

# National Level Science Talent Search Examination - 2013

**Class : V**

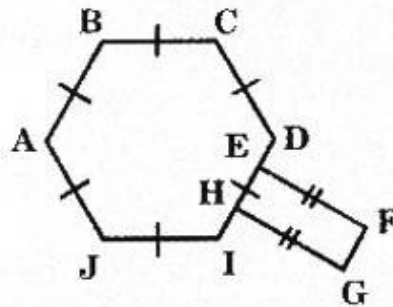
**Mathematics**

- 1** Identify the missing number.

$$200 \times 75 = 25 \times \boxed{?} \times 4 \times 3$$

- (A) 12      (B) 50      (C) 300      (D) 15000

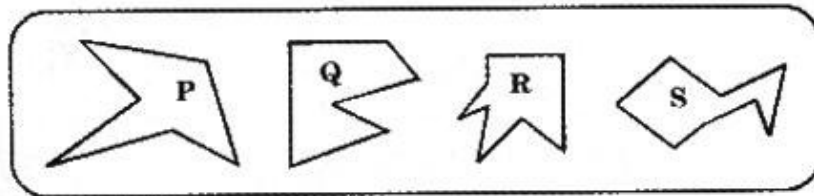
- 2** Observe the given figure.



How many pairs of parallel lines have the same length?

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

- 3** In which of the following figures is the number of angles that are smaller than a right angle the same as the number of angles that are greater than a right angle?



- (A) P and S    (B) Q and S    (C) P and R    (D) R and S

- 4** The value of digit '3' in 239766 is how many times as much as the value of digit 6 in 45655?

- (A) 10      (B) 50      (C) 500      (D) 1000

5

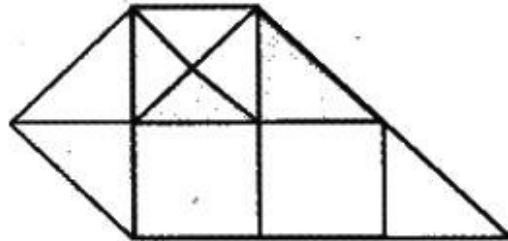
What is the missing fraction in the box?

$$2 \times \boxed{?} = \frac{2}{5} \div 13$$

- (A)  $\frac{1}{15}$       (B)  $\frac{3}{35}$       (C)  $\frac{1}{65}$       (D)  $\frac{1}{2}$

6

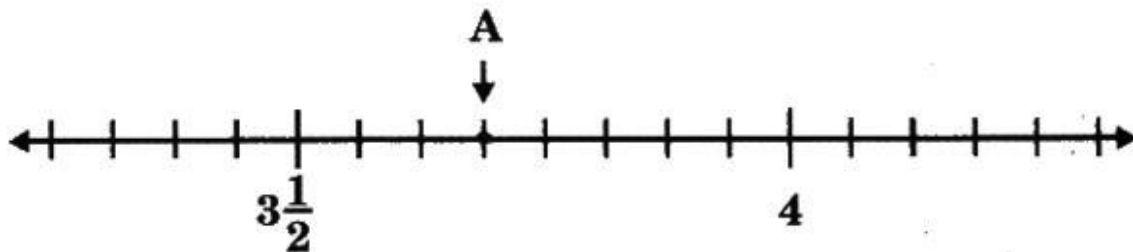
Identify the decimal equivalent of the area of the shaded region.



- (A) 0.1      (B) 0.15      (C) 0.2      (D) 0.3

7

What is the number representing the point A?



- (A)  $3\frac{3}{8}$       (B)  $3\frac{11}{16}$       (C)  $3\frac{7}{8}$       (D)  $4\frac{5}{8}$

8

Identify the fraction equal to the decimal number 0.375.

- (A)  $\frac{3}{10}$       (B)  $\frac{3}{8}$       (C)  $\frac{3}{7}$       (D)  $\frac{3}{4}$

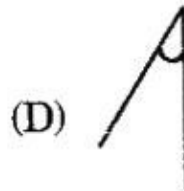
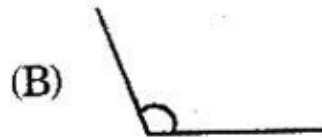
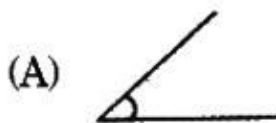
9

I am greater than 50 but smaller than 75. I am a multiple of 6. When I am divided by 9, the remainder is 3. Which number am I?

- (A) 60      (B) 72      (C) 68      (D) 66

10

Identify the smallest angle.



11

Arrange the digits 3, 5, 9, 7, 2 and 6 to form the smallest possible 6 - digit number. In which place is the digit 6?

(A) Hundreds

(B) Thousands

(C) Ten thousands

(D) Hundred thousands

12

Identify the missing number.

$$93.528 = 90 + 3 + \frac{5}{10} + \frac{1}{50} + \boxed{?}$$

(A)  $\frac{1}{125}$

(B)  $\frac{2}{25}$

(C)  $\frac{8}{10}$

(D) 8

13

Identify the missing number.

$$\boxed{7 \text{ ? } 5} \times 3 = 2385$$

(A) 7

(B) 2

(C) 9

(D) 5

14

Jack is 33 years old. Jill is 7 years younger than Jack. Find their total age in 18 years time.

(A) 77 years

(B) 95 years

(C) 74 years

(D) 86 years

15

The area of a wooden plank approximated to 3 significant figures is 34300 sq. m. While making its sides and corners

smooth,  $\frac{3}{13}$  of it is wasted. What is the largest area (in sq. m) of the remaining plank correct to 2 places of decimal?

(A) 26384.62

(B) 26422.31

(C) 7926.69

(D) 7915.39

16 Find the value of  $\frac{\left(\frac{1}{2} + \frac{1}{3}\right)}{\left(\frac{1}{4} + \frac{2}{5}\right)}$ .

- (A)  $\frac{6}{17}$       (B)  $\frac{50}{39}$       (C)  $\frac{12}{35}$       (D)  $\frac{22}{29}$

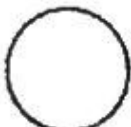


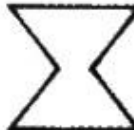
17 Which of the following is the smallest number divisible by 9 different prime numbers?

