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

THINKING SKILLS   **9694/11**

Paper 1 Multiple Choice   **October/November 2009**

1 hour 30 minutes

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

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.

This document consists of **18** printed pages and **2** blank pages.

UNIVERSITY *of* CAMBRIDGE
International Examinations

[Turn over

1 A painter is given the task of painting numbers on the doors in a street. There are one hundred houses.

How many times does he need to paint the number 7?

A 10

B 11

C 19

D 20

E 21

2 The table below shows the exchange rate for the Bol (B) and Uno (U) against the Dollar ($) from January to December.
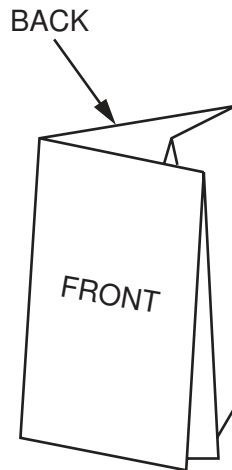
	January	March	June	September	December
B per $	1.8	2.1	2	1.5	1.8
U per $	1.2	1	1.5	2	1.2

$1000 is invested in the currency market over this one year period, exchanging between the three currencies. Money can be changed into Bols or Unos in January, March, June, September and December.

Ignoring commission, what is the maximum amount of Dollars that could have been generated by December?

A $2000

B $2222

C $2333

D $2800

E $3150

3 A brochure is to be made by folding a sheet of A4 size paper as shown below. The paper is printed on both sides before folding.
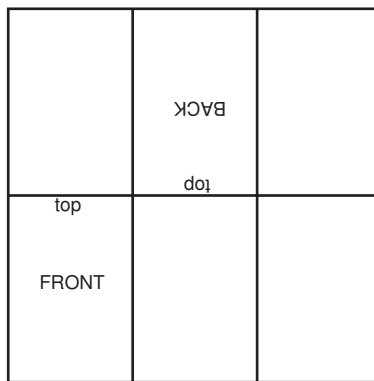
BACK

FRONT

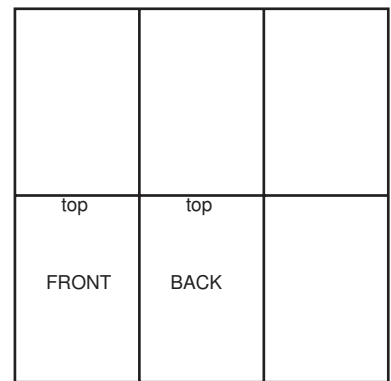Which one of the layouts below shows the correct positions of the front and back page?

