UCAT DECISION MAKING QUESTION PACK 1

2019   **Time allowed: 31 minutes**

The examination consists of one section:

Section 1 – Decision Making
1.   Looks at your ability to apply logic to reach a decision or conclusion, evaluate arguments and analyse statistical information. You will have 31 minutes to answer 29 questions.

Surname	
Forename	
Date	

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Section 1 – Decision Making

In the exam you would have one minute to read this section.

In this section of the exam, you will be presented with questions that may refer to text, charts or graphs. Additional information may be presented within the question itself. All questions are standalone and do not share data.

Some questions will have four answer options but only one correct answer; others will require you to respond to five statements by placing a 'yes' or 'no' answer next to each statement.
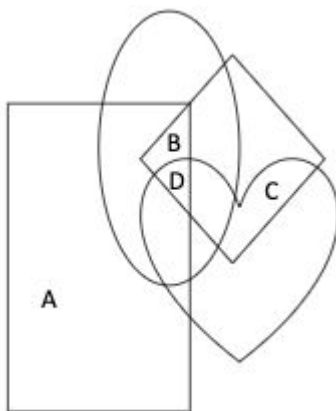
You have 31 minutes to answer 29 questions. It is in your best interest to answer all questions as there is no penalty for guessing. All unanswered questions will be scored as incorrect.

1. (DMSR0011) **8 motorbikers are in a race. Astrid wins the race, but Estelle was just behind. Cerys couldn't beat Dominic. Fatima and Gosia couldn't beat Harry, but they could beat Beatrice. Dominic just lost to Beatrice. Where does Cerys come in the race?**

    A - 4th
    B - 5th
    C - 6th
    D - 7th
    E - 8th

2. (DMFR0018) **A series of foods have the allergens above. A person is gluten-free and dairy-free only. Which letter represents foods she can eat?**

    A - A
    B - B
    C - C
    D - D

3. (DMEA0005) **Children who are conceived through donated eggs or donated sperm should have a right to know who their biological parents are and should be supplied with their contact details, given that those details are available.**

☐ A - Yes. Although it may not necessarily increase their happiness, human beings have a right to the truth surrounding their identity and origin.

☐ B - Yes. This will force people to think more carefully about donating their gametes, and not just do it for the immediate financial reward.

☐ C - No. It is not fair on the 'non-biological' parents who have raised the child and have invested both emotionally and financially into their up bringing.

☐ D - No. This might deter potential egg or sperm donators if they think that in the future their genetic offspring might contact them for financial or emotional assistance.

4. (DMDR0034) **All microorganisms which replicate by infecting a host cell are viruses. Those that replicate in the cytoplasm tend to be RNA viruses, while those that replicate in the nucleus tend to be DNA viruses although this is not always true.**

A. YES ☐ / NO ☐ You cannot always determine the type of virus by where it replicates in the cell.

B. YES ☐ / NO ☐ Viruses cannot replicate their genetic material without infecting a host cell.

C. YES ☐ / NO ☐ Not all microorganisms replicate intracellularly.

D. YES ☐ / NO ☐ A virus replicates its genetic material in the nucleus of a cell. It must be an RNA virus.

E. YES ☐ / NO ☐ A microorganism does not require a host to replicate. It must be a bacteria.

5. (DMSR0019) **There are 59 club members who are either juniors or seniors. There are 5 more male than female members. 20 of the 25 juniors are male. How many female seniors are there?**