- (A) 111500000      (B) 203693490000  
(C) 223092870      (D) 3011

18 Which of the following is arranged in descending order?

- (A) 3.84, 6.70, 7.19, 3.08      (B) 9.65, 8.298, 5.97, 0.23  
(C) 0.26, 4.91, 0.462, 9.58      (D) 2.5, 5.40, 6.2, 8.546

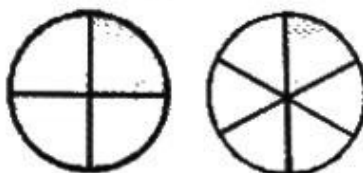
19 Which one of the following has only 1 line of symmetry?

- (A)  (B)  (C)  (D) 

20 Arun can type 60 words in 3 minutes. At this rate, how many words can he type in 1 hour?

- (A) 3600      (B) 1200      (C) 180      (D) 120

21 Mom bought two identical pizzas and cut each pizza into a different number of equal pieces as shown in the figure. She gave David one piece from each pizza. What fraction of the pizza did David receive?



- (A)  $\frac{1}{5}$       (B)  $\frac{1}{10}$       (C)  $\frac{5}{12}$       (D)  $\frac{5}{24}$

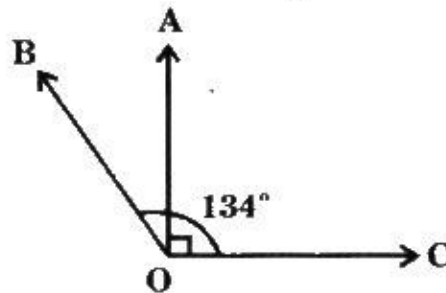
22

A group of children share a pack of pencils. If each child takes 3 pencils, there will be 20 pencils left. If each child takes 4 pencils, there will be no pencil left. How many pencils are there in the pack?

- (A) 40      (B) 60      (C) 80      (D) 120

23

Find the measure of  $\angle AOB$  in the figure given.



- (A)  $90^\circ$       (B)  $44^\circ$       (C)  $224^\circ$       (D)  $134^\circ$

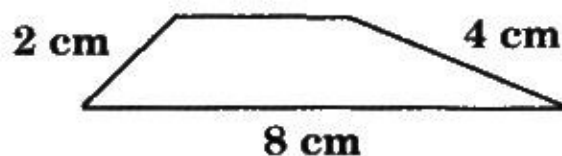
24

How many pair(s) of parallel lines does a rectangle have?

- (A) 1      (B) 2      (C) 3      (D) 4

25

The perimeter of the given figure is 19 cm.

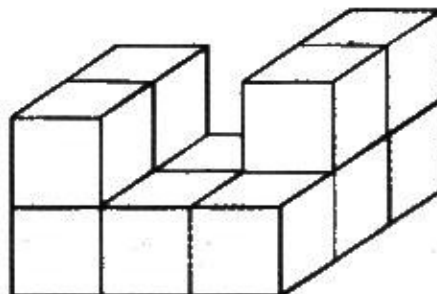


Find the missing length of one of its sides.

- (A) 4 cm      (B) 3 cm      (C) 5 cm      (D) 7 cm

26

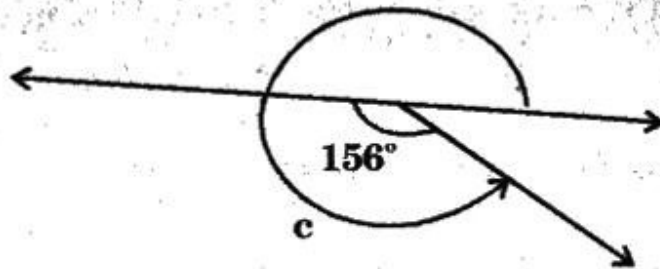
The solid in the given figure is made up of 2 cm cubes.



What is the volume of the solid?

- (A)  $22 \text{ cm}^3$       (B)  $72 \text{ cm}^3$       (C)  $80 \text{ cm}^3$       (D)  $88 \text{ cm}^3$

27 Identify the measure of the angle 'c' in the figure given.



- (A)  $360^\circ - 25^\circ$  (B)  $180^\circ + 156^\circ$   
(C)  $360^\circ + 156^\circ$  (D)  $180^\circ - 156^\circ$

28 Find the difference between  $\frac{3}{4}$  of 9000 and  $\frac{2}{3}$  of 900.

- (A) 5325 (B) 6075 (C) 6150 (D) 8100

29 John ran a total of 7 km 70 m in 2 weeks. What was the average distance he ran in 1 day?

- (A) 5 m (B) 50 m (C) 55 m (D) 505 m

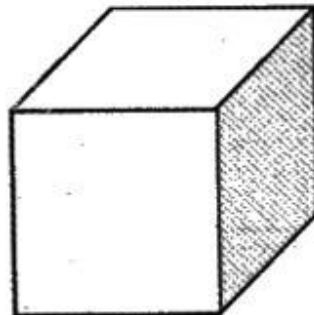
30 In 243.649, the value of 4 in the tens place is how many times the value of 4 in the hundredths place?

- (A) 10 (B) 100 (C) 1000 (D) 10,000

31 Varsha pours  $\frac{4}{5}$  l of syrup equally into 8 bottles. How much syrup is there in 1 bottle?

- (A)  $\frac{1}{4}$  l (B)  $\frac{1}{5}$  l (C)  $\frac{1}{8}$  l (D)  $\frac{1}{10}$  l

32 The shaded area of the cube given is  $36 \text{ cm}^2$ .



What is its volume?

- (A)  $72 \text{ cm}^3$  (B)  $216 \text{ cm}^3$  (C)  $36 \text{ cm}^3$  (D)  $94 \text{ cm}^3$

- 33 A wheel covers a distance of 22.5 m when it makes 15 turns. If it makes 45 turns, what distance does it cover?  
(A) 45 m (B) 66 m (C) 67.5 m (D) 52.5 m

- 34 A bag holds 12.4 kg of biscuits. How many packets can be filled from  $2\frac{1}{2}$  such bags if each packet weighs 62 g?  
(A) 300 (B) 375 (C) 275 (D) 500

- 35 Which of the following is equal to  $\frac{1}{3}$ ?

