

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

THINKING SKILLS

8436/01

Paper 1 Multiple Choice

May/June 2004

2 hours

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 **50** 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.

INFORMATION FOR CANDIDATES

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

This document consists of **24** printed pages and **4** blank pages.

- 1 In the last few decades, the technology of travel has developed rapidly. In particular, it has opened up the whole world to the keen traveller. Moreover, in many countries, the cost of travel is becoming more affordable to the average person. But the increased ability to travel has had many undesirable consequences, which people are becoming more aware of. For example, increased environmental awareness may produce a feeling of guilt both in terms of the pollution that air travel causes and the environmental impact of visitors on tourist destinations. Other travellers may be alarmed by the prospect of hi-jackings or terrorist attacks. Thus the sheer ability to travel will not necessarily lead to an increase in the amount of travel.

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

- A An increase in the ability to travel is being accompanied by a declining desire to travel.
 - B The technology of travel has never been more developed, particularly in flight travel.
 - C Increased environmental awareness is producing feelings of guilt in some travellers.
 - D In many countries the cost of flights is becoming more affordable to the average person.
 - E The amount of travel will not necessarily increase as a result of more opportunities to travel.
- 2 Bookshops often used to classify books for children according to age groups, for example 'suitable for children 5 - 9 years'. The practice of classifying books according to age has largely ceased in American and British bookshops. However, it would be an excellent idea to re-introduce it. Parents could then be sure that any book chosen would be suitable for the intellectual and emotional level of development their children had reached.

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

- A Children prefer the books that are classified in their age group.
- B Many other countries still classify children's books by age group.
- C Parents ought to control what their children read.
- D Age is a reliable indicator of intellectual and emotional development.
- E Authors of children's books write with specific age groups in mind.

- 3 For years environmentalists have been telling us that because human activity is damaging the planet, there is a danger that human life will be wiped out. They have made many predictions which they say will provide us with evidence that the planet cannot recover from our destructive activities, and thus that it will be unable to sustain human existence. Everyone agrees that such a disaster would be a disaster. But the things which environmentalists have predicted have not happened, so we can conclude that our activities do not pose a threat to human existence.

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

- A The fact that a prediction has not been fulfilled is not evidence that it will not occur.
 - B The fact that human activity is damaging is not evidence that a disaster will soon occur.
 - C The fact that environmentalists are wrong is evidence that we should ignore all their predictions.
 - D The fact that it would be a disaster if human life were wiped out is not evidence that this will not happen.
 - E The fact that the planet cannot recover from our destructive activities is not evidence that human life will be wiped out.
- 4 Like all living beings, humans have a biological need for food. However, what is considered food varies widely between different cultures. Some religions ban the eating of pork. However, this is considered a great delicacy in many parts of the world and is a staple ingredient in, for example, Chinese cuisine. In some countries, dog is considered a food, whereas in most Western European countries eating dog would be considered unacceptable.

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

- A Anything can be considered a food.
- B Different human groups have different nutritional requirements.
- C Biological needs alone do not determine what people eat.
- D What is harmful to eat cannot be objectively defined.
- E Animal species differ in what they consider food.

- 5 According to a recent survey, many people believe that about a quarter of the population will become victims of a violent crime in the next year, whereas crime statistics show that only about 1 per cent. Furthermore, those with the greatest fear of crime, namely the elderly, are the least likely to be affected (since most victims are young men). The increasing number of television programmes which show re-enactments of crimes add to people's fears about violent crime by making it seem more common than it is. It is time that we stopped making such programmes.

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

- A TV crime re-enactments are made much more realistic than they used to be.
 - B Most elderly people are unaware of the statistics of violent crime.
 - C Some types of violent crime have declined over the last few years.
 - D The elderly are the group least likely to watch crime re-enactments on television.
 - E The figures on the amount of violent crime vary from area to area.
- 6 The cost of framing a picture at Blake's Art Shop is made up of a number of elements:
1. The cost of labour and fittings is a fixed charge of \$25, independent of the size of the picture.
 2. The cost of the frame is equal to the perimeter of the picture multiplied by the cost of framing material (6 cents per centimetre).
 3. The cost of the backing and glass is equal to the area of the picture multiplied by the cost of these materials (0.8 cents per square centimetre).

How much would it cost to have a picture framed with an overall size of 40 x 30 cm?

