BioMedical Admissions Test   **4500/11**

Specimen   **60 minutes**

SECTION 1   **Thinking Skills**

INSTRUCTIONS TO CANDIDATES

Please read this page carefully, but do not open the question paper until you are told that you may do so.

This paper is Section 1 of 3. Your supervisor will collect this question paper and answer sheet before giving out Section 2.

A separate answer sheet is provided for this section. Please check you have one. You also require a soft pencil and an eraser.

Please complete the answer sheet with your:

- BMAT candidate number
- Centre number
- Date of birth
- Name

Speed as well as accuracy is important in this section. ***Work quickly, or you might not finish the paper.*** There are no penalties for incorrect responses, only marks for correct answers, so you should attempt **all** 32 questions. Each question is worth one mark.

Answer on the sheet provided. Questions ask you to show your choice between options by shading one circle. If you make a mistake, erase thoroughly and try again.

You **must** complete the answer sheet within the time limit.

You can use the question paper for rough working or notes, but **no extra paper** is allowed.

Calculators are NOT permitted.

Please wait to be told you may begin before turning this page.

This paper consists of 20 printed pages and 4 blank pages.

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1 Organic farming of animals and crops improves the environment through a reduced use of chemical fertilisers and pesticides but this does not go far enough. It would be preferable to have a totally vegetarian agriculture. Ninety per cent of the vegetable matter fed to farm animals passes straight through with its calorific content intact. By eating vegetables directly, rather than feeding them to animals, substantially less land would have to be farmed. The remaining land could be returned to its historical state - mixed deciduous woodland, which is what the countryside needs most of all.

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

A Organic farming enhances the environment.

B It would be preferable to have a totally vegetarian agriculture.

C A totally vegetarian agriculture would reduce the need for pesticides.

D There would be a need for less land under cultivation if we ate vegetables directly.

E Land could be returned to mixed deciduous woodland.

2 A publisher produces magazines, all of which have a number of pages which is a multiple of 32. Thus, a magazine can have 32, 64, 96....... pages. The front cover is always counted as page 1.

The centre spread of the magazine could have pages numbered

A 15 and 16.

B 30 and 31.

C 50 and 51.

D 63 and 64.

E 96 and 97.

3 Every motorist pays the same amount for road tax, regardless of how much they use the roads: someone who covers as little as 1 000 miles pays the same as someone who covers 20 000. This is unfair. Road tax should be scrapped and the money raised by an increase in the tax on car fuel. Making this change would ensure that those who use the roads more would pay more. This would not only be a fairer system, but could also bring in more revenue.

Which of the following best illustrates the principle underlying the argument above?

A People should receive free medical treatment only if they cannot afford to pay for it.

B People who travel to work every day by train should pay a lower fare than those who travel only occasionally.

C People who earn more than double the average wage should be made to pay much higher charges for dental treatment.

D Television channels should be paid for by subscription so that only those people who watch them should be made to pay.

E Telephone charges should be higher for business customers than for domestic customers because they are using the system only to make money.

4   School examination results in England this year reinforce the trend in improving pass rates. There is, however, no other evidence of improvements in school leavers' abilities - such as the data coming from employers or universities. One can reasonably conclude, therefore, that teachers are simply succeeding in coaching their pupils better for examinations than in previous years.

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

A   School examination results are a reliable indicator of pupils' abilities.

B   The level of difficulty of examinations has not been falling.

C   Employers' expectations of school leavers are unrealistic.

D   Teachers in previous years did not attempt to coach pupils for examinations.

E   Abilities of school pupils vary from year to year.

5   Many modern zoos have abandoned the idea of showing large numbers of animals in favour of programmes of conservation illustrated by a few examples of endangered species. However, the only way for a zoo to attract the public is to have lots of interesting animals, whether endangered or not - the sort that everybody flocks to see. Unless zoos attract the public, they are not likely to be profitable.

Which one of the following conclusions is best supported by the passage above?

A   Endangered animals do not attract the public.

B   Zoos which have lots of interesting animals make a profit.

C   Public interest in conservation programmes and endangered species is very limited.

D   Zoos which concentrate on conservation and a few endangered species are unlikely to make a profit.