A

		BACK top
top FRONT		

B

	BACK top	
top FRONT		

C

top FRONT	top BACK	

D

	top BACK	top FRONT

E

	BACK top	
		top FRONT

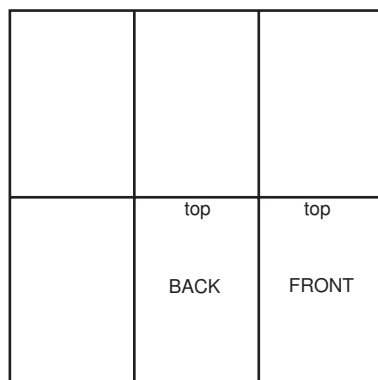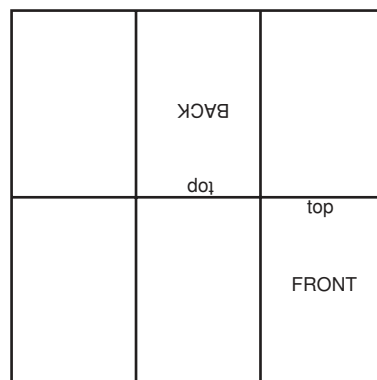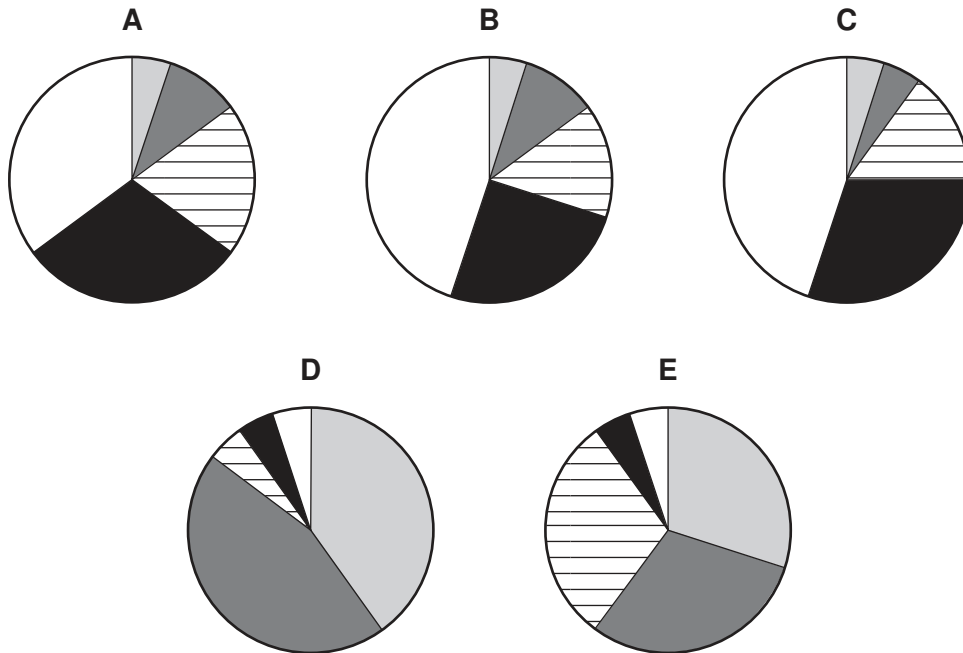**4**   In a general election in Eastavia, the percentage of the vote gained by each party was as follows:

Alliance   35%
Popular Front   30%
Anti-Reform Party   20%
Progressives   10%
United Reformers   5%

Which one of the following pie charts (suitably labelled) could represent this data?

5   A school teacher has no exercise books left, having just issued every student with one. The books contain 72 pages and are kept in the classroom so that they do not get lost.

The teacher sees his lower school students four lessons a week and the hardest working students use at most 2 pages in each class.

Upper school students attend classes three times a week and the most any student ever fills is 3 pages in each class. Books take two weeks to receive from ordering.

What is the longest time the teacher can wait before ordering fresh books?

A   4 weeks

B   5 weeks

C   6 weeks

D   7 weeks

E   8 weeks

6 Advice on the way to put on a seatbelt is given at the start of every commercial flight. This made sense in the 1960s when seatbelts in cars were unknown, but now the explanation merely gives the message that all the advice being given is so obvious that it can be ignored. _____ is the explanation of how to put on the lifejacket for a flight over the desert, even if every aircraft is equipped with a different type of jacket.

Which one of the following **would make logical sense** in the above?

A And for children there

B Equally unconvincing

C Much more important

D Next

E Sometimes there

7 In an argument there must be a conclusion, and one or more reasons given to support the conclusion.

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

A There is no good reason to put people on the moon. Plans to send a manned mission to Mars will cost billions at the expense of people on Earth. Plans to send people back into space have been criticised as a rerun of the Apollo space programme.

B Providing contraception for 4000 female elephants is not practical. Transporting elephants to Mozambique would be prohibitively expensive. South Africa will have to control the rapid growth of its elephant population by culling.

C Beauty queens have gathered at a conference in Thailand to tell girls not to risk their health by obsessive dieting. They will tell them to leave calcium rich drinks out of their diet and to exercise moderately but not excessively. These beauty queens may not practise what they preach.

D The universe is expanding, pulling galaxies apart as the space between them stretches. Atoms are not stretched by the expansion of the universe. Atoms are bound together by a strong electromagnetic force whereas clusters of galaxies are loosely bound by gravity.

E Chaotic systems create patterns known as fractals. These are structures in which the overall shape is identical at every scale, like a set of Russian dolls. Scientists now claim that brains are made up of fractals.

8   Health experts claim that doctors are prescribing far too many anti-depressants. People with only minor symptoms of depression are often given drugs when some form of counselling would be more appropriate and effective. However, counselling is mainly offered only in special centralised departments, and the current availability of such counselling services is very limited, with anything up to a six month waiting list for treatment. Counselling services should also be made available in doctors' surgeries, because our family doctors must be able to offer the best treatments to patients with symptoms of depression.

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

A   Doctors should provide counselling services at their surgeries.