- A \$18.00
- B \$38.80
- C \$43.00
- D \$106.60
- E \$129.40

- 7 Susan is having a party for 36 people. She has asked her guests to bring some food but in addition she will provide bread and cheese. She looks at her book on entertaining and gives the following guideline for quantities:
1. If catering for a bread and cheese party, each guest will need $\frac{1}{6}$ of a French stick and 40g of cheese.
 2. If the guests are to bring some food themselves, the host should provide $\frac{1}{3}$ of the total food required as calculated above.

How much bread and cheese should she provide?

- A 2 French sticks and 240g cheese.
 - B 2 French sticks and 480g cheese.
 - C 3 French sticks and 720g cheese.
 - D 6 French sticks and 1.44kg cheese.
 - E 12 French sticks and 480g cheese.
- 8 When I visited Cryptos, I discovered that the Cryptic currency consists of four different coins known as trulls, yimps, klook and dwoins.

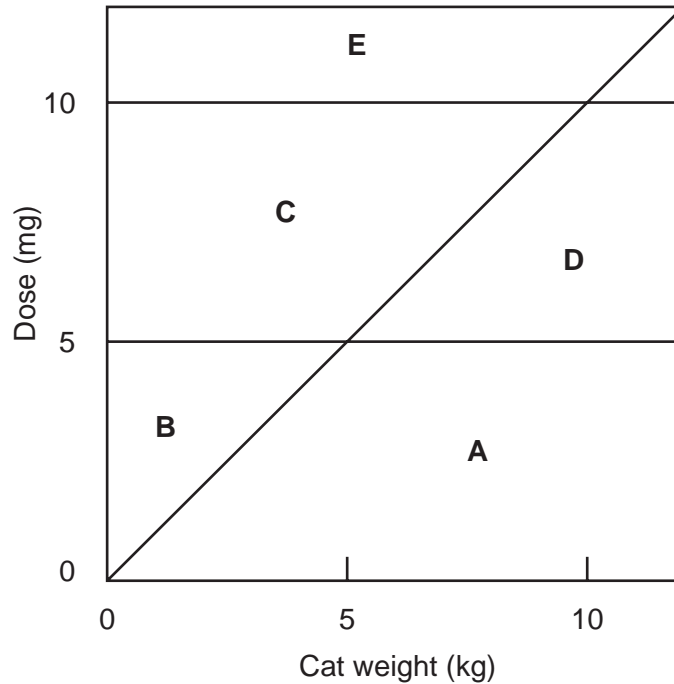
I had no idea, at first, of the relative value of each coin. However, shortly after my arrival I was asked if I could exchange a klook and a yimp for two trulls, and a short time later a similar request involved the exchange of a klook and a dwoin for three trulls.

Based on my encounters, which of the following statements is the only one that **must** be true?

- A A trull is worth more than a yimp.
- B A yimp is worth more than a klook.
- C A klook is worth more than a dwoin.
- D A dwoin is worth more than a yimp.
- E A yimp is worth more than a trull.

- 9 The dosage of a drug for adult cats is defined as follows:
- 1 The minimum dose is 5 mg per day.
 - 2 The dose should not exceed 1mg per kg of the cat's weight.
 - 3 The maximum dose is 10 mg per day.

Which area of the graph below represents these conditions?



- 10 Jimmy's portable CD player takes 8 AA size batteries. He has tried using both standard and alkaline batteries. He finds that the alkaline batteries last for 6 hours and the standard batteries last for 4 hours. The alkaline batteries cost \$3.60 for a pack of 4 and the standard batteries cost \$2.00 for a pack of 4.

What will be the relative costs of using the two types of battery for a typical month's use of 24 hours?

- A The standard batteries will be \$12.80 cheaper.
- B The standard batteries will be \$4.80 cheaper.
- C The alkaline batteries will be \$4.80 cheaper.
- D The alkaline batteries will be \$12.80 cheaper.
- E The alkaline batteries will be \$27.20 cheaper.

- 11 The traditional pattern of land use in areas of mixed farming in Europe was for the amount of grassland to increase in proportion to the number of cattle reared. A farm that devoted its business to cattle rearing would therefore have much of its land as grassland. This was because grassland was the main source of food for cattle. However, farmers increasingly feed maize to their cattle because of its higher protein content. This means that the amount of grassland in relation to ploughed land no longer increases in proportion to the amount of cattle rearing because maize is grown as a fodder crop for cattle.

