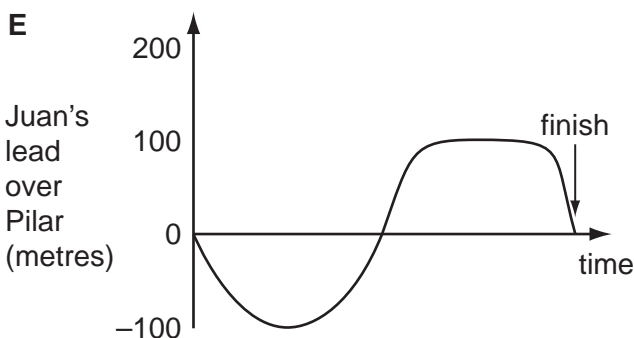
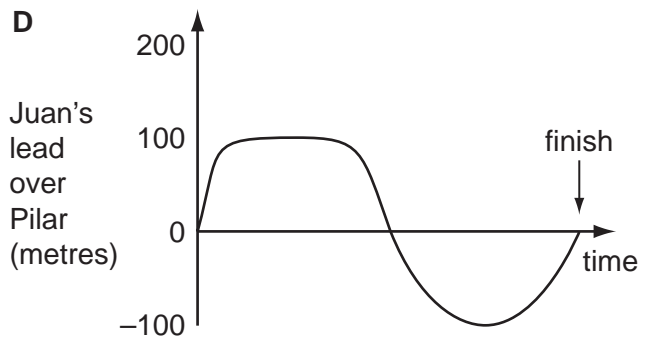
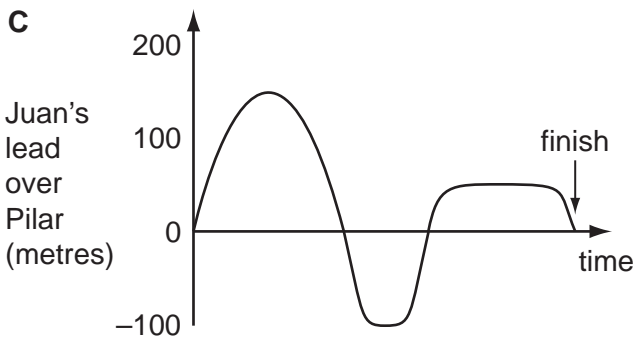
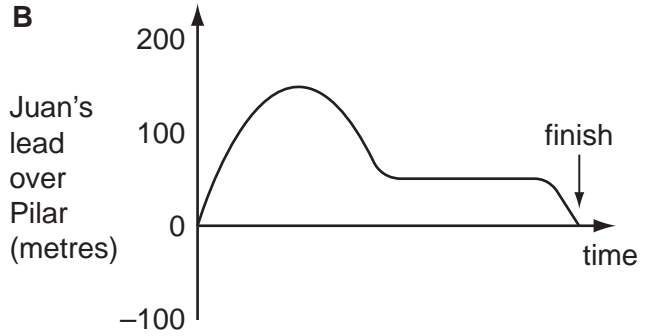
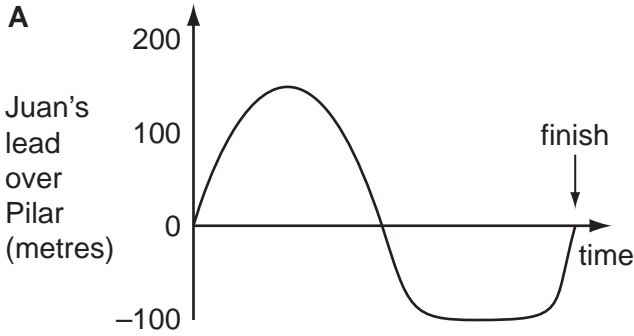
- 14 The taxi company Ryder's Rides charges a flat rate of \$15 for any journey up to 5 kilometres. Any extra distance is charged at a rate of 1 cent for every 10 metres.

Which of the following graphs shows how the average cost per kilometre varies with the total journey distance in a Ryder's Rides taxi?



