

# PMT Education - BioMedical Admissions Test

## SECTION 1 - Thinking Skills

**PMT Mock Paper Set A**

**60 minutes**

### INSTRUCTIONS TO CANDIDATES

This paper is Section 1 of 3.

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.



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- 1 Ruby wants to make enough money over summer to buy a laptop for £1500. She has 12 weeks of summer holidays. She is away on holiday for 4 weeks and needs to buy her laptop 1 week before her holidays are over.

If she earns £6 per hour and works for 6 hours everyday after she comes back from her holiday, how much more or less money will Ruby have in order to buy her laptop one week before her holidays are over?

- A Has £264 extra
  - B Needs £264 extra
  - C Has £5116 extra
  - D Needs £516 extra
  - E Has the exact amount of money
- 2 The number of cases of child asthma is on the rise and it is a common belief that living in the city increases the chances of suffering from asthma. However, reported asthma attacks among inner city children are lower than those who live in the country. What seems to make a difference is the weight of the child, as the heaviest children actually suffer the most from asthma attacks and wheezing. The amount of physical exercise, which aids weight loss, done by children has dropped dramatically in recent years.

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

- A Exercise could help reduce the possibility of asthma attacks among children.
- B Asthma is becoming more of a problem across the whole of society.
- C It is healthier to live in the city than in the countryside.
- D Most children do not enjoy playing sports.
- E Children who weigh less do not suffer from asthma attacks.



- 3** Lucy is going to Canada. She has saved up £500 to take with her. Lucy's dad has his own company online and wants Lucy to work for him when she is away. He has agreed to pay Lucy £6 for every hour she does some work for his company. Lucy manages to do 1050 minutes of work for her dad's company.

If Lucy doesn't spend her £500 and gets work money from her dad, how many canadian dollars does she have in total? £1 = \$1.69 (Canadian dollars)

- A** \$605
  - B** \$1000
  - C** \$1022.45
  - D** \$1050.45
  - E** \$1100.45
- 4** We should not propagate the explanation that inheriting a 'bad seed' leads to personality disorders. Instead, we should emphasise the importance of the environment in the building of human personalities so that people will believe that medical and psychiatric science is able to treat or manage personality disorders.

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

- A** People believe that personality disorders are difficult to treat.
- B** People believe that there are no genetic factors in the development of human personalities.
- C** People believe that a good environment is able to help prevent personality disorders.
- D** People believe that genetic disorders are impossible to treat.
- E** People believe that personality disorders are determined by both genetics and the environment.



- 5** Rob has saved £1050. He wants to invest this in a savings account at a bank in either bank A or bank B. If there is any joining fee he will pay it out of the £1050 he has saved.

Bank A: Will give 8.5% interest at the end of the year to the total amount of money in the savings account, if you have more than £1000 in the savings account. They charge a joining fee of £20.

Bank B: Will give 9.5% interest only on £700 in your savings account, even if you have more. They have no joining fee.

Rob does not spend any of his money in the savings account till the end of the year.

How much more money will Rob have at the end of the year if he goes for bank A compared to bank B?

- A** £1.00
- B** £1.05
- C** £11.00
- D** £11.05
- E** £12.00

- 6** There have been an increasing number of incidents of violence against judges. These are happening not only during criminal trials, but even during divorce and bankruptcy hearings which take place in the judge's office. In court, the police and court officials may offer some protection to the judge but in their offices, they only have a panic button. It is to the credit of the judges that they are able to diffuse tension and calm people down.

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

- A** People on trials should take a calming pill before attending trial.
- B** All hearings should take place in court instead of some being in the private offices.
- C** Judges should be given more protection.
- D** Judges provoke violent reactions from people.
- E** The public should also be given protection.



7 10 matchsticks are used to make a star shown to the right.

Each match box contains 43 matchsticks.

How many boxes does she need to make 52 stars?

- A** 10
- B** 11
- C** 12
- D** 13
- E** 14



8 Businesses often try to keep their staff happy with lavish incentive packages. Yet, research has shown that 75% of the companies with the highest employee satisfaction actually provide free snacks. It seems that for businesses to have happy workers, they should provide free snacks at work, rather than spending lots of money on expensive incentive packages.

Which of the following expresses the flaw in the above argument?

- A** There is no information about how many companies with poor employee satisfaction provide free snacks.
- B** There is no information on other methods to keep workers happy.
- C** The companies with the highest employee satisfaction may have included free snacks as part of their incentive package for employees.
- D** We do not know how many companies were used in the research.
- E** Free snacks may lead to a fall in productivity.