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

- A A farm that concentrates only on cattle rearing will have no grassland at all.
 - B Cattle rearing no longer produces the landscape with which it is traditionally associated.
 - C Cattle rearing is becoming the dominant activity in mixed farming.
 - D The landscape is being spoiled by new developments in farming.
 - E Grass and maize are the only sources of food for cattle.
- 12 If all motorists drove within the speed limits, there would be fewer fatal and serious accidents on the roads. Many countries now use cameras positioned beside roads in order to detect the speed of passing cars, so that speeding drivers can be prosecuted. If these cameras are easily visible to the motorists, drivers will slow down abruptly, which is likely to cause crashes. Also, making these cameras conspicuous, whilst not placing them on all stretches of road, gives drivers the mistaken impression that it is safe to speed in some areas but not in others. So the safest policy would be to make everyone aware that there are many speed cameras, but to position them so that they are not obvious to drivers.

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

- A Drivers are good at judging what speed is safe on a particular road.
- B Making speed cameras obvious to drivers increases road safety.
- C Exceeding the speed limit is equally dangerous on all roads.
- D If there were no speed cameras, those exceeding the speed limit would have fewer accidents.
- E If drivers do not know where speed cameras are, they are more likely to drive within speed limits.

- 13 Eating too much salt is very bad for your health, in that it causes strokes and heart disease. It is not so easy to reduce your salt intake by avoiding adding salt to your food. Processed foods such as potato crisps and canned soups contain a lot of salt. The contents are listed on the labels of these foods, but it is still very difficult to work out how much salt each serving contains. But, since we all know what salt tastes like, we can judge whether something is too salty. Thus we can easily avoid these over-salty foods altogether. So if you have too much salt in your diet, you have only yourself to blame.

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

- A Some processed foods which contain salt do not taste salty.
 - B Processed foods are not necessary for a healthy diet.
 - C Foods which do not contain salt have very little flavour.
 - D Surveys show that most people consume more salt than they need.
 - E Salt is added to processed foods in order to help to preserve them.
- 14 The outstanding success of Ted's company, which was launched against the advice and without the support of bankers, business consultants and financiers, just goes to show that one person's vision can prove all the experts in the world wrong. Anyone thinking of setting up a business, therefore, should trust their own judgement and not be influenced by the advice of others.

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

- A It claims that bankers, business consultants and financiers don't know what they're talking about.
- B It implies that Ted would have been less successful if the experts had given him their support.
- C It fails to tell us whether Ted had any business experience before launching the company.
- D It suggests that to be successful in life you have to go into business.
- E It takes the single example of a successful company, and makes an unwarranted generalisation from it.

- 15 In many countries, there are particular roads that have an unusually high rate of car accidents. For example roads with sharp bends. People think these are 'dangerous' roads and call for them to be rebuilt. However, a road cannot be dangerous. The reason why these roads have high rates of traffic accidents is not because they are dangerous but because people drive on them in an inappropriate way, for example by driving too fast. If standards of driving improved then the accident rate would fall to average levels for roads generally and there would be no need for expensive road improvements.

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

- A The number of accidents has increased in proportion to the increase in traffic.
 - B The accident rate for drivers who are familiar with these roads is not unusually high.
 - C The accident rate on these roads increases in wet weather.
 - D The number of fatal car accidents has decreased in many countries.
 - E The number of accidents has fallen where such roads have been improved.
- 16 A farmer has a perfectly circular field with a radius of 100m. A new bypass for the local village is built which cuts off part of his field with a straight fence.

Which one of the following **must** be true?

- A The fence is more than 100m long.
 - B The distance from the centre of the circle to the closest point of the fence is more than 50m.
 - C The distance from the centre of the circle to the farthest point of the fence is 100m.
 - D The perimeter of the field is more than it was before it was cut.
 - E The longest distance one can walk in a straight line within the field is less than it was before it was cut.
- 17 In an effort to find employment:
- 1) I wrote to 37 companies, inquiring about positions vacant.
 - 2) I enclosed a stamped addressed envelope with each letter.
 - 3) I received only 11 replies.
 - 4) Stamps cost 45 cents each.

If you were asked to work out how much this exercise cost me in postage, which piece of information (if any) is **not** necessary?

- A 1)
- B 2)
- C 3)
- D 4)
- E All the information is necessary.

- 18 Five days into my new fitness programme things are not quite going to plan. I set my target of running an average of 12 kilometres per day, but over the five days so far I have only run 10 kilometres per day.

What is the minimum distance I need to run altogether during the next two days if I am to achieve my target over the first week?

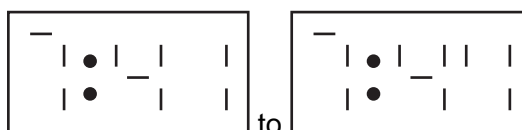
- A 28 kilometres
 B 30 kilometres
 C 34 kilometres
 D 38 kilometres
 E 44 kilometres
- 19 This is the daily timetable for the Glasburgh Hopabout Bus service that operates around the city centre.