15 Juan and Pilar have a cycle race. The course consists of a flat stretch followed by an uphill, then a downhill and finally another flat road. Juan goes faster than Pilar on the flat but Pilar goes uphill quicker than Juan. Downhill they go at approximately the same speed as each other. The result of the race is that they cross the finishing line at exactly the same time.

Which one of the following graphs best represents Juan's lead over Pilar from the start of the race to the finish?



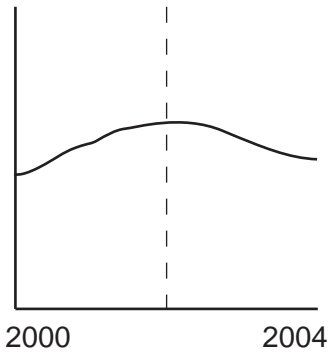
- 16 Krishan Kumar has had an accident in his car. Fortunately, he was not injured but his car was damaged beyond repair. His car insurance company are disputing his account of the accident. Kumar maintains he was travelling at 40 km/h in an area where the speed limit was 60 km/h. He remembers braking and swerving but remembers nothing of the accident until he became conscious and aware that the car had ploughed into a lamppost. The damage is however far in excess of what would be expected if a car of that type had hit such an object after braking having been travelling at that speed. It has advanced collision damage prevention technology such as a reinforced radiator grill. A retired police officer who had worked in the field of car accident investigation witnessed the accident and confirmed that Kumar was travelling at about 40 km/h. However, the insurance company are still sticking to their position that the damage is not consistent with the facts as presented by Kumar, and that not all the relevant evidence has been given to them. The car makers have confirmed that the car had suffered damage in excess of what they would expect if it had hit a lamppost in the circumstances described by Kumar.

Which one of the following offers a convincing **explanation** to support the insurance company's position?

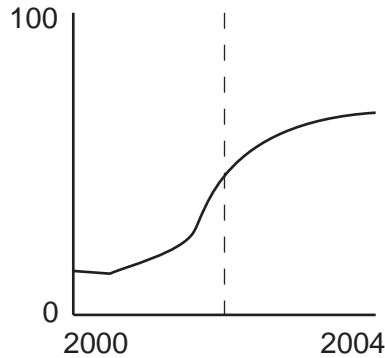
- A Kumar swerved to avoid a young child who had run into the road.
- B Kumar was a young and inexperienced driver.
- C The car had had a previous collision before it was owned by Kumar.
- D The insurance company has a reputation for being reluctant to pay claims.
- E The road was wet and greasy at the time of the accident.

- 17 The government of Bolandia is conducting a five year campaign to encourage voluntary restrictions on smoking in public places, whilst considering whether or not to impose an outright ban. After four years the following patterns were evident:

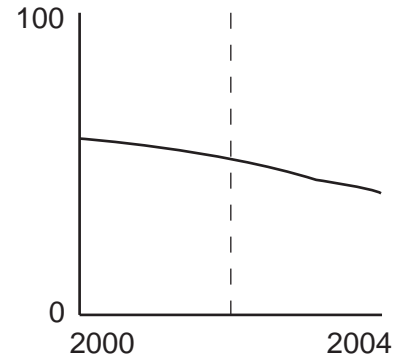
Expenditure on government anti-smoking campaigns



% of public premises prohibiting smoking



% of adult population who smoke



Which one of the following can reliably be concluded?

- A** From the evidence available the government should continue with its campaign of persuasion rather than compulsion.
- B** The reduction of government spending after its peak in 2002 has resulted in a slow down in the number of new no-smoking premises.
- C** As one might expect, many people have given up smoking because there are fewer places where they can smoke.
- D** The anti-smoking campaign has been accompanied by a steady decline in the proportion of Bolandians who smoke.
- E** An outright ban on smoking in public places would accelerate the decline in smoking.
- 18 One of the best features of the Internet is said to be that it is a vast store of knowledge. Yet, because there is so much of it, accessing the particular piece of information that you want is at least as time consuming as visiting a library and searching for it there. Also, there is no guarantee that the information itself is reliable, because anyone can put any information on the Internet without the information being scrutinised for accuracy. Hence, the books found in libraries are a far better resource for those who wish to increase their knowledge.