B   Counselling should not be offered in special centralised departments.

C   Prescribing fewer drugs should be a goal of treatments for depression.

D   Family doctors should be able to offer patients the best treatments for depression.

E   Counselling is the most appropriate method of treatment for minor symptoms of depression.

9   Everyone knows that cars contribute to global warming, but less publicity is given to the fact that, worldwide, one in three premature deaths is now caused by fatal road accidents involving cars. It follows that ensuring that cars are safer by insisting that all new cars meet the most stringent safety standards is an urgent priority. Although manufacturers are beginning to introduce safety features in response to consumer pressure, progress has been slow. We need to send car manufacturers clear messages, and make the highest safety standards a legal requirement.

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

A   Adoption of the most stringent safety standards would reduce the number of road accidents.

B   Making cars safer is likely to make drivers more cautious.

C   The majority of fatal accidents are caused by poor driving skills.

D   Many fatal road accidents involve cars that do not meet the highest safety standards.

E   Adopting the highest safety standards would affect sales of cars by making them more expensive.

10 In petrol stations, you always see the instruction to switch off mobile phones. The thinking behind this instruction is that the phone's electrical circuitry could cause petrol vapour to ignite. This instruction should be scrapped. It is difficult to know how there could be any risks from a phone's electrical circuitry. By contrast, it is not difficult to know the risks from a car engine. Unlike a phone battery, a car's is very large and is connected to all sorts of things that could generate sparks. Furthermore, petrol stations should be more worried about other sources of electricity than phone batteries. Both frizzy hair and nylon clothes generate static electricity. In the US there have been more than 200 cases of fires at petrol stations caused by static electricity.

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

A Mobile phone batteries used to be much bigger than those used today.

B Batteries are used in many goods (laptops and cameras, for example) that people carry in cars.

C High levels of petrol vapour, often found in petrol stations, would cause an explosion if ignited.

D No case of a mobile phone ever causing a fire at a petrol station has been recorded.

E People sometimes need to use their mobile phones in petrol stations in order to avoid using them whilst driving.

11 A system of lifts takes people from the ground-floor of a sky-scraper to a top-floor restaurant. They can each carry a maximum of five people. A lift leaves the ground floor once a minute on the minute (i.e. one leaves at 12.00 exactly and then at 12.01 exactly and so forth). The following table shows when the diners arrived at the lifts.

Time	Number
12.00 – 12.01	10
12.01 – 12.02	3
12.02 – 12.03	2
12.03 – 12.04	1
12.04 – 12.05	8
12.05 – 12.06	11
12.06 – 12.07	5
12.07 – 12.08	9
12.08 – 12.09	3

Given that this represents the entire group of people eating at the restaurant, when did the last diner leave the ground floor in a lift?

A 12.09

B 12.10

C 12.11

D 12.12

E 12.13

12 The staff and students at Denton College have collected 40 boxes of books to give to the charity Books for Africa. Mr Spencer has to transport all the boxes himself 50 miles to the charity's distribution depot. He wants to spend as little money on petrol as possible to do this and has three vehicles he can use.