(A)  $\frac{1}{6} + \frac{1}{6}$  (B)  $\frac{7}{12} - \frac{1}{6}$  (C)  $\frac{1}{2} \times \frac{1}{6}$  (D)  $\frac{5}{6} + \frac{2}{3}$

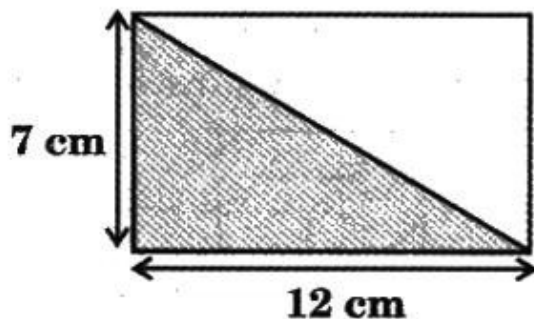
- 36 Mohan bought  $1\frac{2}{5}$  kg of grapes and  $2\frac{2}{3}$  kg of watermelon. How many kilograms of fruits did he buy?

(A)  $3\frac{6}{13}$  kg (B)  $3\frac{4}{15}$  kg  
(C)  $4\frac{1}{15}$  kg (D)  $4\frac{4}{15}$  kg

- 37 What must be added to 0.444 to get 1?

(A) 1.444 (B) 0.556 (C) 0.566 (D) 0.666

- 38 The figure given is a rectangle.



Find the area of the shaded region in the rectangle.

(A)  $28 \text{ cm}^2$  (B)  $38 \text{ cm}^2$  (C)  $42 \text{ cm}^2$  (D)  $84 \text{ cm}^2$

39

The population of a city is 51210913, out of which 2305218 were males, 1847525 were females and the remaining were children. What is the number of children in the city?

- (A) 47058170 (B) 55363656 (C) 50753220 (D) 51668606

40

Tarun counted to 60 using multiples of 6. Which statement is true about the numbers that Tarun counted?

- (A) They are all odd numbers.  
 (B) They all have 6 in the ones place.  
 (C) They can all be divided exactly by 3.  
 (D) They can all be divided exactly by 12.

41

What is the sum of the reciprocals of 7 and  $\frac{1}{9}$ ?

- (A)  $\frac{7}{64}$  (B) 16 (C)  $\frac{6}{67}$  (D)  $\frac{64}{7}$

42

If 0.111 is approximately equal to  $\frac{1}{9}$ , then what is the approximate value of 0.777?

- (A)  $\frac{5}{9}$  (B)  $\frac{7}{9}$  (C)  $\frac{2}{9}$  (D)  $\frac{1}{9}$

43

Find the value of  $\frac{17.28 + 12}{3.6 \times 0.2}$ .

- (A) 0.2 (B) 2 (C) 20 (D) 0.02

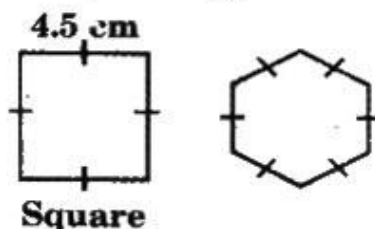
44

By how many times is the circumference of a circle always more than its diameter?

- (A) 6 times (B) 3 times (C) 10 times (D) 8 times

45

Maneesh is making a paper mobile. He draws and cuts out a square and a hexagon with the same perimeter.



How long is each side of the regular hexagon?

- (A) 3 cm (B) 6 cm (C) 18 cm (D) 27 cm



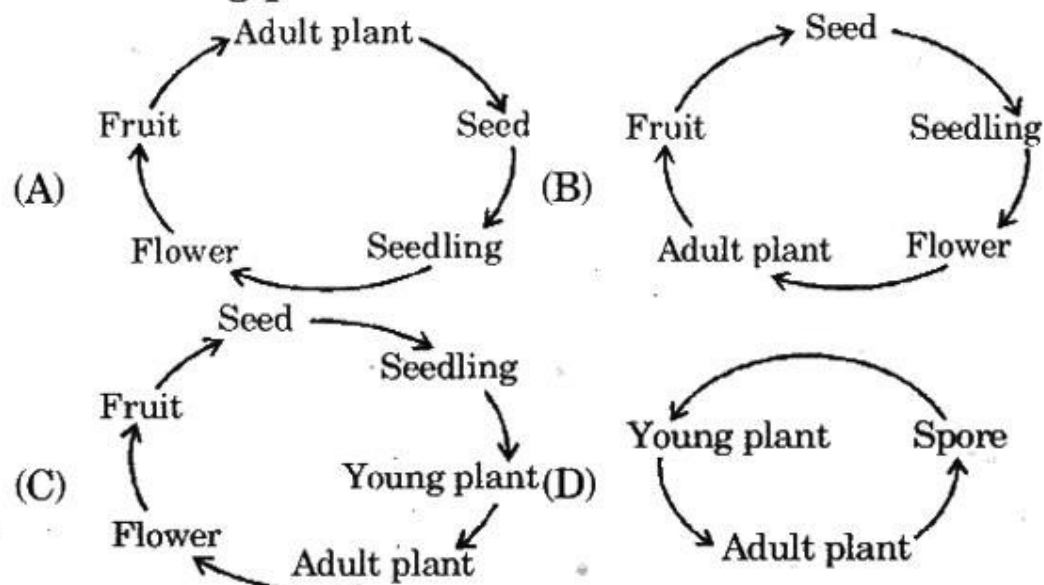
- 46 Anusha found a fruit in her garden. She examined it and recorded her observations as shown in the box.

It has a pod-like structure. It has many seeds that are small and light.  
When the seeds are ripe, the pod bursts open and the seeds are scattered away.

How is the fruit likely to be dispersed?

- (A) By birds (B) By water  
(C) By animals (D) Both by splitting and wind

- 47 Which of the following best describes the life cycle of a flowering plant?



- 48 Which of the following titles is the appropriate heading for column X?