- 9** Longevity is desired by many around the globe, and as a result, dieting fads frequently come and go as people attempt to live longer. A woman who lived until she was 122 years old attributes her longevity to a vegetarian diet. Studies have also shown that compared to meat eaters, lifelong vegetarians are less likely to require hospital treatment for illnesses and when admitted, remain in the hospital for shorter periods of time. Hence, in order to live a longer life, we should adopt a meat-free diet.

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

- A** A long life does not necessarily equate to a good life.
  - B** Being vegetarian may not result in living a longer life.
  - C** Although life expectancy is at a historic high, the number of vegetarians has not increased at a similar rate.
  - D** A vegetarian diet is not necessarily healthier than an omnivorous diet.
  - E** The study is not representative of the global population.
- 10** Allyson had her handbag and some jewellery snatched by four youths whilst her car was stationary at a traffic light junction. Her insurance company initially refused to pay out because her policy excludes any theft from a car. But Allyson pointed out in her appeal that the bag was snatched out of her hands and she was wearing the jewellery, which meant that both items were taken from her person so the insurance company will have to pay up.

Which one of the following is an assumption made by the above argument?

- A** The insurers would have not have to pay if the car doors had been locked.
- B** Thefts from unattended vehicles are excluded in the insurance cover.
- C** Thefts from the person are covered by Allyson's insurance policy.
- D** The insurers were wrong to exclude thefts from an occupied car.
- E** Allyson is not clear on the terms of her insurance policy.



- 11** Time in London is 6 hours ahead of Chicago. A clock in Chicago shows the time 17:35. The clock is turned off and is not working for 194 minutes. The clock is turned on again, is not reset to the correct time and continues to run for a further 593 minutes.

What is the time shown on the clock in London now?

- A** 03:28
- B** 05:28
- C** 06:42
- D** 09:28
- E** 12:42

- 12** Alaric wants to make sure he eats only 2000 calories a day.

Today his first meal was 400 calories.

His second meal had 2.4 times as many calories as his first meal.

His third meal had  $\frac{1}{4}$  as many calories as his second meal.

Alaric wants to eat some dessert after his third meal.

How many calories can this dessert have in it to make sure he only eats 2000 calories?

- A** 200
- B** 250
- C** 300
- D** 350
- E** 400





- 13** In order to carry out a large scale research study into the causes of heart disease, people suffering from the condition have been asked to come forward together with a sibling to help with the research. Through this, the genetic code which makes certain people susceptible to early deterioration of the heart can be identified. By examining genetic make-up, we will be able to identify individuals who are at risk of developing heart disease.

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

- A** It does not specify whether the sibling of the affected person would need to have or not have heart disease.
  - B** It assumes that genetics is the only factor putting people at risk of heart disease.
  - C** It ignores the fact that some people might not want to know whether they are at risk of developing heart disease.
  - D** It assumes that all sufferers of heart disease have a sibling willing to participate in the study.
  - E** It ignores the fact that the study might not have conclusive results.
- 14** Maisie bought 6 pen packs, 8 notebooks and 10 rubber packs for £78. The prices of the rubber packs, pen packs and notebooks are split in the ratio 1: 2.5: 3.

How much would it cost if Lucy wanted to buy one pen pack and 2 notebooks?

- A** £6.90
- B** £10.20
- C** £13.50
- D** £14.00
- E** £15.00



- 15** A recent study examined the practice of grouping children by their ability for individual subjects in schools - streaming. Streaming has been advocated as the way to raise academic standards in schools. However, the study found that streaming actually creates a set of expectations for teachers that overrides their estimation of individual capabilities. Teachers of the top streamed class assumed that their pupils could grasp concepts quickly and complete work quickly. The consequence of this was that some people became demoralised and their performance actually declined. For the bottom streamed class, their teachers set them easier practices and work rather than pushing them to their limits, leading to a lack of any opportunity to improve.

Which one of the following can be reliably concluded from the information in the above passage?

- A** Some children benefit from streaming.
  - B** Streaming children may not raise academic performance.
  - C** Teachers should assess individual capabilities.
  - D** Top streamed classes face greater academic rigour.
  - E** Streaming is demoralising for the children.
- 16** A school year is going to have a trip, there are 128 students in the year. They have a choice to pick from 2 different coach companies.

Coach company A: Each coach fits 15 students and you get 10% discount if more than 6 coaches are needed

Coach company B: Each coach fits 26 students and you get 10% discount if more than 6 coaches are needed

Which coach company would be the cheapest for the school to go with and by how much?

- A** Coach company A: by £10
- B** Coach company B: by £10
- C** Coach company A: by £12
- D** Coach company B: by £12
- E** Coach company A: by £15



- 17** Historical films and period dramas often contain inaccuracies. An event referred to may in actual fact not have happened if we adhere to the timeline of history. Maybe an object shown did not exist at that time. It is very difficult to ensure that everything is appropriate to the period in which it is set. Therefore, rather than spending time and resources on attempting to create an accurate period set, film companies should only produce contemporary dramas to save resources and also pander to the preferences of the audience.