Which one of the following is an **assumption** underlying the above argument?

- A** Most of the information on the Internet is inaccurate.
- B** Visiting libraries is less convenient than using the Internet.
- C** The content of books is likely to be more reliable than that of the Internet.
- D** Many contributors to the Internet aim to mislead Internet users.
- E** Much of the information on the Internet is not useful.

- 19 Bright outdoor lighting at petrol stations and supermarkets does not make customers feel safer from criminals such as muggers and car thieves. This is because the lights are often so bright that they dazzle, making it harder for people to see when they go back into less well-lit areas, and creating dark shadows where muggers could hide. Humans can see quite well at night without bright artificial light, so this bright lighting serves no useful purpose, in addition to making people feel less safe. It should therefore be discouraged.

(Source: 'Why light at night may be a menace', The Independent, Monday, 17 February 2003)

Which one of the following, if true, would most **weaken** the above argument?

- A Bright lighting can have adverse effects on wildlife.
  - B Fewer crimes are committed in brightly lit areas.
  - C Mugging is the most common crime in many cities.
  - D Most people take precautions against crime, wherever they are.
  - E Surveys show that people do not think that the most brightly lit places are the safest.
- 20 As the wealth of a country grows, the number of people wanting to get a university education may increase, because people think that with a higher academic qualification they will get a better job. Governments which want to be fair to all respond by allowing universities to accept more and more students. But this policy is not sensible in that it does not benefit all individuals. Not all of those who want to go to university can benefit from it because people's talents differ. We can't all be great musicians or great footballers. Similarly, a university education does not suit everyone.

Which one of the following best expresses the **conclusion** of the above argument?

- A People have differing talents and aptitudes.
- B Some people who go to university do not benefit from it.
- C It is unfair to exclude some people from university education.
- D It is not true that higher academic qualifications lead to better jobs.
- E It is not sensible to keep increasing the number of university students.

- 21 In order to enter and leave harbour safely, a large ship needs to leave its own harbour, Smallport, on a high tide of at least 3 metres and enter its destination harbour, Rivermouth, on a high tide of at least 4 metres. The journey takes 72 hours and cannot start until January 1st. The owner of the ship does not want to pay his crew any more wages than necessary for the time they are on board the vessel.

The following are the tide charts for the two ports where the tides change rapidly due to local conditions.

| <i>Date</i>  | <i>Smallport High Tide</i> | <i>Rivermouth High Tide</i> |
|--------------|----------------------------|-----------------------------|
| January 1st  | 2 metres                   | 5 metres                    |
| January 2nd  | 2.5 metres                 | 4.5 metres                  |
| January 3rd  | 3.0 metres                 | 4.0 metres                  |
| January 4th  | 3.0 metres                 | 3.5 metres                  |
| January 5th  | 2.5 metres                 | 3.0 metres                  |
| January 6th  | 2.5 metres                 | 2.5 metres                  |
| January 7th  | 2 metres                   | 3.0 metres                  |
| January 8th  | 2.5 metres                 | 3.5 metres                  |
| January 9th  | 3.0 metres                 | 4.0 metres                  |
| January 10th | 3.5 metres                 | 4.5 metres                  |
| January 11th | 4 metres                   | 4.0 metres                  |
| January 12th | 4.5 metres                 | 3.5 metres                  |
| January 13th | 4.0 metres                 | 3.0 metres                  |
| January 14th | 3.5 metres                 | 3.5 metres                  |
| January 15th | 3.0 metres                 | 4.0 metres                  |
| January 16th | 2.5 metres                 | 4.5 metres                  |

What is the earliest date that the vessel can arrive at Rivermouth without having to wait out for extra days at sea?