Organism	X
P	Moist skin
Q	Spiracles and trachea
R	Gills and spiracles

- (A) Organs used in the digestion of food.  
(B) Organs used in transportation.  
(C) Sensory receptor organs.  
(D) Organs used in respiration.

49

The symptoms of a disease caused due to deficiency of a vitamin are given in the box.

- Bleeding of gums
- Swelling of joints
- Wounds that do not heal

Identify the vitamin.

(A) Vitamin A (B) Vitamin B (C) Vitamin C (D) Vitamin D

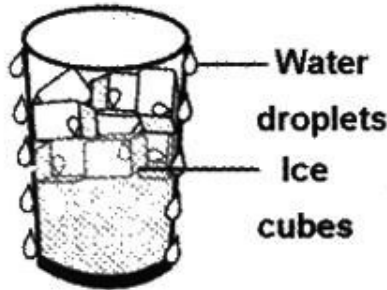
50

Which of the following moves by curving and straightening its body?

(A) Insects (B) Turtles (C) Crocodiles (D) Snakes

51

A glass with ice cubes is shown here.



The formation of water droplets on the outer surface of the glass is due to

- (A) evaporation. (B) transpiration.  
(C) condensation. (D) sublimation.

52

Observe the given figure.



Which of the following helps the girl in sipping the drink from the bottle using a straw?

- (A) Bottle pressure (B) Air pressure  
(C) Liquid pressure (D) Chemical energy

53

Which of the following actions is a pull?

(A)



(B)



(C)



(D)



54

Which of these is a sedimentary rock?

(A) Granite

(B) Pumice

(C) Conglomerates

(D) Basalt

55

Which of the following is a method of soil conservation?

(A) Deforestation

(B) Overgrazing

(C) Ploughing

(D) Afforestation

56

Which of the following gases is used in fizzy drinks to get tingling taste?

(A) Oxygen

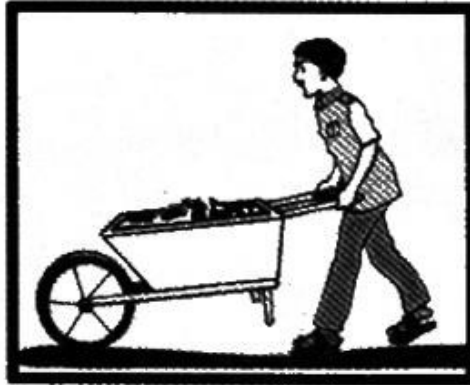
(B) Nitrogen

(C) Carbon dioxide

(D) Hydrogen

57

Which of the following tools are in the same class as the simple machine shown below?

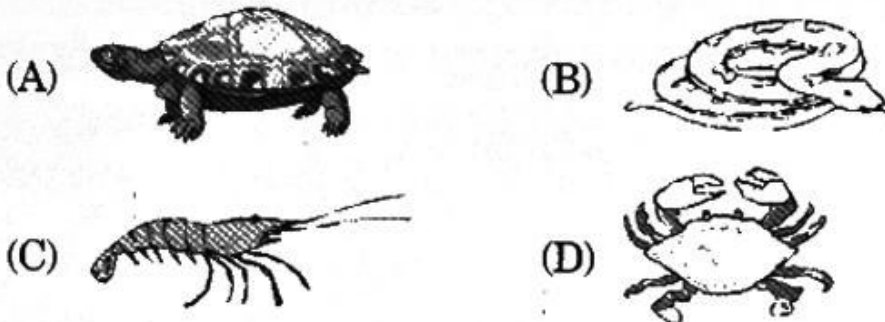


- (i) Ice tongs
- (ii) Paper cutters
- (iii) Bottle openers

- (A) Only (i) and (ii)
- (B) Only (i) and (iii)
- (C) Only (ii) and (iii)
- (D) (i), (ii) and (iii)

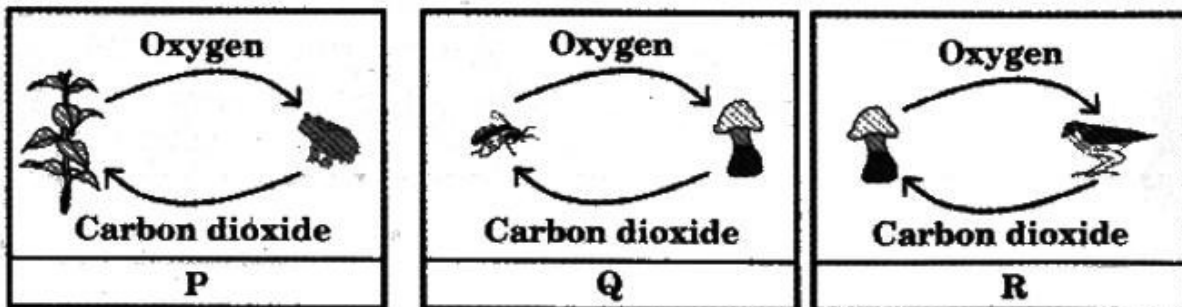
58

Which of the following has an adaptation for protection that is different from the rest?



59

Which of the following shows the correct flow of gases from one organism to the other?



- (A) Only P
- (B) Only Q and R
- (C) Only P and Q
- (D) P, Q and R

60

Sometimes, we find coconut trees on a deserted island. Which of these agents helped the coconut trees to grow there?

- (A) Wind (B) Water (C) Animals (D) Explosion

61

Study the given classification table.

Group - P	Group - Q
Potato	Rose
Ginger	Hibiscus
Onion	Sugarcane

According to which of the following are the given plants grouped?

- (A) The way they show movement.  
(B) The way they reproduce.  
(C) The way they make food.  
(D) Whether they flower or do not flower.

62

Which of the following is NOT a method used to remove insoluble impurities in water?

- (A) Sedimentation (B) Decantation  
(C) Filtration (D) Distillation

63

Identify the given figure.