   A - 22
   B - 24
   C - 30
   D - 32
   E - 34

6. (DMFR0015) **Ed Woodward is looking at his transfer target list. Mr Dybala, Mr Maguire, Mr Fernando, Mr James and Mr. Bale are the five names on the list. Mr Bale is just in front of Mr Maguire and just behind Mr James. Mr Dybala is fourth in the list. Which of the following cannot be true?**
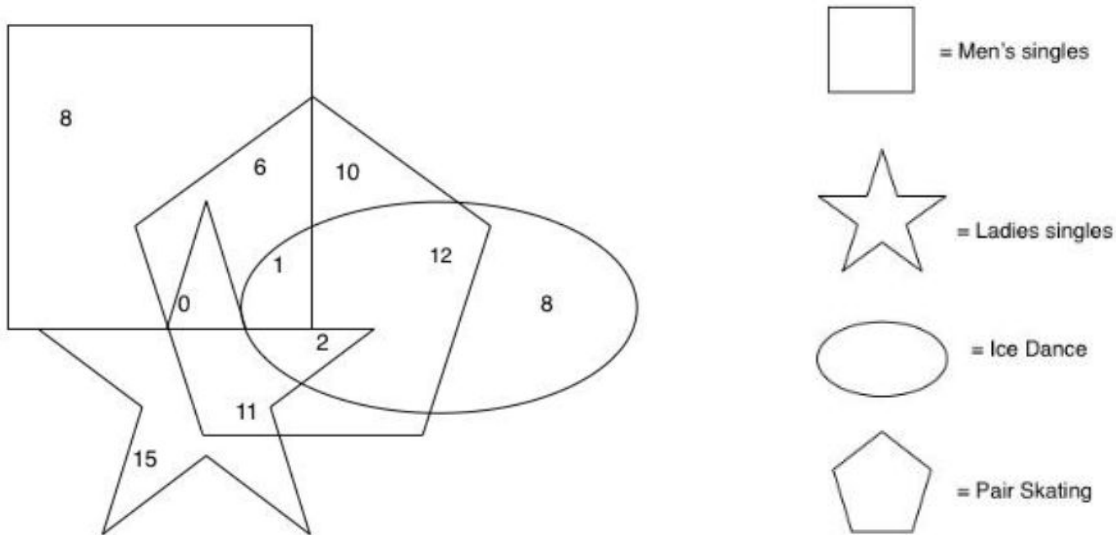
   A - Mr Bale is in second.
   B - Mr James is top of the list.
   C - Mr Maguire is fifth in the list.
   D - Mr Fernando is fifth in the list.

7. (DMSR0012) **A group of young people go on an activity holiday in Wales. All of the girls liked horse-riding while most of the boys didn't enjoy speed walking. All members used the all-inclusive restaurant each evening but some opted out of the all-inclusive bar. Which of the following statements is true?**

   A - None of the girls used the all-inclusive bar.
   B - None of the boys enjoyed horse-riding.
   C - All of the boys used the all-inclusive restaurant.
   D - Most of the boys didn't go speed walking.

8. (DMFR0006) **The diagram shows the different types of figure skating events at the Olympics and the number of individual skaters competing in each event.. The only mutually exclusive events are men's singles and ladies' singles. Competitors can take part in all other events otherwise. How many pairs are there in the pair skating event in total?**

8
6   10
1   12
0
2   8
11
15

= Men's singles

= Ladies singles

= Ice Dance

= Pair Skating

A - 8 pairs
B - 14 pairs
C - 21 pairs
D - 32 pairs

9. (DMSR0005) **Meadowbank Care Home looks after elderly people aged 75 or older. Lola turned 81 in 2015 and 2 years later came to Meadowbank where her friend Harriet, who is 1 year her junior, had already been a resident for 4 years. In 2017, James joined Meadowbank. Wendy joined Meadowbank sometime between turning 75 in 2014 and James joining in 2017. Which of these statements MUST be true?**

A - Wendy is older than Harriet.
B - Harriet joined Meadowbank two years before she turned eighty.
C - James is younger than Wendy.
D - Wendy joined after Lola did.

10. (DMEA0003) **After 40 years of eating meat, Thomas reads a study which states that a vegan diet is associated with a lower risk of getting cancer, and so he takes up veganism. Will taking up veganism definitively lower Thomas' risk of getting cancer?**

☐ **A** - Yes. There have been studies which demonstrate a strong correlation between smoked meats and smoked fish and gastric cancer.

☐ **B** - Yes. Diet is one of the biggest factors which can contribute to an individual's risk of getting cancer and so consuming more fruits and vegetables will lower this risk.