He can get 8 boxes in his own car and the return journey will cost $14.
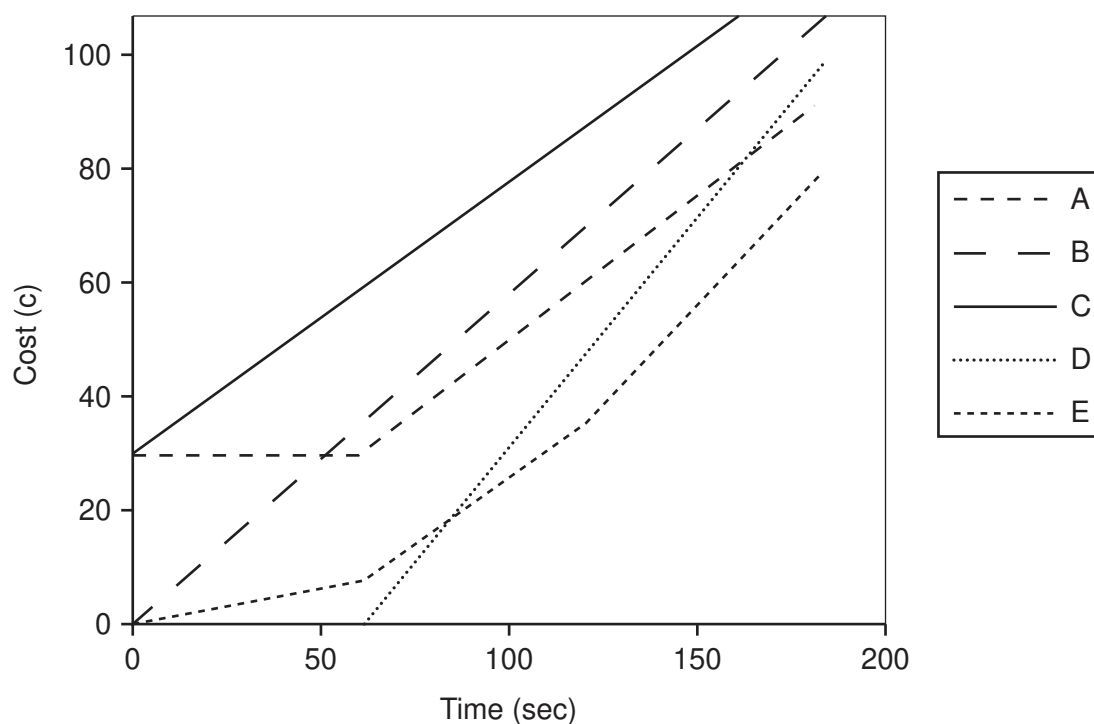He can get 15 boxes in the school mini-bus and the return journey will cost $23.
He can get 18 boxes in his friend's van and the return journey will cost $28.

What is the lowest cost of transporting the 40 boxes, using any combination of these vehicles?

A $56

B $60

C $65

D $69

E $70

13 A mobile telephone company charges for its calls at 30c for the first minute then 0.5c per second.

Which line in the graph below represents this charge scheme?

14 160 boxes of copier paper have been delivered to the office block in which I work. I have been instructed to move them all from the ground floor to the storeroom on the 9th floor.

Each box weighs 12.5 kilograms, and I weigh 83 kilograms. The lift has a load limit of 400 kilograms.

There is nobody available to help me, and I do not intend to use the stairs at all.

Assuming that I have the lift to myself throughout, how many trips up to the 9th floor will I have to make?

A 5

B 6

C 7

D 8

E 9

15 I want to give a gift to each person who is coming to my party. I can make the gifts from three types of component which I can order from a local shop. Each one requires 1 base, 1 centre piece and 2 handles. I have 53 people coming to the party, but I ordered enough materials to make 60 gifts. Unfortunately the shop got the numbers of centre pieces and handles the wrong way round. When I realised, I was only able to buy 16 extra handles at the shop in time for the party.

How many guests would **not** be able to have a gift?

A 7

B 8

C 15

D 22

E 23

16 The famous Nobel Prizes, awarded since 1901, remain the measure of scientific achievement. Of the 500 awards for science, 74 (15 per cent) have gone to the UK. Given the population size, it is an impressive achievement. But since 1970 the percentage has declined. During the same time, that of the US has increased (the US has won about 60 per cent of all scientific awards). Today it spends over twice as much of its national wealth on universities as the UK does. Scientific discovery is heavily reliant on university spending, so the UK's decline shows that it needs to spend more. Increasing tuition fees is the best way to raise more money for the universities. This has to be done. Excellence unfortunately does not come cheaply.

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

A Scientific excellence is always going to be expensive.

B The tuition fees charged by universities must be raised.

C The UK's spending on universities has declined.

D Increasing university tuition fees would increase the UK's share of Nobel Prizes.

E Reduced spending on universities has caused the UK's decline in its percentage of Nobel Prizes.

17 The first women's 100 metres Olympic final in 1928 had a winning time that was 1.4 seconds slower than the men's. In 1952 the difference was 1.1 seconds. In the Olympics from 1988 to 2000, the difference was less than a second. As a result, there are sports scientists who argue that, given the continuation of this trend, by the 2156 Olympics women will be faster sprinters than men. But this prediction fails to take into account men's greater muscle mass and hormonal advantages. In addition, the 2004 Olympics produced a difference of 1.08 seconds between the fastest man and woman. So the prediction of a continuing trend is shown to be wrong. Women will not overtake men in the 100 metres event.

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

A Women do not compete with men in any of the Olympic athletic events.