STATION	7:30	7:40		20:30	20:45		00	15	22:45
HIGH ST.	7:35	7:45		20:35	20:50	<i>then at</i>	05	20	22:50
CATHEDRAL	7:42	7:52	<i>then every</i>	20:42	20:57	<i>these</i>	12	27	22:57
CASTLE	7:45	7:55	<i>10 mins</i>	20:45	21:00	<i>mins past</i>	15	30	23:00
ZOO	7:49	7:59	<i>until</i>	20:49	21:04	<i>each</i>	19	34	23:04
STATION	7:59	8:09		20:59	21:14	<i>hour</i>	29	44	23:14

How many times does this service run every day?

- A 84
 B 85
 C 86
 D 88
 E 89

- 20 My digital watch is proving to be unreliable at present. The three horizontal elements of the 7-segment display for the tens digit have stopped working.



The display has just changed from

What time is it now?

- A 7:42
 B 7:43
 C 7:44
 D 7:48
 E 7:49
- 21 It is sometimes claimed that computer games which simulate violence are a waste of time and encourage players to be aggressive. But it is a mistake to think that all such games are bad for those who play. Recent research shows that, when these games are played online, they can be positively good for the players. Players can 'chat' to opponents as they aim to 'hunt' and 'kill' each other. Researchers found that players had to use thinking skills in the way that chess players do, because they had to devise strategies and tactics. Instead of being aggressive in their online 'chat', players communicated in a humorous way and developed strong friendships with each other.

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

- A Playing computer games online requires thinking skills.
 B 'Chatting' whilst playing computer games online is not a waste of time.
 C Not all computer games which simulate violence encourage aggression.
 D Not all computer games which simulate violence are bad for players.
 E Playing violent computer games helps people get rid of aggression safely.

- 22 A link has been discovered between the increased use of antibiotics on farm animals and the appearance of antibiotic-resistant bugs that infect people. The link has normally been explained in terms of people eating meat contaminated by the bugs. However, large quantities of antibiotics and the bugs resistant to them end up in manure which is then spread on fields as fertiliser. Crops grown on these fields contain some of these bugs, which people then take up when they eat the crops. Of course, we must maintain the health of farm animals, but, for the sake of human health, we should cease the widespread use of antibiotics to deal with disease in farm animals.

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

- A Human health is more important than the health of farm animals.
 - B Crops can be grown successfully without using manure as fertiliser.
 - C Antibiotic-resistant bugs do not infect people through contaminated meat.
 - D Antibiotics are no longer effective against a wide range of infections.
 - E There is a way of maintaining the health of farm animals without the large-scale use of antibiotics.
- 23 In many countries in Europe, there has been a decline in school pupils learning to play the double bass and trombone. Some people would explain this in terms of a decline in interest in orchestral music, which relies on these instruments. However, much smaller orchestral instruments, such as the flute, have not experienced a decline in popularity. The reason, therefore, for the decline in pupils learning to play the double bass and trombone is that they are large and extremely difficult to transport in comparison with instruments such as flutes.

Which of the following, if true, **most weakens** the argument in the above passage?

- A Instruments such as flutes are as expensive as double basses and trombones.
- B The number of pupils playing some smaller instruments, such as trumpets, has declined.
- C The number of pupils playing other larger instruments, such as bass drums, has increased.
- D Sales of double basses and trombones to orchestras have not declined.
- E Countries outside Europe have not seen the same pattern of decline.

- 24 Throughout the world, the number of people undergoing psychotherapy is increasing. Many people hope that this treatment will lead to their lives being happy and contented. The techniques used in this process are derived from Freudian psychoanalysis. Surveys carried out over a number of years suggest, however, that many people who have undergone therapy are still unhappy and discontented. This shows that Freudian psychoanalysis has failed to achieve its original aims.

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

- A The original aim of Freudian psychoanalysis was to make people happy.
 - B People would have been happier without psychotherapy.
 - C Most people in the world are undergoing psychotherapy.
 - D Psychotherapy is not based on legitimate medical science.
 - E It is impossible for people to be happy and contented.
- 25 People have suggested that shopping over the Internet is a radically new way to buy goods. However, Internet shopping is just another version of 'mail order', so there is nothing particularly new about it. As with the mail order system, goods still have to be delivered to the home and, if they are not suitable, returned back to the Internet company, often at one's own expense. Therefore, Internet shopping involves many of the same features as the long-established mail order system.

