

LOGICAL DIAGRAM

3

CHAPTER

- An object is called a subset of another object, if former is a part of latter and such relation is shown by two concentric circles.

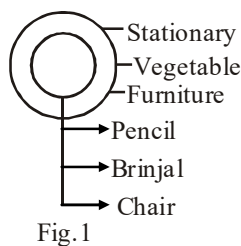


Fig.1

- (i) Pencil, Stationary
- (ii) Brinjal, Vegetable
- (iii) Chair, Furniture

It is very clear from the above relationship that one object is a part of other, and hence all such relationships can be represented by fig.1.

- An object is said to have an intersection with another object, when two objects share some thing in common.

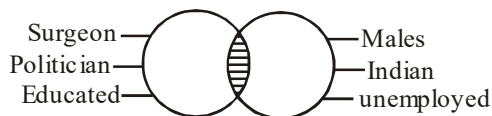


Fig.2

- (i) Surgeon, Males
- (ii) Politicians, Indian
- (iii) Educated, Unemployed

All the three relationships given above have something in common as some surgeons can be male and some female, some politicians may be Indian and some may belong to other countries, educated may be employed and unemployed as well. And all the three relationships can be represented by fig. 2.

- Two objects are said to be disjoint when neither one is subset of another nor they share anything in common. In other words, totally unrelated objects fall under this types of relationship.

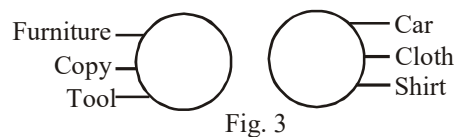


Fig. 3

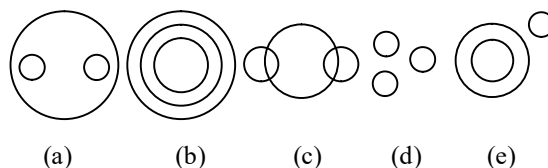
- (i) Furniture, Car
- (ii) Copy, Cloth
- (iii) Tool, Shirt

It is clear from the above relationship that both the objects are unrelated to each other, and hence can be represented diagrammatically as shown in fig. 3

From the above discussion we observe that representation of relationship of two objects is not typical if students follow the above points. But representation of three objects diagrammatically pose slight problem before the students. A variety of such relationship is being discussed in the following examples.

❖ EXAMPLES ❖

- Ex.1** Each of these questions given below contains three group of things. You are to choose from the following five numbered diagrams, a diagram that depicts the correct relationship among the three groups of things in each question.

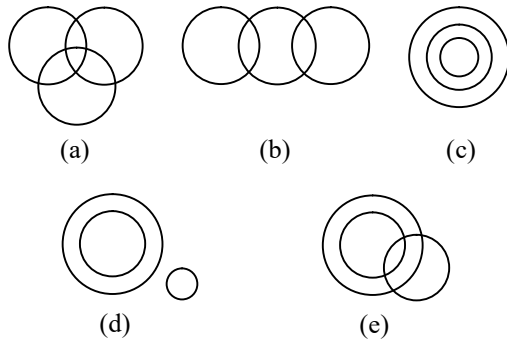


1. Moon, Earth, Universe
2. India, Pakistan, Asia
3. Batsman, Cricket, Stick
4. Book, Pen, Pencil.

- Sol. 1.** Moon and Earth, are the parts of universe and therefore are subsets of universe and hence this relationship is represented by diagram (a).
2. India and Pakistan, are the subsets of Asia. Hence, option (a) represents this relationship.

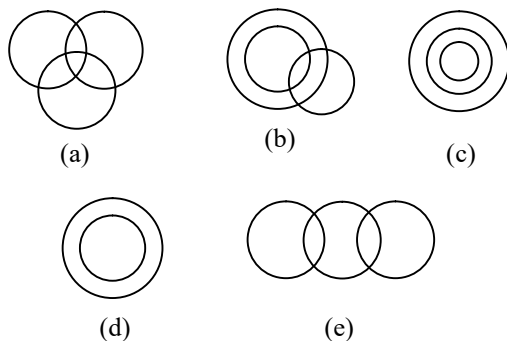
3. Batsman is a subset of Cricket and, Stick is something unrelated to Cricket, therefore, our answer is (e).
4. Book, Pen, Pencil are neither subset of one another nor have anything in common, Therefore, our answer is (d).

Ex.2 Which of the following diagrams correctly represents the relationship among Tennis fans, Cricket players and Students.