E   Popular zoos are the only ones that can afford programmes of conservation.

6 Lenton Cars hire out cars at a cost of £50.00 per day if the number of miles travelled is less than 80. There is an extra charge of £1.00 for every mile travelled over 80 miles. Dunford Hire charge £60.00 per day for taking the car out and then 50 p for every mile travelled.

For how many miles travelled would the cost of hiring a car be the same for both hire companies?

A 100

B 130

C 140

D 170

E 180

7 Jonathan is planning to use a 10 acre field to supply winter silage for his cattle and hay for his sheep. He reckons to get 100 bales of hay from each acre. Before cutting the hay he will first cut an acre round the edge of the field as silage - this allows him to manoeuvre his hay making machinery. After making his hay in June he will cut the whole field as second cut silage in August and again as third cut silage in September. His farm manual provides the following information.

	As silage	As hay
First cut	7 bales per acre	100 small bales per acre
Second cut	5 bales per acre	Not applicable
Third cut	4 bales per acre	Not applicable

How many bales of silage will Jonathan have at the end of his harvest?

A 16

B 90

C 97

D 157

E 160

8 Gumbey and Sons have decided it is time to modernise their image. To go with their new steel and glass office building they have decided to change the company name. A number of acronyms have been shortlisted and, to help choose between them, the company chairman suggests they should choose a name which, when painted vertically from top to bottom on the new glass front door will read the same from inside and out.

Which of the following names should they choose?

A TIME

B NONA

C DOOD

D MITA

E WEEM

9 According to a recent survey, 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 it is only about 1 per cent. Furthermore, those with the greatest fear of crime are the least likely to be affected. The elderly are the most fearful, although victims are most likely to be young males. Over the last few years there has been an increase in the number of television programmes which show re-enactments of crimes. Though they are often done with the best of motives, these re-enactments add to people's fears about violent crime by making it look more common than it is. It is time that we stopped making such programmes.

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

A Crime re-enactments are made to look 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 Attempts have been made to ensure that statistics of violent crime are accurate.

10 Only shareholders are eligible to vote on the proposed take-over of the company by a large multi-national. They can either vote for or against, or abstain by not voting at all and the side with the more votes wins. So, if the majority vote in favour, the take-over will be approved. However, less than half of the eligible voters are in favour of the proposal, which means that the take-over will not be approved.

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

A Some of those in favour might change their minds and vote against the take-over.

B The large multi-national could pull out of the take-over deal, whichever way the vote goes.

C Some voters may abstain, meaning that one side could win with less than half the votes.

D No-one can be sure how a ballot will turn out until after the votes have been counted.

E A majority of votes against the take-over would be enough to stop it being approved.

11 If you want to earn a good salary these days, you have to gain considerable experience of working abroad. Since I've always wanted to earn a huge salary, it's obvious that I'm going to have to leave this country for some period of time.

Which of the following most closely parallels the reasoning used in the argument above?

A If I had more time to spend on this project, I know that it would be very successful. I've been told that I'm not going to be given enough time, so the project isn't going to succeed.

B Sam knew that if he wanted to write a film script, he'd have to learn the special techniques needed for such scripts. He has enrolled on a course to learn how to write them, so he'll soon be writing his first script.

C If the Foreign Secretary can bring the two sides together for talks, there's a good chance for peace. Peace is something that both sides want, so he'll be talking to both sides soon.

D If the doctor thinks that you should be allowed out of bed for a short while, then you must be recovering well from your operation. You have recovered much quicker than she thought you would have, so you'll be out of bed a lot from now on.

E Annie says that if she really wants to win the London Marathon race, she'll have to train very hard every day. She told me that she is determined to win the London Marathon, so that means she'll be working hard on her training programme every day from now on.

12 The 400 seats in a parliament are divided amongst five political parties. No two parties have the same number of seats, and each has at least 20 seats.

What is the largest number of seats that the third largest party can have?

A   22

B   118

C   119

D   120

E   121

13 In an effort to monitor my fuel bills last winter I recorded the readings on the gas and electricity meters on the first of each month as follows:

	Gas	Electricity
1st October	2842	5368
1st November	3029	5874
1st December	3281	6355
1st January	3473	6891
1st February	3668	7506
1st March	3914	8052
1st April	4082	8511

During which month did I use the most gas?

