

Logical Venn Diagrams

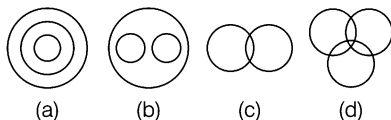
- A Venn Diagram is a representation method for all possible relations that can exist between given groups of elements in single figure.
- In this chapter, we deal with questions which aim at analysing a candidate's ability to relate a certain given groups of items and illustrate it diagrammatically.
- Based on the variety of questions that are asked in various competitive exams, we have classified these logical Venn diagrams into two types as follows.

Identification of Relation Based Venn Diagram

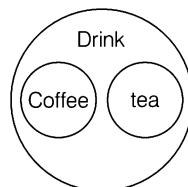
The most common type of questions that we encounter in logical venn diagram are based on circular venn diagrams. The questions asked from this type contain a group of some elements (things) and also some diagrams. The candidate is required to find out the diagram which classifies the given group correctly or illustrates the relation between them.

Example 1 Identify the diagram that best represents the relationship among the classes given below.

Tea, coffee, Drink

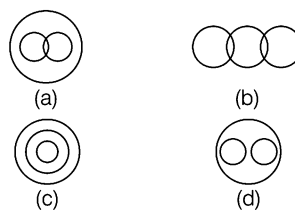


Sol. (b) Tea and coffee are different type of drinks.

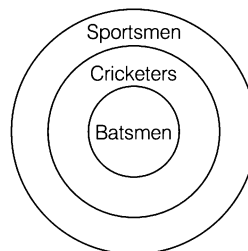


Example 2 Identify the diagram that best represents the relationship among classes given below.

Sportsmen, Cricketers, Batsman



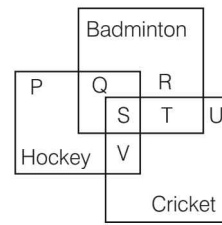
Sol. (c) A batsman is a cricketer and cricketers are sportsmen.



Analysis Based Venn Diagram

In this type of questions, generally a Venn diagram comprising of different geometrical figures is given. Each geometrical figure in the diagram represents a certain class. The candidate is required to study and analyse the figure carefully and then answer the given questions based on it.

Example 3 The given diagram represents those people who play hockey, cricket and badminton. See the diagram and find out those people who play all the three games.



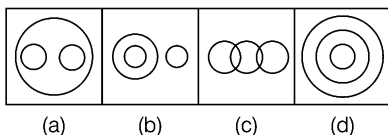
- (a) $T + U$ (b) $Q + R$
(c) $P + Q + R$ (d) S

Sol. (d) S is that part which is common to all the three squares. It means that S represents those people who play all the three games.

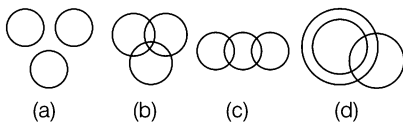
Practice Exercise

1. Identify the diagram that best represents the relationship among the classes given below.

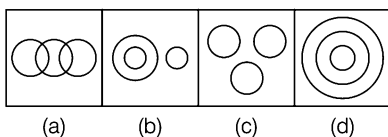
Liquids, Milk, River water



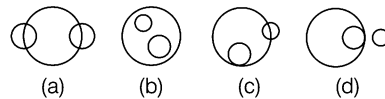
2. Choose the correct relationship depicting diagram for Smokers, Lawyers, Non-Smokers



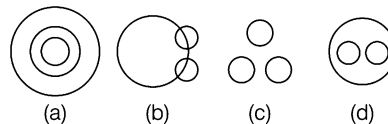
3. Which one of the following diagrams best depicts the relationship among Earth, Sea and Sun?



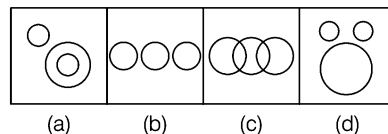
4. Which of the following diagrams represents relation between Currency, Rupee and Dollar?



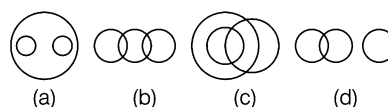
5. Which one of the following diagrams best represents the relationship between Snake, Lizard and Reptiles?



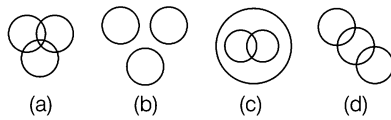
6. Identify the diagram that best represents the relationship among the classes given below. Police, Thief, Criminal



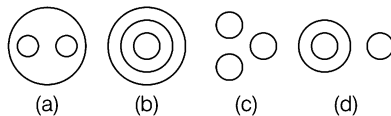
7. Which one of the following diagrams best depicts the relationship among Elephants, Wolves and Animals?



8. Which diagram correctly represents the relationship between Politicians, Poets and Women?

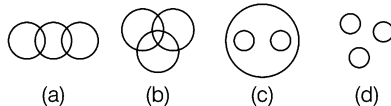


Directions (Q. Nos. 9-13) Each of the questions given below contains three groups of items. You are required to choose one of the four numbered diagrams (a), (b), (c) and (d) that depicts the correct relationship among the three groups of items in each of the question.



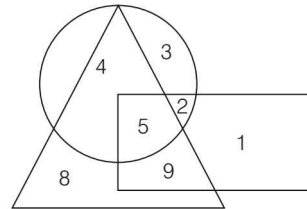
9. Moon, Earth, Universe
10. India, Pakistan, Asia
11. Batsman, Cricketer, Stick
12. Book, Pen, Pencil
13. House, Bedroom, Bathroom

Directions (Q. Nos. 14-16) Which of the following diagrams best represents the relationship among given words.