- (A) A lever (B) A screw (C) A satellite (D) A pulley

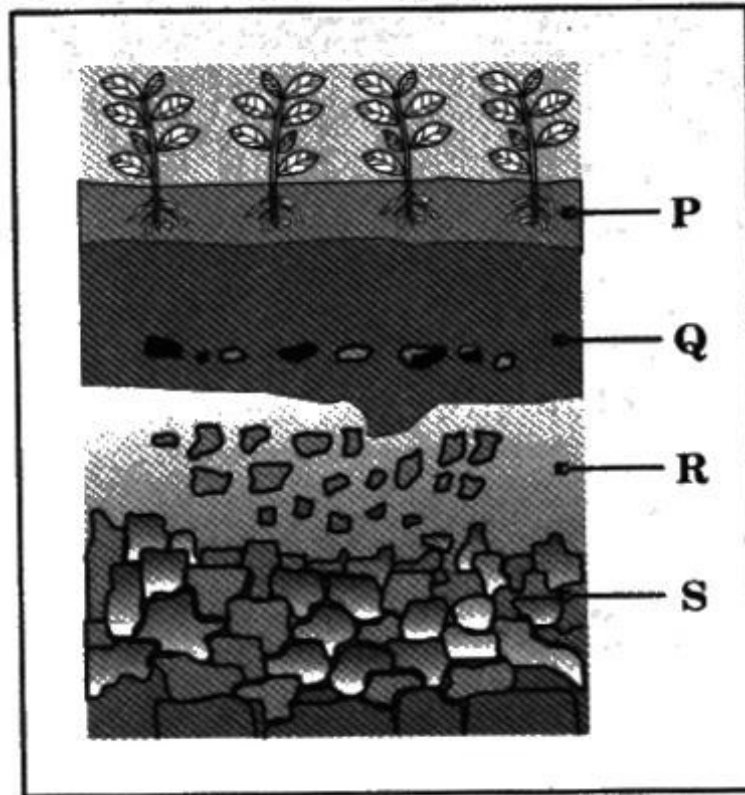
64

Which of the following is a rabi crop?

- (A) Mustard (B) Millets  
(C) Maize (D) Jowar

65

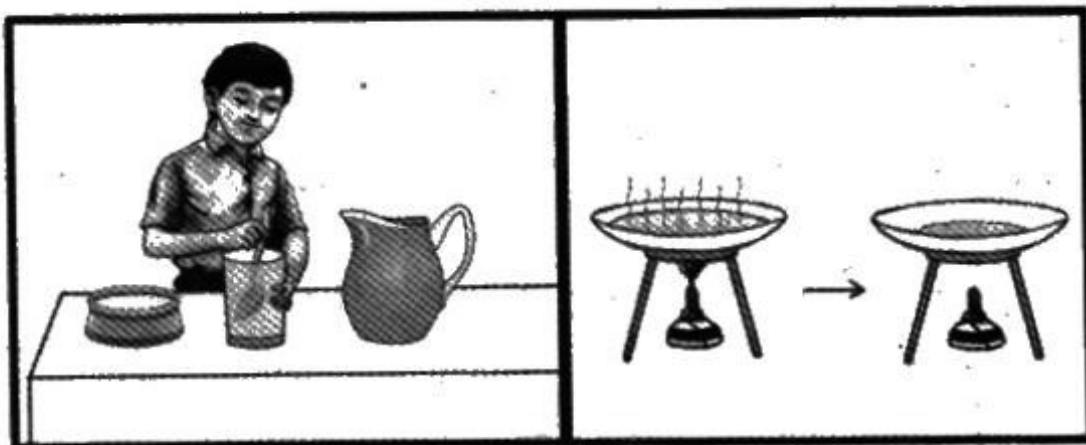
In the given figure of soil profile which layer is soft, light and more fertile?



- (A) P      (B) Q      (C) R      (D) S

66

In an activity, 20 gm of salt is dissolved in 70 ml of pure water. The water is then heated on a hot plate.

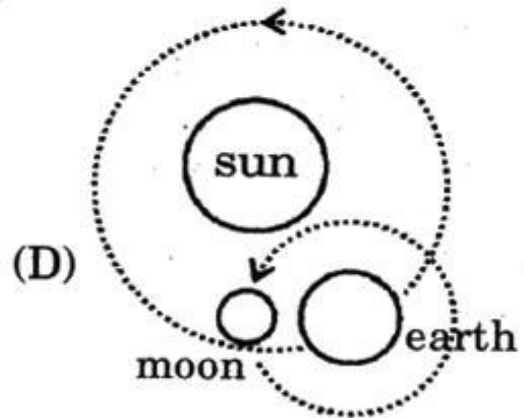
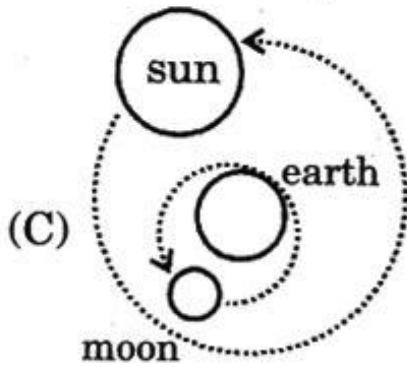
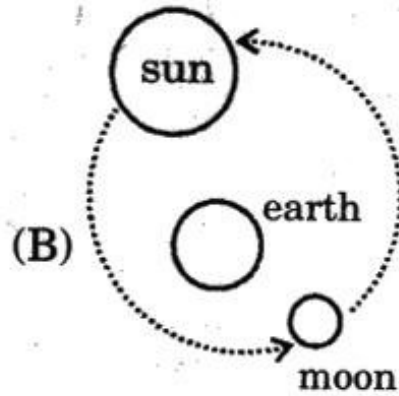
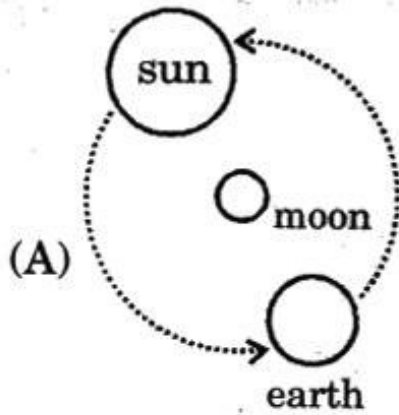


When water evaporates completely, how much salt will be left?