Sol. From the relationship given in the question, we observe that each of the objects carries something in common to one another. A tennis fan can be a Cricket player as well as student. Hence diagram (a) represents this relationship. So our answer is (a).

Ex.3 Which of the following diagrams correctly represents the relationship among Smokers, Bidi smokers, Cancer patients.

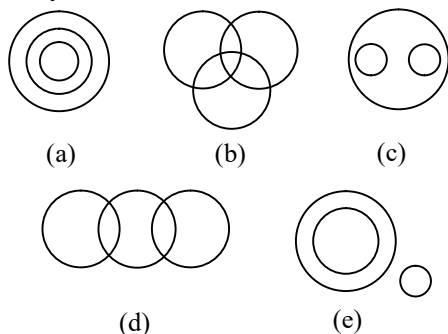


Sol. Bidi smokers is a subset of Smokers and Cancer patient may be a smoker, bidi smoker and non-smoker. Hence, third object shares a common relationship with first and second object as well. Hence, diagram (b) is our answer.

EXERCISE

Directions :

Out of the four alternatives in each of the following questions, three alternatives are such that the three words in each are related among themselves in one of the five ways represented by (a), (b), (c), (d) and (e) below. And one of the alternative represents a relationship which is not represented by any of the figures given below. The relationship that complies this condition is your answer.

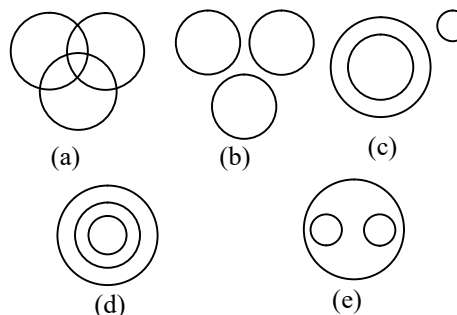


- Q.1** (A) Army, General, Colonel
(B) Boy, Student, Player
(C) Painter, Scholar, Table
(D) Man, Typist, Peon
- Q.2** (A) Hen, Dog, Cat
(B) Body, Ear, Mouth
(C) Bed, Ward, Nurse
(D) Tiger, Animal, Carnivorous.
- Q.3** (A) Mineral, Iron, Copper
(B) Dean, Painter, Singer
(C) Seed, Leaf, Root
(D) Piston, Engine, Wheel
- Q.4** (A) Director, Engineer, Musician
(B) Apple, Orange, Mango
(C) Fruit, Mango, Grass
(D) Oxygen, Air, Water
- Q.5** (A) Bed, Ward, Hospital
(B) Boy, Girl, Player
(C) Copper, Zinc, Iron
(D) Book, Page, paragraph
- Q.6** (A) Atmosphere, Air, Oxygen
(B) Boy, Girl, Student
(C) Man, Worker, Garden
(D) Animal, Dog, Cat

- Q.7** (A) Body, Hand, Finger
(B) Mammal, Nurse, Woman
(C) Cereal, Wheat, Rice
(D) Males, Cousins, Nephews
- Q.8** (A) Star, Moon, Mars
(B) Professor, Scholar, Politician
(C) Nurse, Doctor, Woman
(D) Swimmer, Carpenter, Singer
- Q.9** (A) Animal, Mammal, Book
(B) Colour, Cloth, Merchant
(C) Colour, Red, Blue
(D) Male, Horse, Mare
- Q.10** (A) Periodicals, Weekly, Book
(B) Mineral, Copper, Wood
(C) Doctors, Human beings, Married People
(D) Army, Doctors, Engineers

Directions :

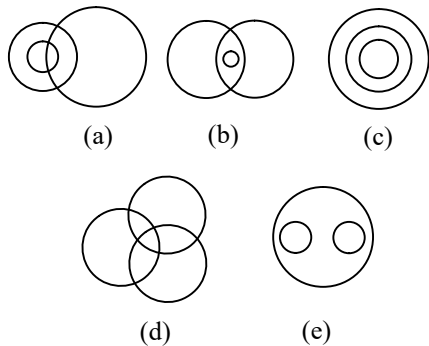
Each question below contains three groups of things. You are to choose from the following five numbered diagrams, the diagram that depicts the correct relationship among the three groups of things in each question.