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

- A** Remakes of classical films are often less successful than the originals.
  - B** A highly qualified art director would be able to ensure the accuracy of a period film set.
  - C** Many film companies are losing money.
  - D** The population demographic is changing to one that is ageing.
  - E** Most people prefer historical films and dramas to contemporary ones.
- 18** Within a company there are 24 business analysts. Out of the total number of workers in the company 12% of them are business analysts. When 95 more workers join, enough business analysts join so that 20% of the workers in the company are now business analysts.

How many business analysts join the company out of the 95 workers?

- A** 30
- B** 35
- C** 37
- D** 40
- E** 59



**19** Research has been carried out into the effect of levels of physical activity on children's ability to learn. Pupils in a French primary school were given lessons in the mornings; the afternoons were occupied by a wide range of physical activities such as gymnastics, swimming and sport. Although these pupils had 26% less time in lessons than pupils in other schools, they achieved better academic results at the end of their primary education. They were also more calm and attentive, and showed fewer behaviour problems. So children who are relatively inactive will not achieve their full learning potential.

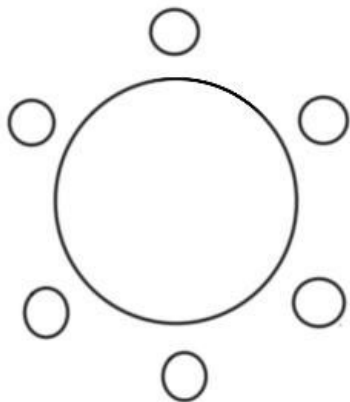
Which one of the following, if true, most strengthens the above argument?

- A** Increased physical activity increases blood flow to the brain.
- B** Many children who spend their leisure time watching television and playing computer games do worse in school.
- C** The methods of teaching in the 'test' school were better than those in the schools it was compared to.
- D** The family backgrounds of pupils in the 'test' school were very different from those of pupils in the schools with which it was compared.
- E** In an Australian school, children who had more physical exercise achieved higher arithmetic scores than similar pupils who were taught in the same way.





- 20** 3 girls (Lucy, Holly, Eve) and 3 boys (Martin, Sanjiv, Adam) go to dinner and sit around a round table as shown in the image. They realise three things. Everyone sits next to someone of the opposite gender. The names of the people sat next to each other do not have any of the same letters in their names. The people sat next to each other do not have the same number of letters in their names.



Which of these seating arrangements is correct?

- A** Adam, Holly, Martin, Eve, Sanjiv, Lucy
- B** Sanjiv, Lucy, Martin, Eve, Holly, Adam
- C** Sanjiv, Martin, Lucy, Holly, Adam, Eve
- D** Martin, Lucy, Sanjiv, Holly, Adam, Eve
- E** Eve, Martin, Lucy, Sanjiv, Adam, Lucy



- 21** Teenagers in Britain are more at risk than teenagers anywhere else in Europe. Their levels of smoking, alcohol consumption and use of illegal drugs have been shown by a survey to be greater than that of teenagers in almost any other European country. The health and social effects of this risky behaviour is enormous. The survey also showed that British parents have less idea of where their children are and what they are doing at weekends than other parents. The conclusion has to be made that it is British parents who are to blame for their teenage children's behaviour.

Which one of the following best expresses the flaw in the above argument?

- A** It assumes that parents' ignorance of their children's whereabouts causes the risky behaviour.
  - B** It assumes that high levels of smoking, alcohol consumption and use of illegal drugs is an exclusively British problem.
  - C** It ignores the fact that teenagers could have been influenced by their parents' own usage of tobacco, alcohol and drugs.
  - D** It does not set out what the health and social effects of the behaviour are.
  - E** It concentrates on teenagers and excludes other age groups.
- 22** There are plans to form an army of volunteers made up of retirees to go into hospital wards and classrooms every day to help out. This is not practical because most retired people have worked hard throughout their lives and wish to enjoy their remaining active years. People in this group who wish to do this kind of work are already often involved in their own communities, as members of clubs, societies and charities, so the scheme should not be implemented.

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

- A** Under this scheme, charities may find it difficult to recruit volunteers.
- B** Many retirees are very enthusiastic about this new scheme.
- C** There is a great shortage of workers to help out in hospital wards and classrooms.
- D** Hospitals and schools can recruit volunteers from all ages instead of only retirees.
- E** Many retirees have much spare time on hand.



- 23** A plane journey is for 4680 miles and the plane travels at 520 mph. Due to weather conditions the plane has to take a detour for 1040 miles.

How much longer did it take the plane due to the weather conditions compared to the normal journey?