- A January 3rd
- B January 9th
- C January 10th
- D January 11th
- E January 15th

- 22** I live in a block of flats which is served by a lift which always goes from bottom to top and back, picking up anyone who wishes to go in the direction it is travelling. If I have pressed the 'down' button and the lift is going up, it does not stop for me, but goes to the top and stops for me on the way down.

I notice that, if I have pressed the button on my floor to go up, more often than not the lift goes past my floor going down before it comes back up to collect me.

Which one of the following would explain this?

- A** The lift travels down faster than it travels up.
  - B** It waits longer at the bottom floor than at intermediate floors.
  - C** People mainly travel between their own floor and the bottom.
  - D** I live near the top of the block of flats.
  - E** I live near the bottom of the block of flats.
- 23** Some time ago I visited Tintaria. The unit of currency there is the crome. There are five types of coin, all different colours, but none of them has a value marked on it. The colours are blue, green, orange, red and yellow.

On my first day I bought souvenirs that cost a total of 81 cromes. Having no idea of the coin values, I held out a handful. The shop assistant told me I could give her a blue, an orange and five yellows, or a green, three reds and four yellows. Alternatively, if I gave her two blues and two oranges, she would give me a red as change.

Shortly afterwards I was told the value of the yellow coin.

Knowledge of the value of the yellow coin enabled me to deduce the value of how many of the other types of coin?

- A** 0
- B** 1
- C** 2
- D** 3
- E** 4



- 24** Although a mixture of letters and numbers made telephone 'numbers' easier to remember, because there was no consistency between the way letters were allocated to numbers on telephone dials (or pads), when international direct dialling became available there was international agreement to stop using letters and just use numbers. The US continued to use letters, and many years later the use of letters became popular for sending text messages. Some of the more common schemes are shown in the following table:

| <i>Common phone keypads</i> | 1  | 2   | 3   | 4   | 5   | 6   | 7    | 8   | 9    | 0   |
|-----------------------------|----|-----|-----|-----|-----|-----|------|-----|------|-----|
| International standard      | –  | ABC | DEF | GHI | JKL | MNO | PQRS | TUV | WXYZ | –   |
| North American classic      | –  | ABC | DEF | GHI | JKL | MN  | PRS  | TUV | WXY  | 0   |
| Australian classic          | QZ | ABC | DEF | GHI | JKL | MNO | PRS  | TUV | WXY  | –   |
| UK classic                  | –  | ABC | DEF | GHI | JKL | MN  | PRS  | TUV | WXY  | OQ  |
| Mobile 1                    | –  | ABC | DEF | GHI | JKL | MN  | PRS  | TUV | WXY  | OQZ |

CHE could for example be the letters for 243 in each scheme, but so could AID.

I want a three-digit number with no digit used more than once, which could be written in letters in the largest number of different ways. Which scheme offers this?

- A** International
  - B** North American
  - C** Australian
  - D** UK
  - E** Mobile
- 25** A museum education officer prepares for the day by setting out one pencil per child and one clipboard between two children. No child ever works alone. He has 50 pencils available and a maximum of 10 clipboards. Each small group is usually 20 strong and always stays with him for 30 minutes. The day starts at 10 30 and finishes at 14 30. An hour is spent eating lunch. Last Wednesday groups of different sizes attended. In two sessions he had exactly the right number of clipboards. In one session he had two spare clipboards, and in the remaining three sessions there were five occasions when there were not enough clipboards and three children had to share.

How many children attended on Wednesday?

- A** 119
- B** 121
- C** 123
- D** 131
- E** 133

- 26 Bad breath can be caused by bacteria in the mouth, the smell coming from the compounds that they produce. Chewing cinnamon-flavoured gum can reduce the problem. In a study involving three different types of gum, it was found that gum flavoured with cinnamon was the most effective in reducing the amount of bacteria in the mouth (by more than 50%). A second gum which contained natural flavours (not including cinnamon) was less effective but, because it also contained a plant extract that suppressed bacteria, it eliminated about 40% of the bacteria. The third gum, with no flavouring, produced no significant reduction in bacteria. Thus people who use chewing gum should use that flavoured with cinnamon (or at least one with a plant extract that has a similar effect).