- Q.11** Vegetable, Fruit, Brinjal
(A) a (B) b (C) c (D) d
- Q.12** Door, Window, House
(A) a (B) b (C) e (D) d
- Q.13** Honest, Intelligent, Poor
(A) a (B) b (C) c (D) d
- Q.14** Car, Train, automobile
(A) a (B) b (C) c (D) d
- Q.15** Zinc, Copper, Iron
(A) a (B) b (C) c (D) d

Directions :

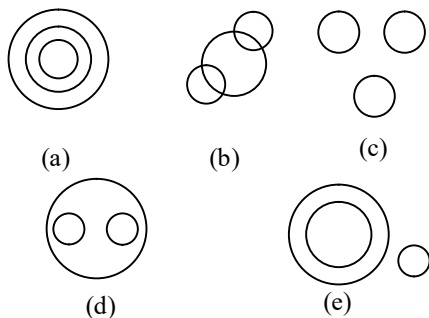
Each question below has three items having certain relationship among them. The same relationship is expressed by sets of circles, each circle representing one item irrespective of its size. Match the items with right set of circles.



- Q.16** Revers, Canals, Perennial source of water.
(A) a (B) e (C) c (D) d
- Q.17** Rings, Ornaments, Diamond rings.
(A) c (B) b (C) a (D) d
- Q.18** Women, Married persons, Wives who work.
(A) a (B) c (C) d (D) b
- Q.19** Computer skille, Graduates, Employed.
(A) a (B) d (C) b (D) e
- Q.20** Students, First divisioners, Third divisioners.
(A) b (B) c (C) d (D) e

Directions :

Each of the questions given below contains three groups of things. You have to choose from the following five numbered diagramas, the diagram that depicts the correct relationship among the three groups of things in each question.

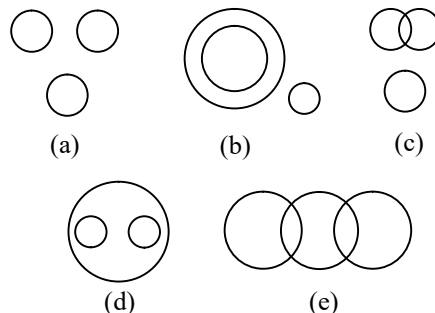


- Q.21** Pop, Songs, Classical
(A) c (B) e (C) d (D) a

- Q.22** Maize, Sugarcane, Crops
(A) a (B) b (C) c (D) d
- Q.23** Birds, Owls, Elephants
(A) a (B) b (C) e (D) d
- Q.24** Apples, Mangoes, Oranges
(A) a (B) b (C) c (D) d
- Q.25** Asia, Delhi, India
(A) a (B) b (C) c (D) d
- Q.26** Lawyers, Women, Doctors
(A) a (B) b (C) c (D) d
- Q.27** Brinjal, Glass, Spoon
(A) a (B) b (C) c (D) d
- Q.28** Pen, Stationery, Powder
(A) a (B) b (C) e (D) d
- Q.29** Vehicle, Car, Jeep
(A) a (B) b (C) c (D) d
- Q.30** Year, Month, Day
(A) a (B) b (C) c (D) d

Directions :

In each of the following questions, select the diagram out of the five that best represents the relationship among the items given in the question.

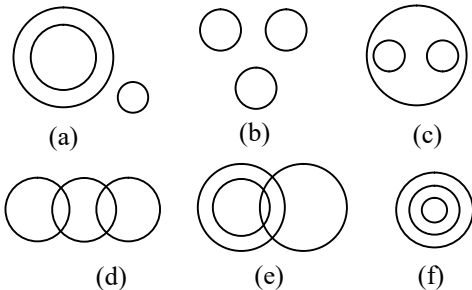


- Q.31** Book, Novel, Pen
(A) a (B) b (C) c (D) d
- Q.32** Police, Doctor, Female
(A) e (B) b (C) c (D) d
- Q.33** Mammal, Cow, Man
(A) a (B) b (C) c (D) d
- Q.34** Horse, Hen, Animal
(A) a (B) b (C) c (D) d

- Q.35** Woman, Wife, Daughter
(A) a (B) b (C) c (D) d
- Q.36** Medicine, Male, Surgeon
(A) a (B) b (C) c (D) d
- Q.37** Keyboard, Monitor, Mouse
(A) a (B) b (C) c (D) d
- Q.38** Educated persons, Engineers, Doctors
(A) a (B) b (C) c (D) d
- Q.39** Women, Teachers, Doctors
(A) a (B) b (C) c (D) d
- Q.40** Girls, Healthy, Health Club
(A) a (B) b (C) c (D) d

Directions :

Each of the following questions has three items which are represented below by circles, irrespectively of their size. Your task is to match the right set of items with the right set of circles on the basis of their relationship.