A   November

B   December

C   January

D   February

E   March

14 The graph below shows the percentage of young women intending to vote at the next election compared with the figure for all ages of men and women.
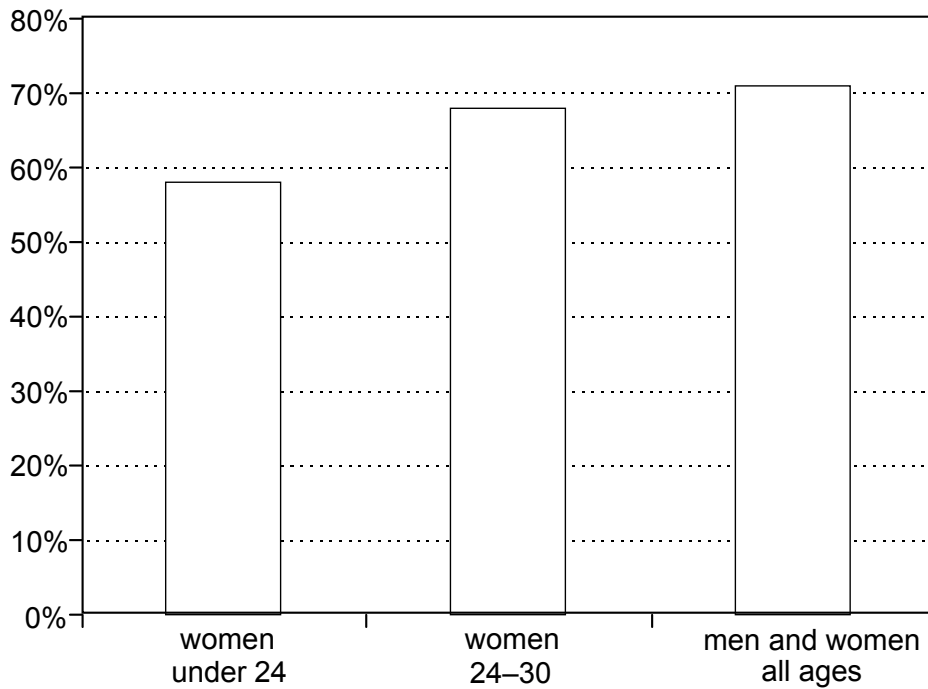
Which of the following statements can be deduced from the information provided?

1 Women are more likely to vote as they get older.
2 Women are less likely to vote than men.
3 Women are less likely to vote than at the last election.

A 1 and 2 only

B 2 and 3 only

C 1 and 3 only

D all of them

E none of them

15 Peat is organic matter which develops in wetland areas. It is the ideal growing medium for plants, and there is a tremendous demand for it from gardeners, both amateur and professional. But only three per cent of the earth's land surface is covered in peatland, and continued harvesting of peat will endanger these unique wetland habitats. Peat harvesting should be stopped immediately and gardeners should be encouraged to use an alternative.

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

   A   Only three per cent of the land on our planet is covered in peatland.

   B   Taking too much peat will destroy the unique wetland areas in which it develops.

   C   Peat cannot develop except in wetland areas.

   D   No more peat should be extracted and a different growing medium for plants should be promoted.

   E   Peat is a very popular growing medium used by amateur gardeners and professional growers.

16 Some employers operate a three-shift system. This requires that, in any three-week period, an individual worker will have to work, for example, from 6 am to 2 pm in the first week, from 2 pm to 10 pm in the second week, and from 10 pm to 6 am in the third week. It becomes very difficult to establish any kind of routine of eating and drinking under such a system. People working a three-shift system report a severe decline in their appetite, especially during the night-shift when they would normally be asleep. Therefore anyone about to begin working shifts like this can expect to lose weight.

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

   A   All shift workers have to work during the night.

   B   Employees tend to dislike working shifts.

   C   People who feel less hungry generally eat less food.

   D   Shift work often pays better than working days only.

   E   Canteen facilities are not always available to the night shift.