Which one of the following is an underlying **assumption** of the above argument?

- A Bacteria in the mouth cause no greater problem than bad breath.
  - B Chewing gum is either unflavoured or has natural flavours.
  - C People use chewing gum in order to deal with the problem of bad breath.
  - D Bad breath has no other cause than bacteria in the mouth.
  - E Cinnamon-flavoured chewing gum is the best method of treating bad breath.
- 27 There is an increasing recognition that lifestyle is as important a factor in maintaining health as good medical facilities and health care. Regular exercise is an important aspect of a healthy lifestyle. However, it must be 'aerobic', i.e. sufficiently active to raise the heart beat and cause some slight breathlessness. Walking briskly five times a week for thirty minutes is often recommended as a good way of getting such exercise. For many people this might be achievable by walking to work rather than taking the car. Whilst there are other ways of getting regular aerobic exercise, anybody interested in ensuring that they are maintaining a healthy level of physical activity should include walking in their fitness programme.

A 'counter-assertion' is a point that is raised in order to be dismissed.

Which one of the following is an expression of a **counter assertion** in the above argument?

- A Exercise which is not aerobic is sufficient to maintain health.
- B Good medical facilities and health care are important in maintaining health.
- C People are getting sufficient aerobic exercise.
- D Taking the car is a good way of getting to work.
- E Walking is not the only way of getting aerobic exercise.

- 28 In Britain during the 1970s there was a strike by doctors. It was predicted that because doctors were not attending to patients, more people would die than would have died if the doctors had not been on strike. But in fact the death rate fell during the strike. We can conclude that treatment by a doctor, far from curing seriously ill people, actually hastens their death.

Which one of the following states a **flaw** in the above argument?

- A It implies that doctors should not be allowed to strike.
  - B It presents evidence which contradicts its conclusion.
  - C It ignores other possible causes of the fall in death rates.
  - D It assumes a correlation between serious illness and death rates.
  - E It assumes that the prediction about death rates was misguided.
- 29 In an argument there must be a conclusion, and one or more reasons to support the conclusion.

From the above definition, which one of the following is most obviously an **argument**?

- A The Augrabies flat lizard chooses its fighting opponents by their scales not their size. The South African lizards flash their reflective throats at each other. Studies show that the lizard with the most reflective scales is likely to win.
- B A snake with two heads has been taught to eat without fighting itself. Normally, two-headed snakes die because the heads fight over the food. This snake's heads have learned to take it in turns.
- C Loud noise can make hair cells in the ear divide and form tumours. These tumours can damage hearing. It is important for young people to think about the noise from their stereos.
- D One species of ant has teacher ants, which teach a pupil routes from the nest to food sources. The teacher does not move while the pupil stops to learn the route. The pupil taps the teacher when it is ready to move.
- E Pickled, fermented foods such as German Sauerkraut or Korean kimchi contain bacteria which are thought to combat flu viruses.

- 30 Although some people think that the microwave radiation emitted by mobile phones may damage the brains of users, no conclusive evidence has been found of adverse effects on health. 'Hands-free' kits are claimed to make the use of mobile phones safe because the user does not need to hold the phone close to the head. However, it has been found that the level of radiation reaching the brain when using these kits varies, between a large reduction and no reduction at all, depending upon where the phone and the kit are placed. There is no way that consumers can work out the best position of the kit and the phone in order to reduce radiation.

Which one of the following can be drawn as a **conclusion** from the above passage?

- A The use of mobile phones is unlikely to have adverse effects on health.
- B Consumers cannot be certain that it will be safer to use a 'hands-free' kit with their mobile phone.
- C The use of 'hands-free' kits sometimes increases the amount of radiation from a mobile phone.
- D Consumers will be safer if they do not use a 'hands-free' kit with their mobile phone.
- E The correct positioning of a 'hands-free' kit prevents any microwave radiation from reaching the brain of a mobile phone user.

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Question 19 © *Why light at night may be a menace*; The Independent; Monday 17 February 2003.

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