- (A) 0 gm      (B) 18 gm  
(C) 20 gm      (D) 22 gm

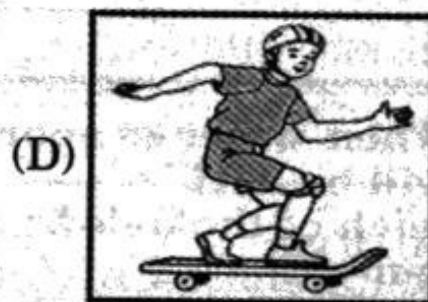
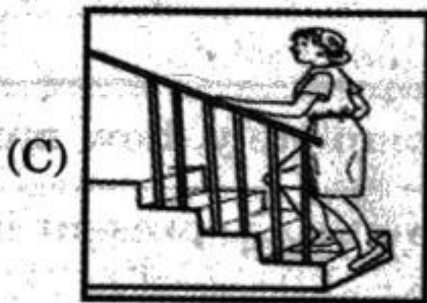
67

Which of these best shows the relationship between the earth, the moon and the sun?



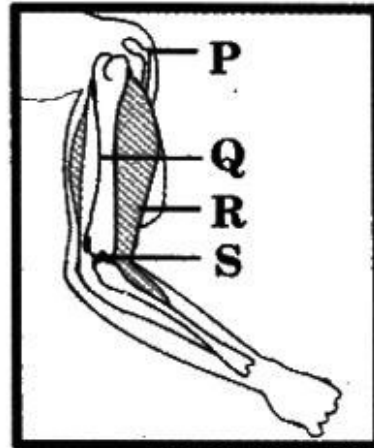
68

Which of these best shows wheels and axles being used?



69

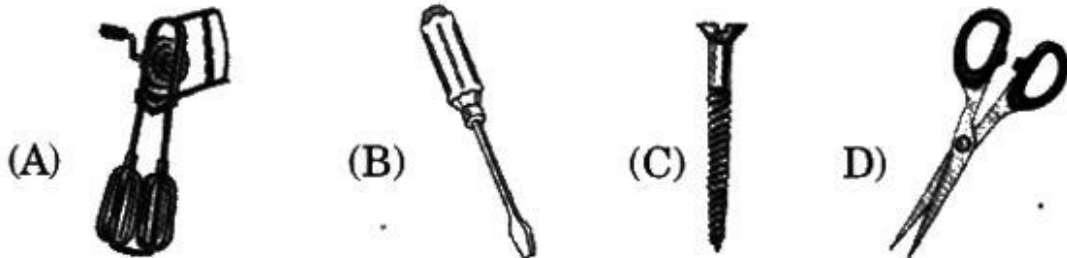
Which labelled structure in the upper arm is responsible for raising the lower arm?



- (A) P      (B) Q      (C) R      (D) S

70

Which of the following is an example of an inclined plane?



71

The chart given shows some food substances and the nutrients present in them.

Foods	Nutrients
Potato, Wheat, Rice	Carbohydrates
Ghee, Butter, Cheese, Cooking oils	Fats
Fish, Meat, Pulses, Soya bean, Milk	Proteins
Fruits, Vegetables	Minerals

Which of the following nutrients are present in soya bean?

- (A) Carbohydrates      (B) Proteins  
(C) Fats      (D) Minerals



72

Which one of the following body systems carries food and oxygen to all parts of the body and collects waste materials?

- (A) Digestive system      (B) Respiratory system  
(C) Circulatory system    (D) Excretory system

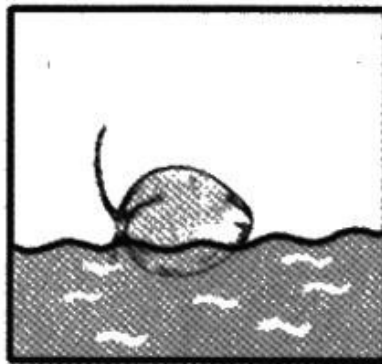
73

Which of the following life processes is seen only in animals and not in plants?

- (A) Reproduction      (B) Growth  
(C) Locomotion      (D) Nourishment

74

The given picture is a seed that gets dispersed by water.



Which of the following statements is true about such seeds?

- (A) They dry up so that they can explode and be carried away to far off places.  
(B) They are dry and have thorns and spikes on them.  
(C) They are dry and fluffy with either wings or hairs on them so that they can be carried away.  
(D) They are light and have covering that does not get soaked in water.

75

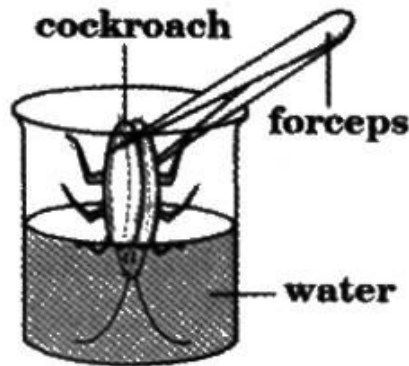
Which of the following parts of a human body works the same as does the figure given?



- (A) Shoulder      (B) Elbow  
(C) Neck      (D) Ankle

76

The figure given below shows a cockroach with its head held underwater. Even after 3 minutes the cockroach is found to be alive.



What enables the cockroach to be alive ?

- (A) It breathes with gills.
- (B) It can breathe under water.
- (C) It can breathe through the pores on its abdomen.
- (D) It can breathe with its skin.