17 The treatment of unauthorised immigrants by many countries is often cruel and lacking in compassion. Even refugees from war-torn or famine-stricken regions can find themselves imprisoned on arrival or deported back to the place they have fled. It is a terrible decision to have to take, but if we make an exception to the law for one person, we ought to make the same exception for everyone. If some illegal entrants were allowed to stay, others would have to be treated equally, and no country - especially one that is already overpopulated - could physically accommodate the numbers that would then follow. The regulations have to be enforced rigidly, even if this means turning away people in great need.

Which of the following best illustrates the principle underlying the argument above?

A Because of fire regulations, the number of people attending the concert will have to be strictly limited.

B Growing urban traffic congestion means that in the future the numbers of cars entering some city centres will have to be restricted.

C All shop-lifters must be prosecuted because if one is let off others would rightly expect the same leniency.

D There is no one rule that can be applied for all prisoners seeking parole: every case is different and should be decided on its merits.

E If there are not enough hospital places for all those who need them, the most urgent ones must be treated first even if others have waited a long time.

18 On the M53 is a sign 'Warrington 20'. Just over half a mile further on is another sign 'Warrington 19'. This is not really surprising, since the distances are rounded to the nearest whole number of miles e.g. numbers of 4.5 and over but less than 5 become 5, numbers of 4 and over but less than 4.5 become 4. Half a mile futher along the road is a sign showing 'Warrington 18'.

The distance to Warrington must now be between

A 17.5 miles and 17.6 miles

B 17.6 miles and 18.0 miles

C 18.0 miles and 18.2 miles

D 18.2 miles and 18.4 miles

E 18.4 miles and 18.5 miles

19 The following table provides details of the postage rates for different weights of packages.

Weight not over	First Class	Second Class
60 g	25 c	19 c
100 g	38 c	29 c
150 g	47 c	36 c
200 g	57 c	43 c
250 g	67 c	52 c
300 g	77 c	61 c
350 g	88 c	70 c
400 g	$1.00	79 c
450 g	$1.13	89 c

Weight not over	First Class	Second Class
500 g	$1.25	98 c
600 g	$1.55	$1.20
700 g	$1.90	$1.40
750 g	$2.05	$1.45
800 g	$2.15	Not Admissible over 750 g
900 g	$2.35	
1000 g	$2.50	
Each extra 250 g or part thereof 65 c		

In my capacity as Secretary of the Black Knight Chess Club I am about to send minutes of the last meeting to each of the eight other members of the Committee.

The weight of each envelope, including its contents, is 70 g. Three of the members are new to the committee and I intend to include with their minutes a copy of our constitution, which weighs 40 g.
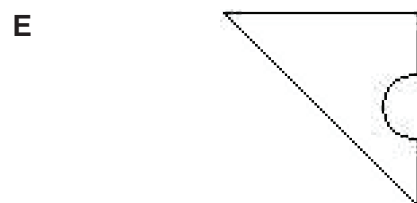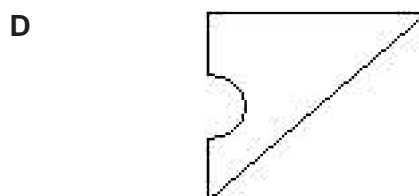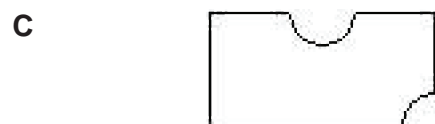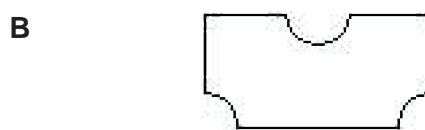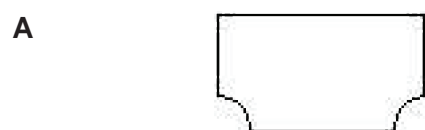
What will be the cost of sending these items second class?

A $1.40

B $1.82

C $2.53

D $2.89

E $3.31

20 The diagram shows a square piece of paper with identical semi-circles cut out half way along three of its edges.
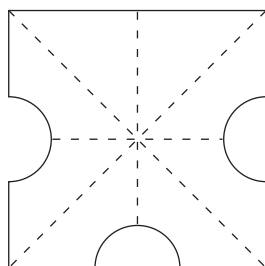
Which of the following is **not** a possible view of the paper after it has been folded along one of the dotted lines?

