

YOUR NAME:

Admissions Test 2

Faculty of Philosophy

1st December 2020

The total time for the test is 20mins.

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1. Sam operates a theme park ride. She lets customers on the ride until there are either (i) two customers on the ride who have never met, or (ii) three customers on the ride, all of whom have met each other before. What is the maximum number of people he can let onto the ride.
A. 6
B. 5
C. 4
D. 3
E. 2
2. A box contains some vegetables, all but two of which are artichokes, all but two of which are brussels sprouts and all but two of which are carrots. How many vegetables are in the bowl?
A. 6
B. 5
C. 4
D. 3
E. 2
3. You are presented with 4 double-sided cards. On the visible sides, the first card is red, the second green, the third has a '1' on it and the fourth has a '2' on it. In order to determine the truth of the statement 'If a card is red on one side, then it has an even number on the other' by turning over the fewest number of cards, which of the cards must you turn over?
A. The red and green cards
B. The '1' and '2' cards
C. The red card and the '1' card
D. The red card and the '2' card
E. All of them
4. Aaliyah admires Brian, Catherine and Daveed, but not herself. Brian only admires Aaliyah. Catherine only admires Brian. And Daveed only admires himself.

Which of the following sentences is false:

- A. Somebody who admires themselves admires nobody else.**
- B. Somebody admires somebody who admires themselves.**
- C. Everyone who admires no one but themselves is admired by someone other than themselves.**

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- D. Nobody admires fewer people than admire them.
 - E. Everyone admires someone.
5. You have 3 bags. Bag A contains 2 green balls. Bag B contains 2 black balls. Bag C contains 1 green ball and 1 black ball. You select a bag at random and take out a ball. It is black. What is the probability that the other ball in the bag is black?
- A. $1/3$
 - B. $2/3$
 - C. $1/2$
 - D. $3/5$
 - E. $2/5$
6. You are presented with 2 opaque boxes, A and B. They are guarded by two people: one always tells the truth, one always lies, and you don't know which is which. One of them says 'Box A contains a prize and box B is empty'. The other says 'One box contains a prize and the other is empty'. Which boxes contain prizes?
- A. Box A only
 - B. Box B only
 - C. Both
 - D. Neither
 - E. Not enough information
7. You are presented with 2 opaque boxes, A and B. They are guarded by two people: either both tell the truth or both lie, and you don't know which. One of them says 'There is either no prize in box A or a prize in box B'. The other says 'There is a prize in box A'. Which boxes contain prizes?
- A. Box A only
 - B. Box B only
 - C. Both
 - D. Neither
 - E. Not enough information

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8. Charli has an ordinary deck of cards (52 cards, 13 each of 4 different suits). She starts dealing from the deck, face up. She will stop dealing as soon as she has revealed 4 cards of the same suit. What is the maximum number of cards that she could deal?

A. 5
B. 9
C. 13
D. 27
E. 43

9. Megan is given a bag containing 10 balls. There are 2 equally likely possibilities: either the bag contains 8 red and 2 green balls, or it contains 2 red and 8 green balls. Megan draws 2 balls at random.

Which of the following is true?

A. If the first ball is red, the second is probably also red.
B. If the first ball is red, the second is probably green.
C. If the first ball is red, there is a 50% chance the second is green.
D. If both balls are red, then all remaining balls in the bag are probably green.
E. None of the above

10. 'All romantic movies are funny. No old movies are exciting. No unexciting movies are boring. All funny movies are old.'

If all of this is true, what can we legitimately conclude?

A. Romantic movies are not boring
B. Romantic movies are not old
C. Romantic movies are not funny
D. Romantic movies are exciting
E. None of the above

11. A solid 4cm cube of wood is covered on all sides with blue paint. The cube is then cut into smaller 1cm cubes. How many of these new cubes will have no blue sides?

A. 1
B. 8
C. 9
D. 16
E. 32

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12. A buy a book for £9 and sell it for £10. I decide to buy it back for £11. I then sell it again, this time for £12.

How much profit have I made overall?

- A. £0
- B. £1
- C. £2
- D. £3
- E. £4

13. A relation is called *asymmetric* if, whenever x has it to y , y does not have it to x . For example, the relation x is taller than y is asymmetric, because whenever x is taller than y , y is *not* taller than x .

Which of the following is another asymmetric relation?

- A. x lives within 10 miles of y
- B. x is not the same height as y
- C. x is at least as young as y
- D. x is y 's father
- E. x is y 's brother

14. "Nothing fluffy is ugly. All puppies like to play. And everything which is not ugly does not like to play."

If all of this is true, what can we legitimately conclude?

- A. Some things that like to play are ugly.
- B. No puppy is ugly.
- C. Nothing that likes to play is ugly.
- D. No puppy is fluffy.
- E. None of the above

15. You have a rectangular piece of paper and want to cut it into 28 pieces. You do this by making one cut at a time of existing pieces of papers and never fold them. What is the minimum number of cuts that you will have to make?

- A. 18
- B. 19
- C. 23
- D. 27
- E. 28

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16. A box contains 4 yellow and 4 blue dice. What is the smallest number of dice that I must randomly take out so as to be certain of drawing 2 dice of the same colour?

- A. 7
- B. 6
- C. 5
- D. 4
- E. 3