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

- A Internet shopping involves the same problems as the old mail-order system.
 - B Internet shopping is seen by many as a radically new way to buy goods.
 - C Internet shopping still requires the delivery of goods to the home.
 - D Internet shopping is just another version of the old mail order system.
 - E Internet shopping is not a particularly new form of shopping.
- 26 Mavis is an air steward. She has just touched down at Manchester Airport after a return flight to Cyprus.

- 1) It is now 8.35 pm in Manchester.
- 2) Local time in Cyprus is 2 hours ahead of Manchester.
- 3) The plane was on the ground in Cyprus for 1 hour 20 minutes.
- 4) The total flying time was 8 hours 50 minutes.

If you were asked to work out at what (local) time Mavis originally took off from Manchester, which piece of information (if any) is **not** necessary?

- A 1)
- B 2)
- C 3)
- D 4)
- E All the information is necessary.

- 27 Nigel lives in Hereton. He has to travel by train tomorrow to keep an important appointment in Thereham at 3pm. This printout from the Internet shows his options:

	Journey	Arrival	Departure
1.	Hereton		6:02
	Changely	7:00	7:10
	Switchford	8:38	8:50
	Thereham	9:35	
2.	Hereton		6:54
	Changely	7:52	8:40
	Thereham	11:18	
3.	Hereton		8:00
	Changely	8:58	9:08
	Switchford	10:38	10:53
	Thereham	11:35	
4.	Hereton		8:59
	Changely	9:57	10:16
	Switchford	11:30	12:05
	Thereham	12:48	
5.	Hereton		10:10
	Changely	11:08	11:48
	Thereham	14:18	

Because he is prone to travel sickness, Nigel intends to choose the option that has the least actual travelling time (i.e. the least time on the move).

What time will Nigel depart from Hereton?

- A** 6:02
- B** 6:54
- C** 8:00
- D** 8:59
- E** 10:10

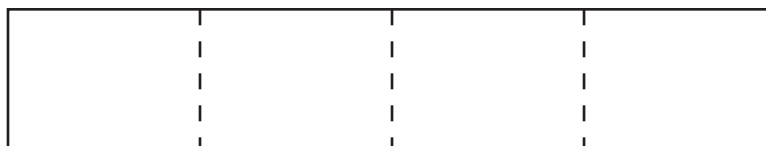
- 28 Robin is going into town to do some shopping and other errands. The opening places he needs to visit are shown below. The bank has no cash machine outside, only get cash during working hours.

Bank	9.30 am to 3.30 pm
Library	9.30 am to 5.00 pm
Supermarket	8.00 am to 8.00 pm
Newsagent	9.00 am to 6.00 pm

It takes him 15 minutes on his bicycle to get to town and 15 minutes to return home. He needs to visit the bank first as he has no cash. After that, his shopping and other activities will take him 45 minutes.

What is the earliest he can be home?

- A 9.45 am
 - B 10.00 am
 - C 10.15 am
 - D 10.30 am
 - E 10.45 am
- 29 A storage bin for a factory is to be made from a rectangular piece of metal 8m long by 1m wide by bending it into four equal sections and joining the two short edges. It will stand with one of the open ends on the floor. The bin is to hold boxes, each of which measures 500 x 500 x 500mm.



How many boxes will the bin hold?

- A 4
- B 8
- C 16
- D 32
- E 64

- 30 A cyclist in a race is riding with a group of riders at 40 km/hr. He has a puncture. For 30 seconds. The group continues at the same pace and the rider who had the puncture catches up with them at 50 km/hr.

How long will it take him to catch up with the group?

- A 1 minute 36 seconds
 - B 1 minute 45 seconds
 - C 2 minutes
 - D 2 minutes 30 seconds
 - E 5 minutes
- 31 The value of shares in Stock Exchanges throughout the world is declining. This might suggest that people should withdraw their savings from shares and put them into other forms of investment, such as property. However, it is best to leave one's money in shares. Any form of investment will experience 'peaks and troughs'. Therefore, withdrawing savings from shares and putting them into another form of investment, such as property, might mean one misses out on a rise in share prices only to suffer from a decline in property values.

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

- A The value of shares throughout the world is declining.
 - B People would be well advised to withdraw their money from shares.
 - C The investment value of property is likely to decline in the coming months.
 - D Withdrawing savings from shares might mean one misses out on a rise in their value.
 - E It is advisable to keep any money invested in shares where it is.
- 32 A respected media magazine has a five-star rating system for the films it reviews. Five stars means 'outstanding', four means 'very good', three 'good', two 'average', and one 'poor'. For anyone foolish enough to take them seriously, these ratings must be misleading. If the bottom score is one star and the top score is five, it stands to reason that three stars is the average score, because average means midway between best and worst. But, on the magazine's reckoning, two stars is average, meaning that four out of every five films are rated average or better, and only one below average – which is clearly not possible within the meanings of the words. It also means that there is no specific category for films that are 'rubbish' or 'awful'.