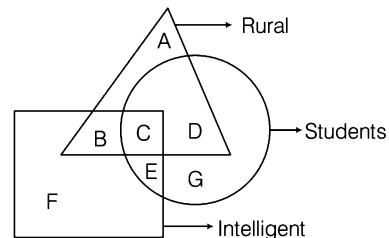


14. Woman, Teacher, Doctor
15. Fruits, Plums, Tomatoes.
16. Red, Green, Colour

Direction (Q. Nos. 17-19) Study the following diagram to answer these question.



17. Find out the number that lies only inside the triangle.
(a) 4 (b) 3
(c) 8 (d) 1
18. What are the numbers that lie inside any two figures?
(a) 5,1 (b) 4,3,1
(c) 8,3 (d) 4,9,2
19. Find out the number that lies inside all the figures.
(a) 5 (b) 8
(c) 9 (d) 2
20. Find the region that represents those rural students who are not intelligent?



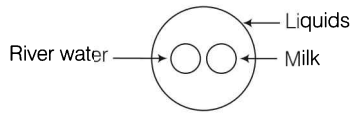
- (a) D (b) A
(c) B (d) G

Answers

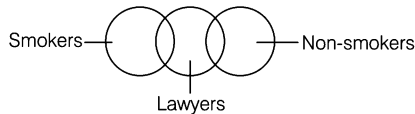
1	(a)	2	(c)	3	(b)	4	(b)	5	(d)	6	(a)	7	(a)	8	(a)	9	(a)	10	(a)
11	(d)	12	(c)	13	(a)	14	(b)	15	(c)	16	(c)	17	(c)	18	(d)	19	(a)	20	(a)

Hints & Solutions

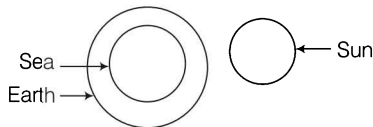
1. (a) Milk and River water both are liquids. This can be expressed as given in option (a)



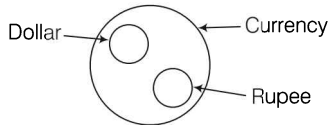
2. (c) Some lawyers may be smokers while some lawyers may be non-smokers. But all the smokers and non-smokers may not be lawyers. This can be expressed as given in option (c).



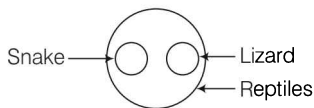
3. (b) Sea is a part of the Earth but Sun exists outside the Earth. This relation can be expressed as given in option (b).



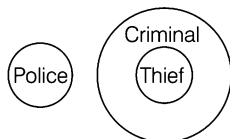
4. (b) Rupee and dollar are entirely different from each other but both come under the category of currency. This can be expressed as given in option (b).



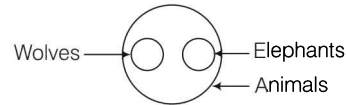
5. (d) Snake and lizard are entirely different but both belong to the class of reptiles. This can be expressed as given in option (d).



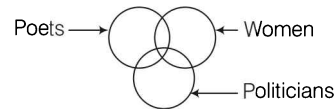
6. (a) Thief is a criminal but police is different. This can be expressed as given in option (a).



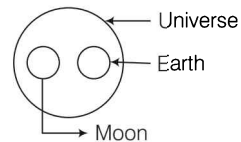
7. (a) Wolves and elephants both are animals but are different from each other. This can be expressed as given in option (a).



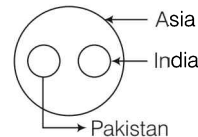
8. (a) Some women are poets. Some women are politicians. Some women politicians are poets. This can be expressed as given in option (a).



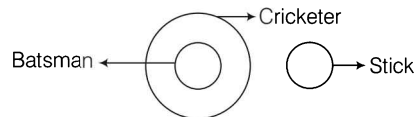
9. (a) Moon is a satellite, while earth is a planet. Hence, both are entirely different but both are the part of the universe. This relation can be expressed as given in option (a).



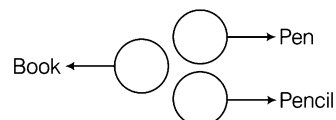
10. (a) India and Pakistan are two different countries but they both are the part of Asia. This relation can be expressed as given in option (a).



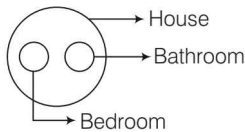
11. (d) All batsmen are cricketers but stick is entirely different. This can be expressed as given in option (d).



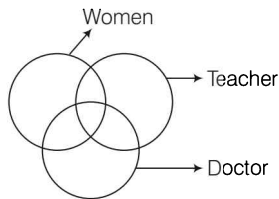
12. (c) Book, pen and pencil, all the three belong to stationery items but they are entirely independent of one another. This can be expressed as given in option (c).



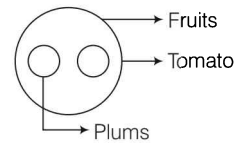
13. (a) Both bedroom and bathroom are entirely different but both are the parts of a house and exist completely inside it (house). This can be expressed as given in option (a).



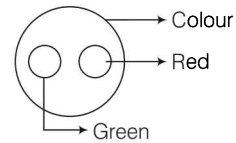
14. (b) Some women are doctors. Some women are teachers. Some doctors are teachers. Some women teachers are doctors. This can be expressed as given in option (b).



15. (c) Both Plums and Tomatoes are fruits but they both are entirely different. This can be expressed as given in option (c)



16. (c) Red and green both belong to the group of colours but they both are entirely different. This can be expressed as given in option (c)



17. (c) According to the diagram, number 8 lies only inside the triangle.
18. (d) Number common to circle and triangle = 4
Number common to rectangle and triangle = 9
Number common to circle and rectangle = 2
19. (a) According to the diagram, common number that lies inside all figures = 5
20. (a) Region D represents rural students who are not intelligent.