

YOUR NAME:

Admissions Test – Part I

Faculty of Philosophy

December 2020

The total time for the test is 20mins.

YOUR NAME:

1. A bowl contains some pieces of fruit, all but two of which are apples, all but two of which are bananas and all but two of which are cherries. How many pieces of fruit are in the bowl?
A. 2
B. 3
C. 4
D. 5
E. 6
2. Mary 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
3. Ian operates a theme park ride. He 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. 2
B. 3
C. 4
D. 5
E. 6
4. You have a rectangular slab of chocolate and want to split it into 28 pieces. You do this by snapping existing pieces of chocolate but can only snap one piece at a time. What is the minimum number of snaps that you will have to make?
A. 18
B. 19
C. 23
D. 27
E. 28

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5. You are presented with 4 double-sided cards. On the visible sides, the first card has 'A' on it, the second 'B', the third '1' and the fourth '2'. In order to determine the truth of the statement 'If a card has a vowel 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 'A' and 'B' cards
- B. The '1' and '2' cards
- C. The 'A' and '1' cards
- D. The 'A' and '2' cards
- E. All of them

6. 'All horror movies are scary. No modern movies are exciting. No unexciting movies are beautiful. All scary movies are modern.'

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

- A. Horror movies are not beautiful
- B. Horror movies are not modern
- C. Horror movies are not scary
- D. Horror movies are exciting
- E. None of the above

7. Adam admires Briony, Clare and Dan, but not himself. Briony only admires Adam. Clare only admires Briony. And Dan only admires himself.

Which of the following sentences is false:

- A. Somebody admires somebody who admires themselves.
- B. Everyone who admires no one but themselves is admired by someone other than themselves.
- C. Everyone admires someone.
- D. Nobody admires fewer people than admire them.
- E. Somebody who admires themselves admires nobody else.

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8. You have 3 bags. Bag A contains 2 red balls. Bag B contains 2 yellow balls. Bag C contains 1 red ball and 1 yellow ball. You select a bag at random and take out a ball. It is yellow. What is the probability that the other ball in the bag is yellow?
- A. $1/3$
 - B. $2/3$
 - C. $1/2$
 - D. $3/5$
 - E. $2/5$
9. A box contains 4 red and 4 green 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. 3
 - B. 4
 - C. 5
 - D. 6
 - E. 7
10. 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

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11. 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

12. A buy a book for £8 and sell it for £9. I decide to buy it back for £10. I then sell it again, this time for £11.

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 is not the same weight as y
- B. x is at least as old as y
- C. x lives within 5 miles of y
- D. x is y 's sister
- E. x is y 's mother

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14. "Nothing furry is horrible. All kittens are cute. And everything which is not horrible is not cute."

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

- A. Some cute things are horrible.
 - B. No kitten is horrible.
 - C. No cute things are horrible.
 - D. No kitten is furry.
 - E. None of the above
15. A solid 4cm cube of wood is covered on all sides with red paint. The cube is then cut into smaller 1cm cubes. How many of these new cubes will have no red sides?

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

16. Katy is given a bag containing 10 balls. There are 2 equally likely possibilities: either the bag contains 8 black and 2 white balls, or it contains 2 black and 8 white balls. Katy draws 2 balls at random.

Which of the following is true?

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