Which of the following is an **assumption** on which the above argument relies?

- A The reviewers do not regard any of the films they see as 'rubbish' or 'awful'.
- B The reviewers place a roughly equal number of films in each category.
- C The reviewers have a vested interest in awarding films higher ratings than they deserve.
- D Most readers of the magazine don't take the film ratings seriously.
- E Some really awful films are given three, four or even five star ratings by the magazine.

- 33 The explanation for the link between smoking and physical illnesses, such as cancer, has been increasingly understood. However, what is still little understood is the link between smoking and mental illness, such as depression. One recent study of young people showed that those who suffered from major depression at the start of the study were three times as likely to move from being light to being heavy smokers during the period of study. Why this was so is not clear. It is likely that the causal relationship between smoking and mental illness is much more complex than that of depression somehow making people want to smoke more. Thus we need a better understanding of this relationship if we are to deal with the problem.

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

- A People who smoke have a higher risk of depression than those who do not.
 - B Some physical illnesses can cause people to become depressed.
 - C Large numbers of young people neither smoke nor suffer from depression.
 - D Heavy smokers do not always develop physical illnesses such as cancer.
 - E The various treatments for depression do not take into account whether or not the patient smokes.
- 34 Melatonin is a natural human hormone which helps to control body rhythms such as sleep patterns and hunger. These rhythms are disturbed when people travel by air across time zones. The result is jet lag, which means that the body clock is out of phase with the day/night cycle of the time zone in which the traveller has arrived. By taking supplements of melatonin, travellers can speed up their adaptation to the new time zone, thus avoiding sleeplessness, fatigue and loss of concentration. It is at present illegal to sell melatonin in some countries, but in view of its beneficial effects, it should be made legally available everywhere without delay.

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

- A Some people do not suffer from jet lag after long distance flights.
 - B Studies of the use of melatonin supplements have not systematically looked for side-effects.
 - C Most people recover from jet lag after a few days, without taking melatonin supplements.
 - D Melatonin supplements can help people who work on night shifts to adjust their body clock.
 - E People who fly long distance on business are often unable to work for the first two days due to jet lag.
- 35 The influenza virus is carried by birds. People can become infected by the virus when there is contact between human beings and birds. This is why some epidemics of influenza started in Asia, where there are large markets selling live chickens. So if you avoid contact with birds, you will avoid catching influenza.

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

- A It assumes that influenza epidemics occur only in Asia.
- B It assumes that influenza cannot be treated with antibiotics.
- C It ignores the fact that chickens do not show symptoms of influenza.
- D It assumes that contact with birds is the only way of catching influenza.
- E It ignores the fact that most people do not have contact with live chickens.

- 36** I have a grandfather clock. It runs slightly fast, gaining one second every four hours. I wind it once a week, which I do just before noon every Saturday. The clock has to be set back every time I carry out this process, and after it has been restarted it is always 15 seconds slow at precisely 8 o'clock.

Today is Thursday, and the correct time now is 8pm.

How many seconds past 8 o'clock does the clock show?

- A** 14 seconds
 - B** 17 seconds
 - C** 20 seconds
 - D** 32 seconds
 - E** 47 seconds
- 37** Carl is taking part in a diving competition.

Competitors can choose to perform easier or harder dives, and each different type of dive has a numerical value known as degree of difficulty.

A dive is awarded marks out of ten by each of seven judges, then the overall score for the dive is computed according to the following instructions:

Remove the highest and lowest of the seven marks.

Add together the remaining five marks.

Multiply this total by the degree of difficulty.

Carl has just performed a dive with a degree of difficulty 3, and the judges have awarded marks as follows:

Judge	1	2	3	4	5	6	7
Mark	8	6	8	6	7	7	8

What is the overall score for Carl's dive?

- A** 37
- B** 39
- C** 102
- D** 108
- E** 150

- 38 Insulating your home can significantly reduce fuel bills. The total amount saved over a certain period of time can be calculated by multiplying the reduction in the fuel bill per year by the number of years since the insulation was installed, then subtracting the original cost of the insulation.

An insulation specialist has estimated that by spending \$500 on insulation I could reduce my fuel bills by \$120 per year.

If I install this insulation now, how much should I save over the next 10 years?