B Some women are already faster sprinters than many men.

C Not all male athletes are going to stop taking performance-enhancing drugs in the future.

D The prediction for women to overtake men in the 100 metres event is as early as 2064 and as late as 2788.

E Many leading female athletes did not compete in the 2004 Olympics women's 100 metres as a result of drug-taking allegations.

18 Ten per cent of adults say they are happier spending time with their computer than with their partner or friends. Perhaps this statistic should not surprise us. We live in a society in which we spend little of our time in community activities. We do not shop at the local shop but drive to supermarkets; we play video games with imaginary characters for company. But there is a lot of evidence that people who maintain social relationships with many people are happier, live longer, and get over depression more quickly. Thus, computers make us miserable, unhealthy, and shorten our lives. People should switch them off and get out more.

Which one of the following is the best statement of the **flaw** in the above argument?

A The author fails to explain the causal link between social relationships, on the one hand, and happiness and health on the other.

B The author uses only two examples to support their claim that we are spending too little time in social activities.

C The author fails to consider that some people's social relationships can be unfulfilling.

D The author draws a conclusion about computers from evidence that fails to identify them as a problem.

E The author uses the term 'happier' and 'unhealthy' without explaining how they are to be defined.

19 Each day we have to make at least 200 decisions. These can be small ones such as 'should I have a burger for lunch?' or big ones such as 'which university should I go to?' Choice is normally seen as a good thing (by increasing our happiness). Supermarkets and department stores are therefore better than the local shop. Furthermore, there is a link between prosperity and choice: the more money we have, the more choices we have. However, there is evidence that if we have too much choice, we cannot choose at all. If we have to consider too many versions of the same thing, we become anxious and less contented. 'Will I choose the right one? Might I miss something I haven't thought about?'

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

   A   Our happiness can decline as our prosperity increases.

   B   Having the ability to make choices is not a good thing.

   C   The more happy we are, the more choices we need to make.

   D   Having to make decisions each day makes us anxious.

   E   Poor people will have lower levels of anxiety than those who are well-off.

20 Experiments have been carried out involving the addition of flavourings to cigarettes. Such flavourings include chocolate, tea, wine, syrup and cherry juice. The idea is that such additives can change the taste of cigarettes in ways that consumers will appreciate. Of course, it should not be forgotten that some flavourings such as liquorice and cocoa butter are already used. However, with a noticeable recent increase in the proportion of young people who smoke, anything that further increases this proportion is to be regretted. These experiments should be condemned.
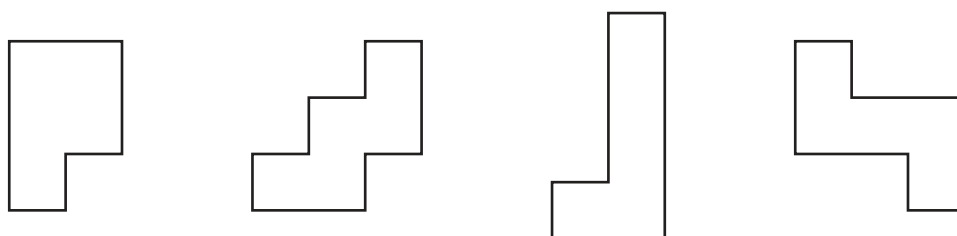
Which one of the following is an underlying **assumption** of the above argument?

   A   Chocolate, tea, wine, syrup and cherry juice will all be used as additives in cigarettes.

   B   The proportion of young people who smoke will continue to rise.

   C   Cigarette smokers prefer brands that have flavourings such as liquorice and cocoa butter.

   D   Cigarette companies are experimenting with flavourings in order to increase the number of young people who smoke.