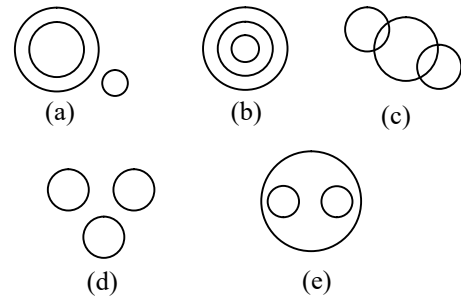


- Q.41** Oxygen, Atmosphere, Nitrogen
(A) b (B) a (C) e (D) f
- Q.42** Water, Nitrogen, Hydrogen
(A) b (B) c (C) a (D) f
- Q.43** Kitchen, Clean, Hotel
(A) e (B) d (C) a (D) b
- Q.44** Cloud, River, Mountain
(A) c (B) b (C) f (D) a
- Q.45** Sentence, Word, Letter
(A) f (B) c (C) e (D) b
- Q.46** Boys, College, Infants
(A) a (B) c (C) e (D) b
- Q.47** Clock, Dial, Stereo
(A) a (B) b (C) c (D) d

- Q.48** Vegetable, Potato, Rotten
(A) c (B) b (C) d (D) e
- Q.49** Mother, Fatty, Fathers
(A) a (B) b (C) c (D) d
- Q.50** Shell, Apple, Nut
(A) a (B) b (C) c (D) d

Directions :

Each of the questions below contains three elements. These elements may or may not have some relation with one another. Each group of the elements may fit into one of the diagrams, a, b, c, d, and e. You have to indicate, which group of elements in each of the questions correctly fits into which of the diagram,

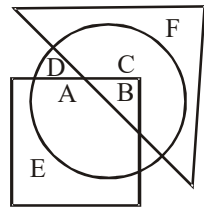


- Q.51** Universe, Earth, Europe.
(A) a (B) b (C) c (D) d
- Q.52** Picture, T.V. , Radio.
(A) a (B) b (C) c (D) d
- Q.53** Living beings, AnimAls, Men.
(A) a (B) b (C) c (D) e
- Q.54** Radio, T.V., CinemA-hall.
(A) a (B) b (C) c (D) d
- Q.55** Residence,Resident, Road.
(A) a (B) b (C) c (D) d
- Q.56** Copy, Stationery, Car.
(A) a (B) b (C) c (D) d
- Q.57** Coal mines, Factory, Field.
(A) a (B) b (C) c (D) e
- Q.58** Clothes, Sari, Dhoti.
(A) a (B) b (C) c (D) e
- Q.59** Chapter, Book, Topic.
(A) a (B) b (C) c (D) d

Q.60 Boys, Class, Girls.

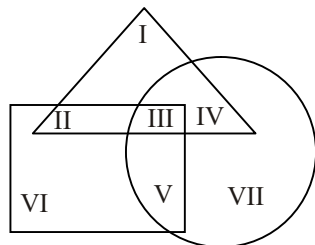
- (A) a (B) b (C) c (D) e

Q.61 Which one of the following statements is correct with regard to the given figure ?



- (A) A and B are in all the three shapes.
 (B) E, A, B, C are in all the three shapes.
 (C) F, C, D, B, A are in all the three shapes
 (D) Only B is in all the three shapes.

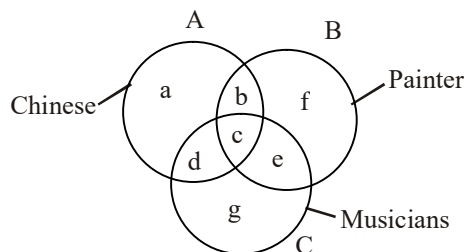
Q.62 The triangle, Square and circle shown below respectively represent the urban, hard working and educated people. Which one of the areas marked I-VII is represented by the urban educated people who are not hard working ?



- (A) II (B) I (C) IV (D) III

Directions :

In the figure given below, there are three intersecting circles each representing certain section of people. Different regions are marked a to g. Read the statements in each of the following questions and choose the letter of the region which correctly represents the statement.



Q.63 Chinese who are painters but not musicians.

- (A) b (B) c (C) d (D) g

Q.64 Painters who are neither Chinese nor musicians.