A

B

C

D

E

21 In the 1960s the drug cardiokind, after the usual period of carefully monitored clinical trials, was declared by its manufacturers to be unusually safe and very effective in lowering cholesterol levels in the blood. The World Health Organisation carried out exactly the same kind of trial on the drug but for a much longer period than the usual five years. The results in 1980 showed that the mortality rate from all causes for those on cardiokind was 25 per cent higher than for those who, though similar in other respects, had not taken the drug.

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

A The five-year trial period may not be sufficient for all drugs.

B Taking cardiokind reduces life expectancy by 25 per cent.

C Cardiokind is less effective at reducing cholesterol levels than was at first thought.

D After the original trials, the manufacturers concealed the side-effects of cardiokind.

E The monitoring programme instigated by the World Health Organisation was carried out efficiently.

22 In this Senior Management post we need someone who can keep a cool head in a crisis and react quickly to events. The applicant says he suffers from a phobia about flying, and panics especially when an aircraft is landing and that therefore he would prefer not to travel abroad on business if it could be avoided. He is obviously a very nervous type of person who would clearly go to pieces and panic in an emergency and fail to provide the leadership qualities necessary for the job. Therefore this person is not a suitable candidate for the post.

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

A It assumes phobias are not treatable or capable of being eliminated.

B It assumes that the person appointed to the job will need to travel abroad.

C It assumes that a specific phobia indicates a general tendency to panic.

D It assumes that people who stay cool in a crisis will be good leaders.

E It fails to take into account other qualities the person might have for the post.

23 Modern industrialised countries use far greater quantities per head of metals, water, petroleum, coal, and wood-products than developing countries, much of it being imported from the developing countries. This is the natural consequence of the higher general standard of living in present-day industrialised countries. Even assuming that the population of developing countries remains fixed at present levels, it follows that, if the standard of living in these countries is to reach those of present-day industrialised countries, a considerable increase in production and hence considerably higher consumption of resources will be unavoidable.

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

A   The population of developing countries is likely to increase substantially over the next decade.

B   Many of the resources needed for industrial production are increasingly expensive to produce.

C   New technological developments in industrial processes are likely to reduce the need for high consumption of resources.

D   The population of modern industrialised countries is increasing at a much slower rate than that of developing countries.

E   The gap between the standard of living in modern industrialised countries and that in developing countries has increased in the last twenty years.

24 The table shows the numbers of male and female students studying a selection of subjects at a college.

Subject	Male	Female
Biology	24	41
Geography	26	32
German	3	12
Mathematics	104	61
Music	6	10
Sociology	18	67

In which other subject was the balance of male and female students closest to that for Music?

A   Biology

B   Geography

C   German

D   Mathematics

E   Sociology

25

<table>
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WHEELERS CYCLES
Bicycles for Hire
8 am - 8 pm Daily
Hourly Rate
8 am - 4 pm : £2 per hour
4 pm - 8 pm : £1 per hour
All Day Hire : £15
Refundable Deposit : £10

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</table>

How much will it cost me to hire a bicycle from Wheelers Cycles from 11 am for eight hours?

A   £ 13

B   £ 15

C   £ 16

D   £ 20

E   £ 23

26 Three lighthouses are visible from the promenade at Rivermouth. One flashes every 1½ minutes, another flashes every 2 minutes, and the third flashes every 50 seconds.

All three have just flashed at the same time.

How long will it be before they all flash at the same time again?

A   6.0   minutes

B   7.5   minutes

C   10.0   minutes

D   30.0   minutes

E   150.0   minutes

27 The company has been making large losses for some time. If it continues to make such large losses, a sizeable number of the workforce will lose their jobs. Unfortunately, the town's economy will suffer considerably if many of the employees are made redundant. So if the company continues to operate with such losses, the economy of the town will be badly affected.

Which of the following most closely parallels the reasoning used in the above argument?