- A \$700
 - B \$1200
 - C \$1700
 - D \$3800
 - E \$4880
- 39 Fiona is travelling on a coach. She has just woken up after being asleep for a short while. The first thing she notices is this sign at the side of the motorway:

HARTON	2 km
THORHAM	21 km
ORLING	34 km
MARLBY	45 km

She remembered that just before she fell asleep the coach had passed this sign:

FORMERLY	7 km
PITFORD	15 km
HARTON	38 km
THORHAM	57 km

How far has the coach travelled while Fiona has been asleep?

- A 5 km
- B 12 km
- C 17 km
- D 19 km
- E 36 km

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ARBY CASTLE AND GARDENS Opening Times		
	Castle	Gardens
January - March & November - December	11.00 am - 3.00 pm	10.30 am - 3.30 pm
April - May & October	11.00 am - 4.30 pm	10.30 am - 5.00 pm
June - September	10.00 am - 6.00 pm	9.30 am - 7.00 pm

It is 1.15pm on October 23rd and Mr & Mrs Bray have just arrived at the entrance to Arby Castle and Gardens. They are not particularly interested in the gardens, but they are very keen to visit the castle.

How long will Mr & Mrs Bray be able to spend inside the castle?

- A 1 $\frac{3}{4}$ hours
- B 2 $\frac{1}{4}$ hours
- C 3 $\frac{1}{4}$ hours
- D 3 $\frac{3}{4}$ hours
- E 4 $\frac{3}{4}$ hours

- 41 In many congested cities around the world, the authorities are experimenting with daily charges for driving into the city centre. This strategy has effectively reduced traffic where it has been tried and this has encouraged other cities to do the same. But these so-called 'congestion charges' are grossly unjust. They will stop only those drivers who cannot afford them. Wealthy people, who will not miss a few dollars a day, will still drive into city centres if it suits them, while poor people struggle with public transport. What the authorities should do, for the sake of fairness, is to limit every driver's access to the city equally. They could do this by simply licensing cars for selected days of the week and disqualifying drivers who use them in the centre on other days.

Which of the following best expresses the **main conclusion** in the above argument?

- A Cars should be licenced for travel in city centres on selected days of the week and drivers disqualified if they use them on other days.
- B So-called 'congestion charges' are grossly unjust.
- C Charging drivers for driving their cars into the city will not stop wealthy drivers from doing so if it suits them.
- D Congestion charges only deter drivers who cannot afford to pay them.
- E City authorities should limit all drivers to the same amount of access.

- 42 Each year about 100 million sharks are killed by fishing nets, causing many species to become endangered. Populations of some species are as low as 20 per cent of the figures of the 1970s. It is odd then that the last ten years have seen the highest recorded number of unprovoked shark attacks on humans. The increase has happened at the same time that the practice of shark-watching dives has developed. In these dives, a mixture of meat and blood (called 'chum') is thrown into the sea to attract sharks. As a result, sharks associate people with food. Such dives should be discouraged if we are to reverse this increasing risk of unprovoked attacks by sharks.

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

- A Some species of shark are more dangerous than others.
 - B Sharks can be attracted by means other than using the mixture called 'chum'.
 - C The monitoring of shark attacks on people has increased over recent years.
 - D People who go surfing are the most likely group to be attacked by sharks.
 - E The risk of being attacked by sharks is lower than many other risks that people face in the sea.
- 43 The sale of cigarettes should not be banned, because people should be free to risk harm to themselves. But it is right to ban the advertising of cigarettes, because it is important to reduce the numbers of those who smoke, for both social benefits and benefits to individuals. The diseases caused by smoking, in particular lung cancer, involve a great deal of individual suffering and use up medical resources which could be used to treat other, unavoidable, diseases.

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

- A People who do not smoke cigarettes do not suffer from lung cancer.
- B The diseases caused by smoking are the most expensive diseases to treat.
- C Cigarette advertising misleads people about the effects of smoking.
- D Cigarette smokers should not be given priority for medical treatment.
- E Banning cigarette advertising leads to a reduction in the number of smokers.

- 44 One of the most common causes of the failure of small manufacturing firms is cash flow. Some firms manage very well to win contracts and have a full order book, but if there is insufficient money in the bank, the company the delay between taking the order and being paid for the goods can be very devastating. Even after delivery, customers can take months to settle their accounts. So, it is not quality, promptness, hard work, or enthusiasm that ensure a company's survival, it is cash. If enough money has been invested in the business, things really cannot go wrong.

Which of the following exposes the **flaw** in the argument?