- (A) b (B) c (C) f (D) g

Q.65 Chinese who are musicians but not painters.

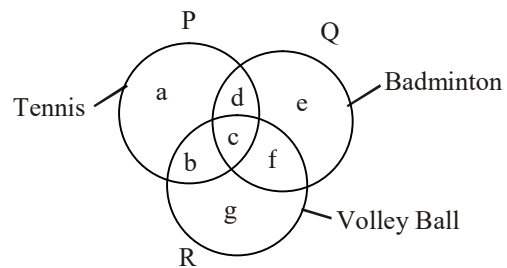
- (A) d (B) c (C) b (D) a

Q.66 Chinese who are painters as well as musicians.

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

Directions :

The figure given below consists of three intersecting circles which represent sets of students who play Tennis, Badminton and Volley Ball. Each region in the figure is represented by a small letter.



On the basis of the above figure, answer the questions given below.

Q.67 Which letter represents the set of persons who play all the three games ?

- (A) b (B) c (C) f (D) g

Q.68 Which letter represents the set of persons who play Tennis and Volley Ball but no Badminton?

- (A) g (B) e (C) c (D) b

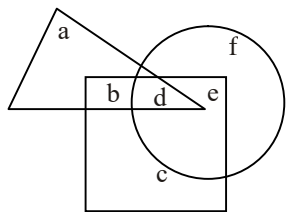
Q.69 Which letter represents the set of persons who play Tennis but neither Bad minton nor Volley Ball ?

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

Q.70 Which letter represents the set of persons who play Tennis and Badminton but not Volley Ball?

- (A) b (B) c (C) d (D) f

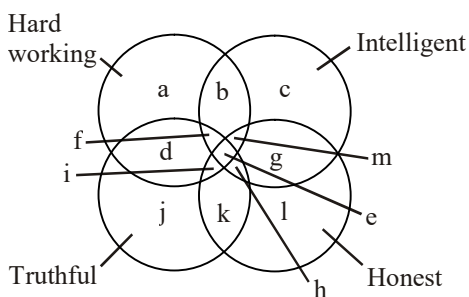
- Q.71** In the given figure, the triangle represents girls, the square represents sports persons and the circle represents coaches. The portion in the figure which represents girls, who are sports persons but not coaches is the one labelled



- (A) a (B) b (C) d (D) e

Direction :

Below is given a figure with four intersecting circles, each representing a group of persons having the quality written against it. Study the figure carefully and answer the questions that follow.

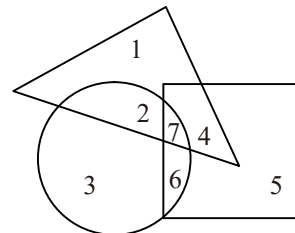


- Q.72** The region which represents the people who are intelligent, honest and truthful but not hard working is denoted by
(A) e (B) f (C) h (D) i
- Q.73** The people possessing all the qualities are represented by
(A) i (B) h (C) f (D) e
- Q.74** The region which represents people who are not honest but possess all other three qualities, is denoted by
(A) b (B) d (C) f (D) i
- Q.75** People who are not hard working, intelligent and truthful are represented by
(A) g (B) h (C) k (D) L

- Q.76** People who are not honest and truthful but are hard working and intelligent both, are represented by

- (A) e (B) b (C) m (D) i

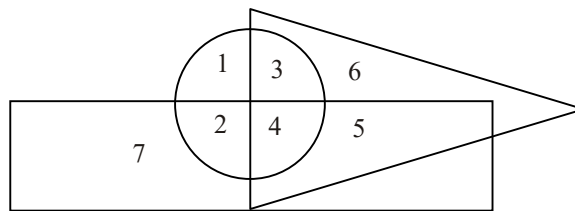
- Q.77** If Tall is equivalent to circle, Armymen to triangle and Strong to square, indicate which number will represent strong armymen ?



- (A) 3 (B) 4
(C) 5 (D) 6

Direction :

In the figure given below, the circle represents young persons, the triangle represents uneducated persons and the rectangle represents employed persons.

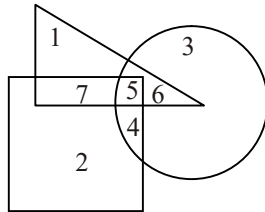


Study the figure carefully and answer the questions given below.