A If we do not pay nurses more, many of them will go and work in private hospitals. So there will be fewer of them to provide care in our public hospitals. Therefore, if we want to maintain high standards of nursing care in our public hospitals, we must pay nurses more.

B If this hot weather continues, the number of families taking foreign holidays will continue to fall. A number of travel companies will go out of business if fewer people book foreign holidays. Therefore, if this hot weather continues, we can expect many bargain holidays from travel companies.

C If everyone was prepared to pay more taxes, we could afford to raise the level of pensions. If old people were given increased pensions, they could spend more on food and heating. So If we want old people to lead much happier and healthier lives, we must be prepared to pay higher taxes.

D If house prices continue to fall, then more people will buy houses   The prices will then stop declining if more people are buying. So the fall in house prices must soon come to an end.

E If the present drought does not end soon, water will have to be rationed in many areas. Once water rationing is brought in, people are going to complain about having to pay high water charges. So unless we get some rain soon, we are going to soon find people complaining about their water bills.

28 Janet's mother has sent her to the greengrocer to buy oranges. Janet's mother knows the oranges were 12p each yesterday and gave Janet the exact money to buy a certain number. When Janet gets there she finds there is a special offer: if you buy 8 or more, the price of all oranges bought is reduced by 2p each. She finds she can now buy 2 more oranges than her mother thought with the money given.

How many can she buy?

A   8

B   10

C   12

D   18

E   20

29 There has been a decline in the rate of many of the illnesses of old age. For example, arthritis, dementia, and strokes are all declining year by year. The causes of this decline include such medical advances as beta-blockers to control high blood pressure and the fitting of hip replacements. There is, however, another factor. The present generation of 60- and 70- year-olds had much better nutrition as children than did their parents. Good nutrition in childhood is important in laying the foundations of good health in adulthood. Since improvements in nutrition have continued over the past sixty years, we can expect that many of the illnesses of old age will continue to decline.

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

A   We can expect that improvements in nutrition will continue.

B   The rate of many of the illnesses of old age has declined.

C   Medical advances have significantly reduced the rate of diseases of old age.

D   The fall in the rate of many of the illnesses associated with old age will continue.

E   Improvements in nutrition have been very important in maintaining good health in old age.

30 The town of Stowchester is served by five DIY stores all of which sell the same range of products at slightly different prices. To make matters worse, four of the five run loyalty incentive schemes with special saver cards. Under these schemes a discount is gained in the form of vouchers for every £100 spent.

The trading terms of the stores are summarised below.

|	
Make It	No loyalty scheme but promises the cheapest prices. Items cost on average 5 % less than *Saw Sharp*.
Saw Sharp	£5 voucher for every £100 spent.
Nuts'n Bolts	£6 voucher for every £100 spent but prices 5 % dearer than *Make It*.
Trowel Trader	£10 voucher for every £100 spent but prices 5 % dearer than *Saw Sharp*.
Plumb It	£10 voucher for every £100 spent but prices 10 % dearer than *Make It*.

Which store offers the best "long run" value for money?

A   Make It

B   Saw Sharp

C   Nuts'n Bolts

D   Trowel Trader

E   Plumb It

31 Calves farmed for veal are reared in extremely cruel conditions and have a short and miserable life. Other meats are available, such as lamb, and meat eaters who are concerned about cruelty to animals should avoid veal and consume one of these alternatives.

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

A Animals should be allowed to live as long as possible before being eaten.

B Calves should not be reared for consumption of their meat.

C The methods used to rear other animals for meat are not equally cruel.

D Animals have a right to be treated humanely.

E Meat eaters who are concerned with cruelty to animals do not eat veal.

32 A 150 cm length of string is tied around a book measuring 30 cm x 20 cm x 2 cm as shown in the diagram. After knotting and tying a bow, 24 cm of string was left over.
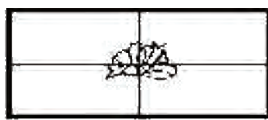
top   bottom   side

A second piece of string, also 150 cm long, is used to tie up a parcel of several copies of the book stacked back cover to front cover. A bow similar to that on the first parcel is tied and then no string is left over.

How many copies of the book are there in the second parcel?

A 3

B 4

C 8

D 12

E 15

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