☐ **C** - No. The study only stated that veganism is associated with lower rates of cancer, and this association could be due to other lifestyle factors associated with a vegan diet.

☐ **D** - No. After 40 years of consuming meat and animal products, it is too late to reverse the damage that this would have caused.

11. (DMDR0038) **During the weekdays, there are 3 direct flights from London Heathrow to Tegel Airport, Berlin. The flights depart at 06:30, 10:30 and 19:00, with the journey taking two and a half hours from take-off to landing. For one adult passenger flying economy class the cost of the ticket is between £120 to £160, depending on which flight is taken.**

A. YES ☐ / NO ☐ For an adult flying economy class, the maximum amount for a ticket is £160

B. YES ☐ / NO ☐ There are 4 flights from London to Berlin bank holiday mondays.

C. YES ☐ / NO ☐ The earliest flight from London to Berlin is at 06:00.

D. YES ☐ / NO ☐ Some tickets from London Heathrow to Tegel Airport, Berlin are £120.

12. (DMEA0008) **In order to encourage individuals to develop healthy lifestyle habits that will last throughout their life, cooking lessons should be made compulsory in schools and there should be more time for sports and physical activity. Choose the strongest argument from the statements below.**

☐ **A** - Yes. Adding compulsory cooking lessons and a greater emphasis on games means that there will be more teaching jobs required and so it will create greater employment opportunity.

☐ **B** - Yes. While it is possible to develop new habits as an adult, learning them at a younger age means that they are more likely to stick.

☐ **C** - No. Teaching cooking and putting more time for sports in the school timetable will detract from more academic pursuits.

☐ **D** - No. It is not an efficient use of resources for the government to be adding these additional components into school curriculums.

13. (DMFR0005) **Four women are seated next to one another in a hair salon, as shown in the figure. One has brunette hair, one has blonde hair, one has red hair and one has grey hair. The names of these women, in no particular order, are Sandra, Grace, Beatrice and Jessica. Beatrice is sat next to both Grace and Sandra. Jessica is in seat number 4. The women at either ends of the row have blonde hair and red hair. Sandra has grey hair. Grace is only sat next to one other person. The woman in seat number 2 is brunette.**

Seat Number 1	Seat Number 2	Seat Number 3	Seat Number 4

Which of the following combinations MUST be true?

☐ **A** - Sandra - Red

☐ **B** - Beatrice - Brunette

☐ **C** - Jessica - Blonde

☐ **D** - Grace - Grey

14. (DMEA0013) **Should fines for littering be increased to clean up our public spaces?**

☐ **A** - Yes, a study in Malta which has fines of up to €2000 (around 50 times the current UK fine) showed a reduction in littering by greater than 50%.

☐ **B** - Yes, it could pay for more public bins.

☐ **C** - No, the real issue is a lack of available bins.

☐ **D** - No, it's a nuisance but many couldn't afford a higher fine.

15. (DMDR0012) **In this country not all politicians are male. However all politicians are honest except for Tom and Tim.**

A. YES ☐ / NO ☐   Some male politicians are honest.

B. YES ☐ / NO ☐   If Harry is a politician in this country, he is honest.

C. YES ☐ / NO ☐   Not all honest politicians in this country are male.

D. YES ☐ / NO ☐   If a politician is honest, it isn't Tom or Tim.

E. YES ☐ / NO ☐   All politicians except Tom and Tim are honest.

16. (DMFR0016) **In a school race, five runners took part: Harri, Jamie, Nathan, Piri and Sam, Harri was two places ahead of Sam, whose name was only next to one other on the results board. Nathan and Piri were separated by a photo finish. The top three appeared on the podium. Which of the following MUST be true?**

☐ **A** - Nathan came first.

☐ **B** - Piri came second.

☐ **C** - Jamie came fourth.

☐ **D** - Harri was not on the podium.