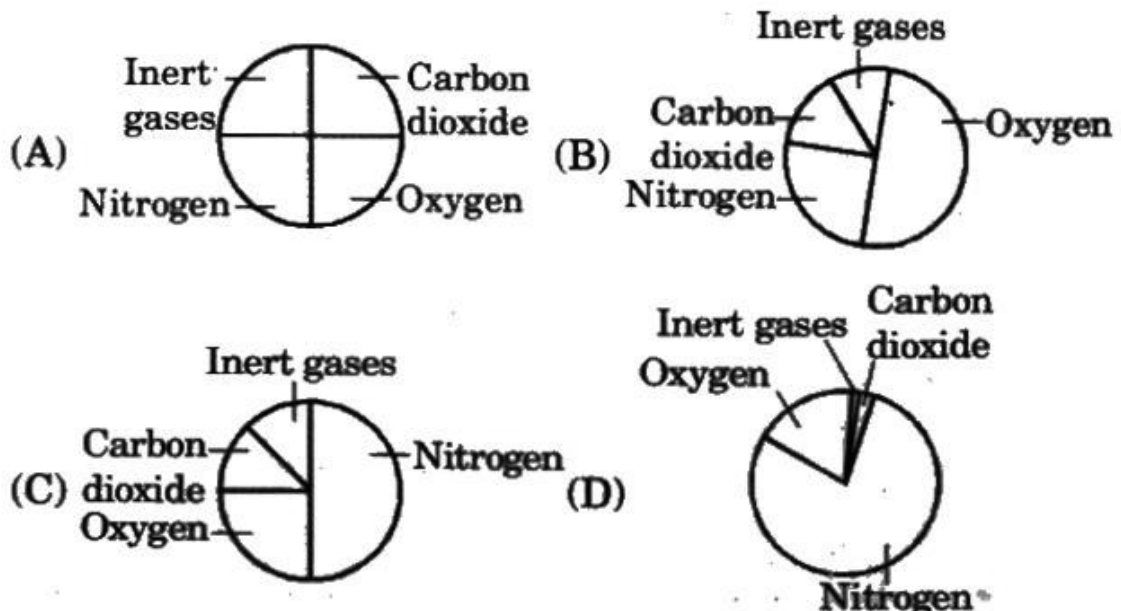
77

How does the arctic tern protect itself from extreme weather in winter?

- (A) By hibernating.
- (B) By burrowing.
- (C) By migrating to a warmer habitat.
- (D) By changing the colour of its feathers.

78

Which of the following pie charts shows the correct percentages of the composition of air?



79

**How soil is formed?**

- (A) When water is trapped underground.
- (B) When the remains of plants and animals decay and are trapped in between non-porous rock for millions of years.
- (C) When rocks and stones are weathered away by water, waves, heat, wind, rain and pressure.
- (D) Both (A) and (B)

80

**What enables the house lizard to walk upside down on ceiling?**

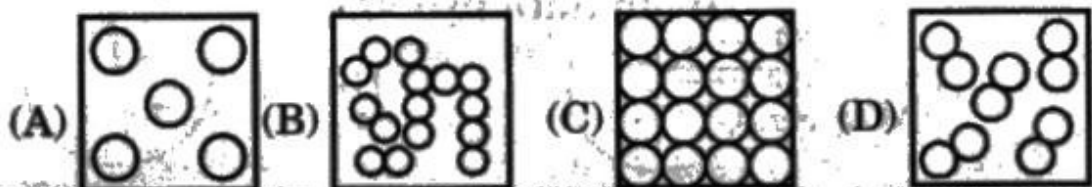


- (i) It has suction pads on its feet.
- (ii) It has sharp claws to cling onto the surfaces.
- (iii) It has a sticky substance on its body.

- (A) Only (i)
- (B) Only (ii)
- (C) Only (ii) and (iii)
- (D) All of the above

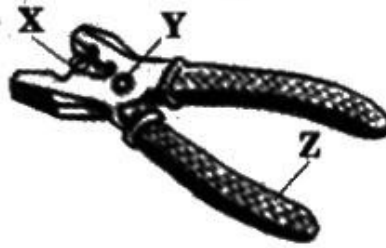
81

**Which of the following shows the arrangement of particles in an iron rod?**



82

The figure given shows pliers.



Which of the following represents X, Y and Z?

- (A) X - Load, Y - Effort, Z - Fulcrum
- (B) X - Load, Y - Fulcrum, Z - Effort
- (C) X - Effort, Y - Load, Z - Fulcrum
- (D) X - Fulcrum, Y - Effort, Z - Load

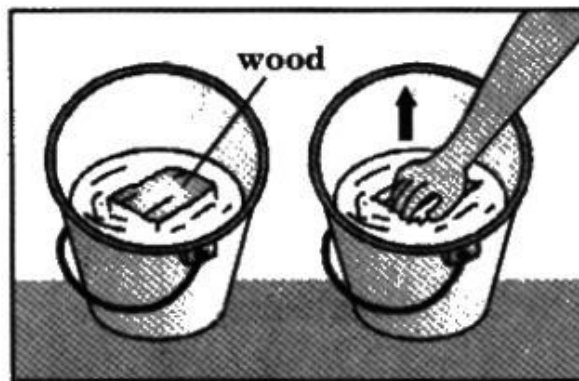
83

Which of the following requires the use of an ice pack?

- (A) Animal bites
- (B) Burns
- (C) Sprains
- (D) Cuts

84

Which of the following forces act on your hand and pushes it upwards when you push a block of wood in a bucket of water as shown in the given figure ?



- (A) Gravitational force
- (B) Frictional force
- (C) Buoyant force
- (D) Muscular force