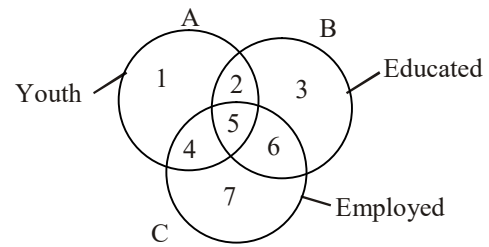
- Q.78** Which region represents young, uneducated and employed persons ?
(A) 6 (B) 5 (C) 4 (D) 3
- Q.79** The region which represents educated, employed young persons, is denoted by
(A) 2 (B) 3 (C) 4 (D) 5
- Q.80** Which region represents young, educated and unemployed persons ?
(A) 7 (B) 4 (C) 1 (D) 5
- Q.81** Which region represents young, uneducated and unemployed persons ?
(A) 1 (B) 2 (C) 6 (D) 3

Directions :

The following questions are based on the diagram given below. In the diagram, the triangle stands for graduates, square stands for membership of professional organisations and the circle stands for membership of social organisations. Read each statements and find out the appropriate number(s) to represent the people covered by the the given statement.

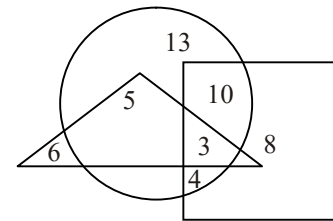


- Q.82** Number of graduates in social organisations
(A) 1 (B) 5 (C) 6 (D) 5 & 6
- Q.83** Number of graduates in social organisations only
(A) 3 (B) 4 (C) 5 (D) 6
- Q.84** Number of graduates in professional organisations
(A) 5 and 7 (B) 5, 6 and 7
(C) 6 and 7 (D) 4, 5 and 6
- Q.85** In the figure given below, triangle represents the women, rectangle represents the employed and circle represents the doctors, find out the area of the figure which represents women doctors who are not employed
-
- (A) 1 (B) 3
(C) 7 (D) 8
- Q.86** Study the diagram below and identify the region representing youth who are employed but not educated.



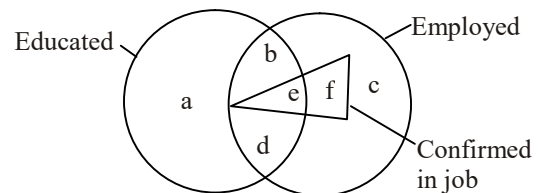
- (A) 4 only (B) 1, 4, 7
(C) 4, 7 (D) 4, 5, 6

- Q.87** In the following diagram, parallelogram represents women, triangle represents sub-inspectors of police and circle represents graduates. Which numbered area represents women graduate sub-inspectors of police ?



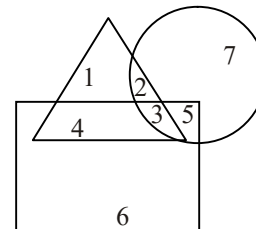
- (A) 5 (B) 3 (C) 8 (D) 13

- Q.88** Read the figure and find the region representing persons who are educated and employed but not confirmed.



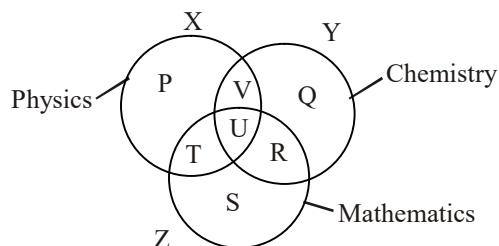
- (A) a, c (B) a, b, c
(C) b, d (D) a, d, c

- Q.89** In the figure given below, triangle represents the healthy, square represents the old and circle represents the men. Find out the area of the figure which represents the men who are healthy but not old ?



- (A) 1 (B) 2 (C) 3 (D) 7

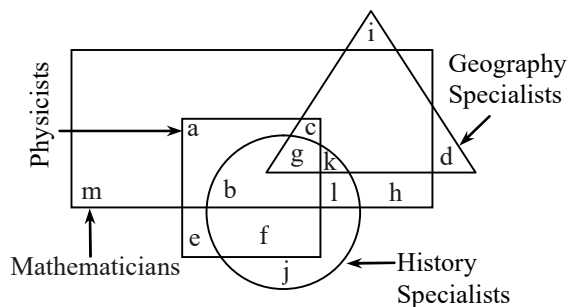
- Q.90** The diagram below represents the students who study Physics, Chemistry and Mathematics. Study the diagram and identify the region which represents the students who study physics and Mathematics but not Chemistry.