17. (DMDR0043) **Everyone in a certain house likes ketchup, apart from Yewande. More than one person likes brown sauce.**

A. YES ☐ / NO ☐ At least one person likes both ketchup and brown sauce.

B. YES ☐ / NO ☐ If a person in the house dislikes ketchup, they must be Yewande.

C. YES ☐ / NO ☐ Yewandle likes brown sauce.

D. YES ☐ / NO ☐ If a person likes brown sauce and ketchup, they must not be Yewande.

18. (DMDR0021) **ELRM is a conglomerate corporation made of three smaller companies, X, Y and Z. Everything produced by company X is food or drink related. 75% of company Y's products are food or drink related. Company Z does not produce anything food or drink related.**

A. YES ☐ / NO ☐ Angie works for a company that produces food or drink related products, therefore she can't work for company Z.

B. YES ☐ / NO ☐ Allie works for 2 different companies within ELRM, and spends no time dealing with food or drink related products. Therefore she must work for company Y and company Z.

C. YES ☐ / NO ☐ Company Y will always produce less total food or drink related products compared with company X.

D. YES ☐ / NO ☐ Jenny is CEO of one of the smaller companies and spends time dealing with food or drink related products. She must be CEO of company X.

D. YES ☐ / NO ☐ Most of ELRM's products are food and drink related.

19. (DMSR0016) **8 cars are in a race. Car A wins Car E wasn't far behind. Car C could not beat Car D. Car F and Car G couldn't beat Car H, but they did beat Car B. Car D just lost out to Car B. What place did Car B come?**

    A.   4th
    B.   5th
    C.   6th
    D.   7th
    E.   8th

20. (DMEA0017) **Should there be a minimum body mass index (BMI) for weight reduction surgery on the NHS?**
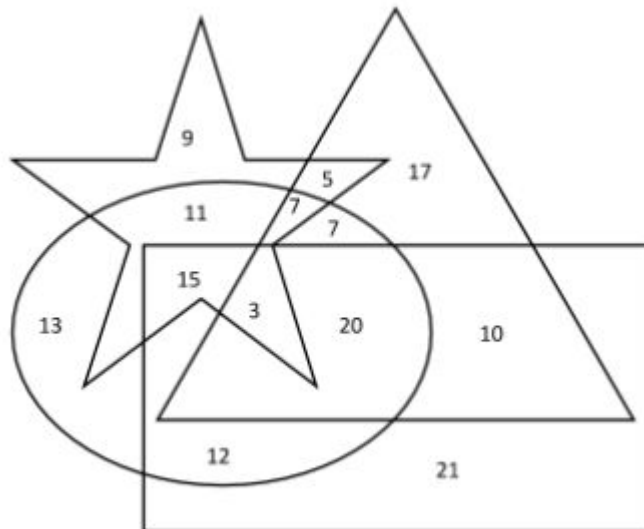
A - Yes, obesity is one of the leading killers and any measure should be taken to stop it.

B - No. That is discrimination.

C - Yes. The NHS doesn't have funds to provide weight reduction surgery to all overweight patients.

D - Yes. Otherwise patients with a poor body image may opt for it which could be dangerous.

21. (DMDR0025) **There are 4 pupils from a primary school: John, Tim, Jess and Peppa. They like 4 different colours. They all drew different objects with their favourite colours. John drew a boat and Peppa's object was yellow. There was a purple octopus. Tim does not like blue nor flowers. Jess drew the house. Which of the following must be true?**

- **A.** Jess' favourite colour is blue.
- **B.** John's drawing is blue.
- **C.** The house is yellow.
- **D.** Tim drew the octopus.

22. (DMFR0025) **The diagram below represents a population of 150 people and the languages they speak.**

How many people speak two languages?

- **A.** 25
- **B.** 34
- **C.** 38
- **D.** 45

23. (DMDR0024) **Mrs Pettigrew is incharge of the year 5 school trip. The children are divided into two groups: boys and girls. All the boys had an apple. Some boys and some girls had a banana. All children had a cheese sandwich. Yoghurts were only eaten by girls.**

A. YES ☐ / NO ☐   Girls had a cheese sandwich and yoghurt.
B. YES ☐ / NO ☐   The children ate cheese and yoghurts.
C. YES ☐ / NO ☐   All the boys had an orange.
D. YES ☐ / NO ☐   Some boys had an apple and banana.
E. YES ☐ / NO ☐   All boys had a cheese sandwich and an apple.