- A** 1 hours
  - B** 1 hour 30 minutes
  - C** 2 hours
  - D** 2 hours 15 minutes
  - E** 2 hours 30 minutes
- 24** There are certain stretches of roads that have a particularly high rate of car accidents, for example roads with sharp bends, leading to calls from the public for these roads to be rebuilt. The fundamental reason these roads have high rates of traffic accidents is not because of the structure of the road in itself but rather people are driving in an inappropriate way, for example by driving too fast. If standards of driving and driving practices are improved, then there would be no need for expensive road improvements.

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

- A** The accident rate on these roads increases in wet weather.
- B** The accident rates have decreased in many countries.
- C** The accident rate has increased with the increase in volume of traffic.
- D** The accident rate has fallen in areas where roads have been improved.
- E** The accident rate on these roads have increased across the years.



**25** 25 people hire 2 coaches, that fit 15 people each, for a trip. It costs each person £2.40.

How many more people need to go on the trip for it to cost £2 per person?

- A** 4 people
- B** 5 people
- C** 6 people
- D** 7 people
- E** 8 people

**26** Parents are now sending their children to school as early as the age of 2. They believe it is better to start the learning process as soon as possible. However, if children are given formal teaching before they are ready for it, they may develop anxiety and have a lower self-esteem later in their school years. Therefore, all children should remain at home to play until the age of 7, the age at which formal schooling begins in many countries.

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

- A** Parents are free to look after their child at home.
- B** All children are only ready for formal teaching at the age of 7.
- C** It is important to maintain children's psychological health.
- D** All early age schooling is based around formal schooling instead of play.
- E** Parents are keen for their children to excel.





- 27** For a lemonade stand Josh bought 50 cups for £5.00 and 30 lemons for £12.

How much does Josh have to sell each cup of lemonade for to make a 50% profit?

- A** £0.40
- B** £0.50
- C** £0.51
- D** £0.55
- E** £0.60

- 28** Railways in the UK were privatised in the 1990s. The argument for this move was that competition would be introduced and inefficient services would be driven out of the market. Yet, under the private companies, it has only resulted in a fragmented, uncoordinated network rather than an efficient service. This shows that privatisation is not the way to improve public service.

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

- A** Privatisation is good in the long term.
- B** The previous state railway system was even more inefficient.
- C** Privatisation may improve other public services.
- D** Consumers have too high expectations of the transport service.
- E** The most efficient transport system in the world is state-run.



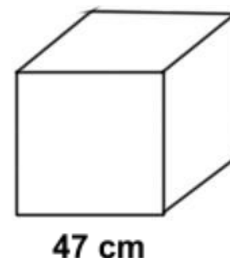
**29** Rob has to paint the cube below, he has £40 to spend on paint.

Each paint bottle costs £4.50.

The diagram shows the dimensions of the cube.

Each paint bottle paints an area of 1800 cm squared

Does Rob have enough money to buy paint bottles to paint all of the cube and how much money does he have to spare or need extra?



- A** No, needs £4
- B** Yes, has £4 left
- C** No, needs £5
- D** Yes, has £5 left
- E** Has the perfect amount of money

**30** If I throw a glass at a brick wall with sufficient force, it will break and fall to the ground in pieces. I can predict this outcome with near certainty, because the cause and effect are well known. But no-one can predict with any kind of certainty the number or shape of the fragments into which the glass will break. So whereas the fact that the glass breaks has a clear and obvious cause, the particular way in which it shatters has no cause and is random.

Which one of the following is the best expression of the flaw in the reasoning?

- A** Knowing the cause of something does not mean that I can predict it happening.
- B** Being able to predict something does not mean that I know what caused it to happen.
- C** Knowing what has happened before does not mean that I can predict what will happen next time.
- D** Not being able to explain something does not mean that it cannot happen.
- E** Being able to predict something if I know its cause, does not mean that if I cannot predict it, it has no cause.



- 31** Josh, Rose and Anjali play 4 games of scrabble. They all start off with £10 and have to give the winner of each game £3.  
Josh wins the first game  
Rose wins the second game  
Anjali wins the third and fourth game

How much money does Rose have in the end?

- A** £4
  - B** £7
  - C** £10
  - D** £13
  - E** £16
- 32** At present, there is lack of funding to provide extra uniformed police on the streets. Proposals to recruit volunteers from the community to help the police, however, could be a hindrance to public safety instead. The volunteers themselves would often be placed in dangerous situations, and the public would be less safe than if experienced, trained police officers were present.

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

- A** People do not carry out their job well if they are not paid.
- B** More police officers on the streets may not necessarily reduce crime.
- C** It is not possible to eradicate crime entirely.
- D** New police officers are as inexperienced as new volunteers.
- E** Paid volunteers often carry out their job well.