- (A) T (B) P + T + S
(C) V (D) P + T + S + R + U + V

Directions :

Each of the questions is based on the following diagram. In the diagram square represents Physicists, rectangle represents Mathematicians, Triangle represents Geography specialists while circle represents Historians.



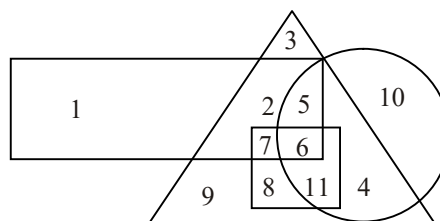
- Q.91** Which of the following Mathematicians are not History specialist ?
(A) a, m, h (B) a, m, c, h
(C) l, k, h (D) a, i, d
- Q.92** Which of the following are Geography or History specialists but not physicists ?
(A) c, g, k (B) k
(C) d, h (D) l, h, d
- Q.93** Which of the following are Mathematicians, Physicists as well as Geography specialists ?
(A) c, g (B) b, k, c
(C) a, k, h (D) l, h

- Q.94** Which of the following are Geography specialists, History specialist and Mathematicians ?

- (A) c, i (B) g, c
(C) m, h (D) g, k

Directions :

The following questions are based on the diagram given below :

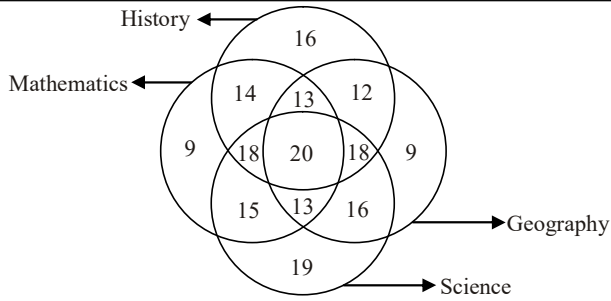


- (1) The rectangle represents government employees
(2) The triangle represents urban people
(3) The circle represents graduates
(4) The square represents clerks

- Q.95** Which of the following statements is true ?
(A) All government employees are clerks
(B) Some government employees are graduates as well as clerks
(C) All government employees are graduates
(D) All clerks are government employees but not graduates
- Q.96** Which of the following statements is true ?
(A) All urban people are graduates
(B) Some clerks are government employees but not urban
(C) All government employees are clerks
(D) Some urban people are not graduates
- Q.97** Choose the correct statement :
(A) Some clerks are government employees
(B) No clerk is urban
(C) All graduates are urban
(D) All graduates are government employees

Directions :

Refer to the following diagram :



Q.98 The number of students who took any three of the four subjects

- (A) 64 (B) 62
(C) 61 (D) 65

Q.99 The number of students in total who took History or Mathematics or Science was

- (A) 163 (B) 480
(C) 262 (D) 340

Q.100 The number of students who took both History and Geography among other subjects was

- (A) 60 (B) 65
(C) 66 (D) 62

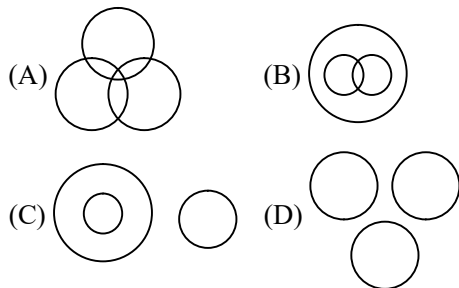
Q.101 Which subject was taken by the largest number of students ?

- (A) Science (B) History
(C) Geography (D) Mathematics

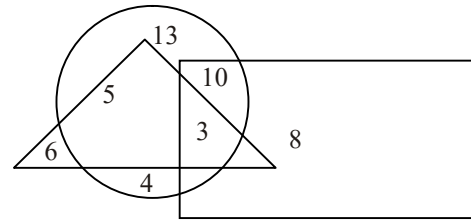
Directions :

In each of the following questions, find out which of the alternatives (A), (B), (C) or (D) indicates the correct relationship between the three given words ?

Q.102 Triangle, Four-sided figure, Square



Q.103 In the following diagram rectangle represents women, triangle represents Sub. Inspector of Police and circle represents graduates. Which numbered represents women graduate Sub. Inspector of Police ?



- (A) 5 (B) 13 (C) 8 (D) 3

[illegible]