- A It may be necessary for a firm to have a full order book, but unless accounts are settled promptly the business can fail.
 - B A firm that produces quality goods and delivers them promptly can still fail if there is a problem with cash flow.
 - C Adequate cash flow may be crucial to a firm's survival, but investment alone may not prevent things going wrong.
 - D Saying that it is sad that cash flow is what really matters for the survival of a business does not make it any less true.
 - E Some firms manage very well with limited cash flow, but make up for it with hard work and enthusiasm.
- 45 In many countries, health authorities recommend that people visit the dentist at least twice a year for 'check-ups' on the state of their teeth. This is costly for both patients and the authorities. However, recent research in Britain suggests that this is unnecessary and that the same check-ups every two or three years would be sufficient. The more frequent visits recommended usually include additional polishing of teeth, which is cosmetic and has little relevance to actual dental care.

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

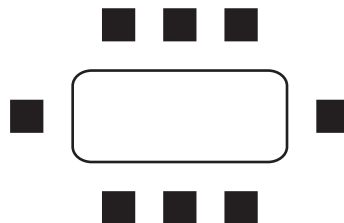
- A People gain no benefits from visiting the dentist every six months.
- B Dentists are charging people too much for dental services.
- C Dental health could be maintained much more cheaply than at present.
- D People should visit dentists only when they have a problem with their teeth.
- E Health authorities exaggerate the amount of health checks people need.

- 46 The table below shows the office opening hours (in local time) for a company's offices in five different countries and the time difference from Greenwich Mean Time for each country (+2 hrs means that when it is 12.00 noon in Greenwich, it is 2 pm in that country).

Country	Asinica	Bolsovia	Carbenia	Dervia	Eruthia
+ / - GMT	+1 hr	-3 hrs	+7 hrs	+5 hrs	-8 hrs
Opens	8.00 am	9.00 am	8.30 am	9.00 am	7.30 am
Closes	5.00 pm	6.00 pm	5.00 pm	5.30 pm	4.30 pm

During which working hours (in Asinica local time) can an employee in Asinica telephone Dervia and expect to find somebody in the office?

- A 8.00 am to 12.30 pm
 B 8.00 am to 1.30 pm
 C 9.00 am to 1.30 pm
 D 12.00 noon to 5.30 pm
 E 1.00 pm to 5.00 pm
- 47 The dining area at Pierre's restaurant is a square room measuring 15 metres by 15 metres. The tables are rectangular. Each one measures 2 metres by 80 centimetres and can seat up to 8 people, as indicated in this diagram:



When a large party is booked in for a function, Pierre puts tables together, edge to edge, to create parallel rows (bringing more tables in if necessary). On these occasions Pierre always makes sure that there is a gap of at least 1.5 metres between the edge of any table and the edge of the room, and also a gap of at least 1.5 metres between rows of tables.

What is the maximum number of people that could sit down to eat at any one time in Pierre's restaurant?

- A 190
 B 192
 C 228
 D 240
 E 288

- 48** Two buses run between the villages of Carrville and Denton with various stops on the timetable. The timetable assumes that the journey will take 20 minutes and that the buses will stop for 5 minutes at each end to give the drivers a short rest before starting on their return journeys. On a particular day, one of the buses is held up for 15 minutes by a road accident. In order to get back on schedule, the driver reduces the 5 minute stop at the ends to 2 minutes until he is on time.

How many single journeys between the two villages will he have to make (excluding the one where he is held up) before he can leave on time?

- A** 3
 - B** 4
 - C** 5
 - D** 6
 - E** 7
- 49** Lee took part in a 30-length sponsored swim yesterday at Splasham Leisure Centre. When practising before the event, he had never managed to swim more than 20 lengths consecutively, so to give him an extra incentive his grandfather offered him the following sponsorship deal:

“\$2 per length for the first 20 lengths, after which each subsequent length is worth \$3 more than the previous length”

On the day Lee surpassed himself and managed 27 lengths.

How much sponsorship money does Lee’s grandfather owe?

- A** \$61
 - B** \$100
 - C** \$124
 - D** \$138
 - E** \$225
- 50** A tortoise challenged a hare to a 5 kilometre race.

When the starting pistol was fired the tortoise set off immediately and kept up a steady speed of 0.5 metres per second throughout. The hare didn’t bother to start until 3 minutes later, and stopped to rest for 40 minutes after every completed kilometre, but ran at a steady rate of 20 metres per second.

Who won the race and by what distance?

- A** The hare won by 110 metres.
- B** The hare won by 75 metres.
- C** The tortoise won by 15 metres.
- D** The tortoise won by 30 metres.
- E** The tortoise won by 600 metres.

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