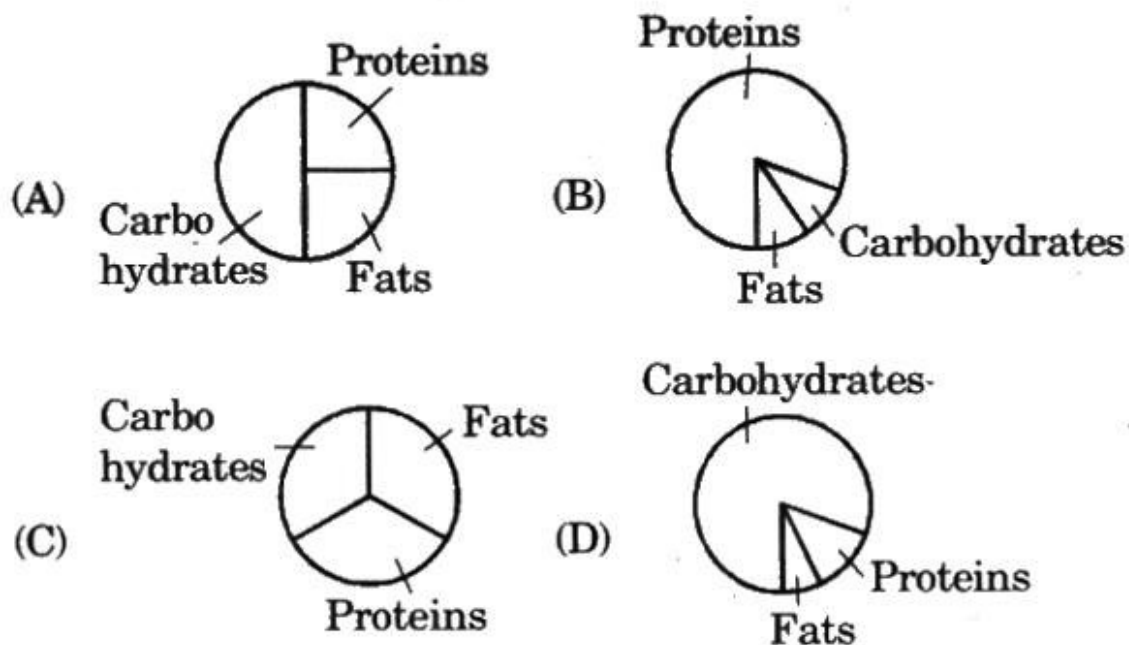
85

Which of these given in the box are uses of satellites ?

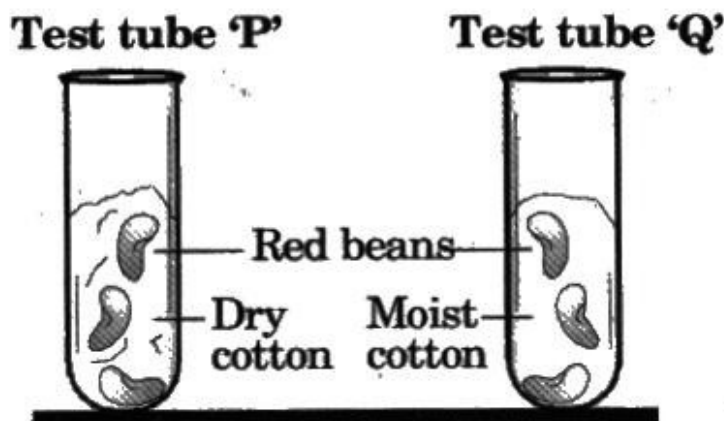
- I. In weather forecasting.
- II. In telecommunications.
- III. In data processing.

- (A) Only I and II
- (B) Only I and III
- (C) Only II and III
- (D) I, II and III

The pie charts given show the proportion of carbohydrates, proteins and fats in four different diets. Which of them shows a balanced diet?



The figure given shows two test tubes P and Q containing some red beans.



Which of the following will be observed in the two test tubes after one week?

- (A) Red beans in test tube P germinate.
- (B) Red beans in test tube Q germinate.
- (C) Red beans in both the test tubes germinate.
- (D) Red beans in both the test tubes do not germinate.

88

The information in the table given is about three animals.

Animal	Description
X	Body shape similar to a twig
Y	Body shape and colour similar to a leaf
Z	Body colour can be changed to match the surroundings

Identify X, Y and Z.

- (A) X - Stick insect, Y - Leaf insect, Z - Chameleon
- (B) X - Leaf insect, Y - Stick insect, Z - Chameleon
- (C) X - Chameleon, Y - Leaf insect, Z - Stick insect
- (D) X - Chameleon, Y - Stick insect, Z - Leaf insect

89

Which of the following statements about the moon is correct?

- (A) The moon is a planet.
- (B) The moon moves around the sun.
- (C) The moon gives off its own light.
- (D) The force of gravity on the moon is  $\frac{1}{6}$  of that on the earth.

90

The disease Goitre is caused due to the lack of a certain class of food. Which of the following types of food should be consumed to reduce the risk of goitre?



- 91 Which of the following is a channel exclusively meant for sports telecast?  
(A) Star sports (B) CNBC (C) BBC (D) Zee TV
- 92 Who plays the musical instrument santoor?  
(A) Ustad Bismillah Khan  
(B) Pandit Shivkumar Sharma  
(C) Pandit Hari Prasad Chaurasia  
(D) Pandit Ravi Shankar
- 93 Identify the metal used to make the body of an aeroplane.  
(A) Silver (B) Iron (C) Copper (D) Aluminium
- 94 Which sea animal produces pearls?  
(A) Sea anemone (B) Sea horse (C) Oyster (D) Octopus
- 95 Which book has news, stories, articles etc.?  
(A) A magazine (B) A scrap book (C) An atlas (D) A novel
- 96 What is the full form of 'CRY' ?  
(A) Children's Racing Years (B) Child Relief and You  
(C) China's Rising Youth (D) Christ's Resurrection Year
- 97 Of which Indian state is Dehradun the capital?  
(A) Chattisgarh (B) Jharkhand (C) Uttarakhand (D) Odisha
- 98 Why is the 'World Literacy Day' celebrated?  
(A) To show respect to our elders.  
(B) To realise the need of population control.  
(C) To pledge for the spread of literacy.  
(D) To bring awareness of issues concerning our earth.
- 99 Which of these planets is called the 'morning star'?  
(A) Mars (B) Jupiter (C) Earth (D) Mercury
- 100 Where are coins made?  
(A) Studio (B) Inn (C) Garage (D) Mint

●●● ————— **Key for NSTSE-2013** ————— ●●●

1. B	2. C	3. C	4. B	5. C	6. B	7. B	8. B	9. D	10. D
11. A	12. A	13. C	14. B	15. B	16. B	17. C	18. B	19. C	20. B
21. D	22. C	23. B	24. B	25. C	26. D	27. B	28. C	29. D	30. C
31. D	32. B	33. C	34. D	35. A	36. C	37. B	38. C	39. A	40. C
41. D	42. B	43. B	44. B	45. A	46. D	47. C	48. D	49. C	50. D
51. C	52. B	53. C	54. C	55. D	56. C	57. C	58. B	59. A	60. B
61. B	62. D	63. C	64. A	65. A	66. C	67. D	68. D	69. C	70. C
71. B	72. C	73. C	74. D	75. B	76. C	77. C	78. D	79. C	80. A
81. C	82. B	83. C	84. C	85. A	86. D	87. B	88. A	89. D	90. C
91. A	92. B	93. D	94. C	95. A	96. B	97. C	98. C	99. D	100. D