   E   Young people are more likely to smoke if cigarettes have flavourings such as chocolate added to them.
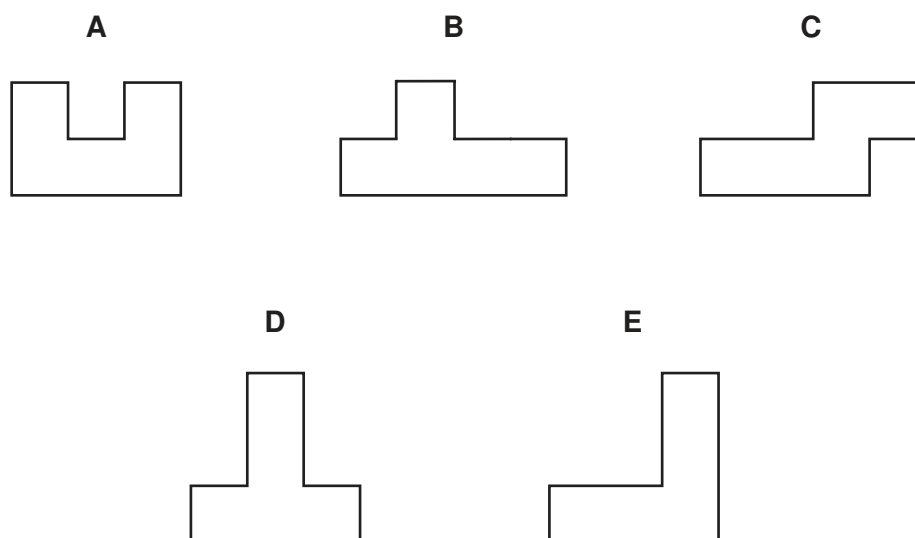
21 My daughter has a puzzle that consists of five pieces, each shaped differently but all with the same area that can be fitted together to create a square.

Unfortunately she has lost one of the pieces.

These are the pieces that she still has:

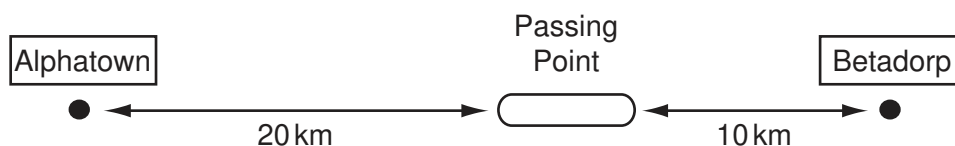What is the shape of the missing piece? (Pieces may be rotated, but not turned over).

A	B	C

D	E

22 There were 60 delegates waiting for taxis to the railway station after a conference and there was an hour until the last train left. Unfortunately, there were only four taxis operating that day and ready at the conference centre, all of different sizes. One taxi could take three people, one could take four, one could take five and the last one could take six people. The round trip from conference centre to the station and back takes twenty-five minutes. The journey takes the same time in both directions.

How many delegates missed their train?

A 6

B 18

C 24

D 36

E 42

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23

Alphatown — 20 km — Passing Point — 10 km — Betadorp

Two trains, running in opposite directions along a single line track between Alphatown and Betadorp, have to pass one another at the Passing Point. This Passing Point is no longer than necessary for the trains to pass.

The distances of the Passing Point from the towns are shown on the diagram. Train X leaves Alphatown 20 minutes before a second train Y leaves Betadorp. Train Y travels at an average speed of 60 kilometres per hour (km/h).

What average speed will train X have to travel at to ensure that neither train has to wait at the Passing Point?

A 24 km/h

B 30 km/h

C 40 km/h

D 48 km/h

E 60 km/h

24 Romeo and Juliet both sat the same 25-question multiple choice English Literature examination paper. Immediately afterwards they discussed the paper and came to the conclusion that they both had the same number of correct answers. However, Romeo had run out of time and not managed to attempt the last 3 questions, whereas Juliet had answered all 25.

When the results were announced Juliet's mark was 31 out of 50 but Romeo's was 34.

Assuming that they really did answer the same number of questions correctly, which one of the following could **not** explain the difference in their marks?

A Correct answers were awarded 2 marks each, but 1 mark was deducted for each incorrect answer.

B Correct answers were awarded 2 marks each, but 1 mark was deducted for each incorrect answer and each unattempted question.

C Some correct answers were awarded 1 mark, some were awarded 2 marks and some were awarded 3 marks, with no penalties for incorrect answers or unattempted questions.

D Some correct answers were awarded 1 mark, some were awarded 2 marks and some were awarded 3 marks, but 1 mark was deducted for each incorrect answer.

E Some correct answers were awarded 1 mark, some were awarded 2 marks and some were awarded 3 marks, but 1 mark was deducted for each incorrect answer and each unattempted question.