24. (DMFR0020) **Consider the following equations.**

$$\bigcirc + \bigcirc = \triangle + \triangle + \triangle$$

$$\diamondsuit = \square + \triangle$$

$$\diamondsuit + \square = \bigcirc$$

How many squares is one diamond equal to?

☐ A.   6
☐ B.   5
☐ C.   4
☐ D.   3

25. (DMSR0015) **8 friends are running in a race. Ben wins the race, but Sam was not far behind. Joseph could not beat Sarah. Sophie and Ryan could not beat Christina, but they could beat Tom. Sarah just lost out to Tom. Where does Tom come in the race?**

    A.   4th
    B.   5th
    C.   6th
    D.   7th
    E.   8th

26. (DMEA0016) **Should doctors who are against abortion have to perform them?**

A - Yes, it is the patient's decision what happens to her body, not the doctor's.
B - Yes. Not performing the abortion may mean the patient has to wait for treatment.
C - No. It may be against the doctor's religious or ethical beliefs.
D - No. Doctor's must do no harm and abortion is murder.

27. (DMSR0025) **6 friends; Terry, Phil, Simon, Elaine, Jemima and Jess go out for Lunch for Phil's' Birthday one afternoon. On average they spent £20 each. Simon didn't bring any money so Elaine had pay £50 to cover her and Simon. Phil didn't pay anything because it was his Birthday. Terry didn't eat much so only paid 75% of the average. Jemima spent 120% of what Jess did. How much did Jemima spend?**
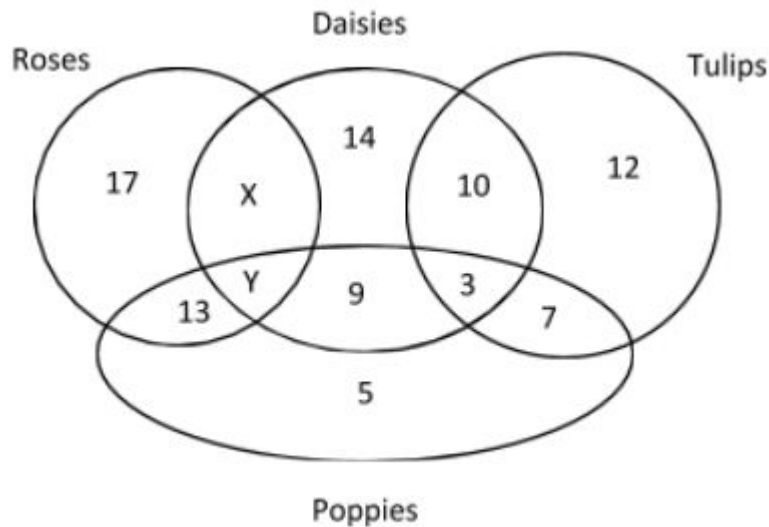
    A. £40
    B. £30
    C. £20
    D. £35
    E. £25

28. (DMDR0026) **I like cats and reptiles, but I dislike dogs. I like snakes, but only if they are pythons. I am allergic to certain types of cats and dogs. My sister brought a new pet which she says I will like.**

A. YES ☐ / NO ☐   The new pet might be a lizard.
B. YES ☐ / NO ☐   I will be allergic to the new pet.
C. YES ☐ / NO ☐   If the new pet is a reptile I will like it.
D. YES ☐ / NO ☐   The new pet will not bark.
E. YES ☐ / NO ☐   The new pet will be an insect.

29. (DMFR0024) **The following diagram represents the different types of flower that can be found in 100 gardens in houses located in the same town. All gardens have at least one type of flower.**

Which of the following statements is true?

A. There are 50 gardens with exactly one type of flower.
B. It cannot be determined how many gardens have all four types of flower.
C. Daisies are more commonly grown than roses.
D. 12 gardens have roses and daisies but no tulips.

END OF EXAM PAPER

And breathe! Take a break and then come back and mark this paper to see how you've done.