25 Two friends encode the text messages they send to each other on their mobile phones so that no one else can read them. The encoding system, used for each letter in turn of the message, is as follows:

1. Replace each letter by its equivalent with the alphabet reversed; so A becomes Z, B becomes Y, C becomes X, etc.

2. Replace each letter resulting from operation 1 by a two digit number according to its place in the alphabet; so A becomes 01, B becomes 02, etc.

What is the coded form of the word FOLIO?

A 1218151221

B 1221518121

C 2112151812

D 2118152112

E 2181512112

26 Recent research has established a relationship between obesity and lack of sleep. Lack of sleep releases hormones in people which means they crave sugary and fatty foods in order to alleviate their tiredness. In addition, they lack the energy to exercise. This suggests that all you need to do to lose weight is to get plenty of sleep. So throw away the diet sheet.

Which one of the following identifies the main **flaw** in the above argument?

A It assumes lack of sleep and obesity are not effects of another causal factor.

B It assumes losing weight is always a good thing.

C It assumes that lack of sleep is a necessary condition for gaining weight.

D It fails to account for other reasons why people might gain weight.

E It fails to state how many hours of sleep people need.

27 The greater speed of motor cycles in negotiating a route through urban traffic has persuaded a significant number of people to switch to this form of transport in cities worldwide. However they are a dangerous form of transport. Motor cyclists suffer many more fatal accidents in proportion to their numbers than car drivers. There can be no doubt that two wheels are faster than four in the increasingly congested modern city. Therefore anybody seeking a faster way through the traffic should opt for the bicycle rather than the motorcycle.

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

A Bicycle riders have a lower rate of fatalities than car drivers.

B Bicycle riders have a lower rate of fatalities than motor cyclists.

C Driving a car is the safest form of urban transport.

D Motor cycles are the most dangerous form of urban transport.

E The number of fatal accidents is a reliable measure of the danger of a form of transport.

28 Biofuels offer a significant way of reducing carbon dioxide emissions from road transport. These emissions are a key contributor to global warming. Biofuel is a transport fuel substitute derived from a wide variety of traditional agricultural crops, for example, wheat and sugar cane. Because plants absorb carbon dioxide from the atmosphere, when the fuel derived from them is used it simply returns this carbon dioxide to the atmosphere meaning no net increase. In contrast, fossil fuels are derived from underground sources millions of years old which means that when they are burnt the carbon dioxide released adds to the total amount. A switch to biofuels, therefore, promises a significant reduction in the carbon dioxide emissions caused by transport.

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

A Growing crops for biofuels would have an adverse effect on wildlife.

B Many countries would have to import biofuels from far away countries.

C The amount of land needed would seriously reduce that available for food production.

D The factories making the fertilisers for such crops would need to burn fossil fuels.

E The demand for biofuels would encourage more chopping down of rain-forests.

29 Due to recent negative publicity about the nutritional value of their products, McDonalds has had to increase their promotional budget in all countries to try to persuade people to buy their burgers and fries. When sales figures were analysed, Promotion Directors in a number of these countries discovered that sales of these products had increased. During the same period that the promotion took place, the Governments in many countries have been spending money on promotion to educate the public about making the right choices when it comes to buying nutritional foods, with an emphasis on the harm that fast food can do.

Which one of the statements below is a **conclusion** which follows from the above information?

A Despite the Governments' promotional campaigns the public will continue to buy unhealthy foods.

B Government promotional campaigns are of little value to changing public perceptions of key issues.

C McDonalds' promotional campaigns have had a positive impact on sales of burgers and fries in some countries.

D The Governments' promotional campaigns have not succeeded in reducing the consumption of McDonald's products.

E The Governments' promotional campaigns are not as effective as McDonalds' promotional campaigns.

30 Whilst teachers' leaders and Government ministers have welcomed the year-on-year rise in examination results, the rise in the pass rate has prompted the usual row over standards. This is not surprising, given the current system which allows the candidates to re-sit units as many times as they like. This absurd rule should be scrapped at once. After all, Olympic athletes do not get a second or third attempt at the 100 metres if they do not like the result, and the same logic should apply in education. When students sit down to take an exam they should know there are no second chances.

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

A   When athletes line up for the start of a race they know it is all or nothing.

B   In a race there can be only one winner, whereas any number can pass an exam.

C   Continual rises in the pass rate can only mean that exams are getting easier.

D   Olympic qualifying standards have risen over the years, not fallen.

E   The success of the examination system depends on how fair it is.

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20

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