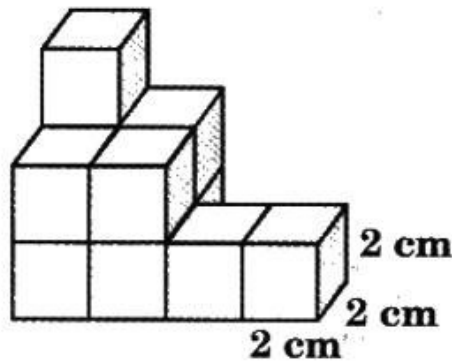


National Level Science Talent Search Examination - 2014

Class : V

Mathematics

- ➔ **1** What is the volume of the smallest number of cubes that must be added to make the given figure a cuboid?



- (A) 104 cm^3 (B) 64 cm^3
(C) 27 cm^3 (D) 13 cm^3

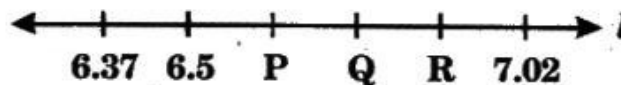
- ➔ **2** The time shown on the given clock face is 4 o'clock.



Through how many degrees will the hour hand move in 10 hours?

- (A) 360° (B) 300° (C) 340° (D) 345°

- ➔ **3** Study the decimal number line given.



What is the value of $P + Q - R$?

- (A) 5.59 (B) 6.47 (C) 6.5 (D) 20.27

4

Some Roman numerals are given in the box.

I, C, L, M, D

Which of the following is the number that can be written using all the given Roman numerals?

- (A) 1775 (B) 864 (C) 1947 (D) 1753

5

Which of the following is the product of $1\frac{1}{3}$, $3\frac{1}{4}$

and $\frac{7}{8}$?

- (A) $3\frac{5}{24}$ (B) $3\frac{19}{24}$ (C) $3\frac{1}{24}$ (D) $19\frac{3}{7}$

6

P is the least common multiple of 45 and 50. What is the value of $10P + 100$?

- (A) 4500 (B) 4600
(C) 4400 (D) 1000

7

Which of the following is the smallest possible decimal number of three decimal places?

- (A) 0.101 (B) 0.111
(C) 0.001 (D) 0.011

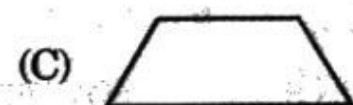
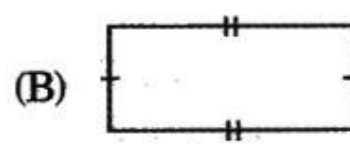
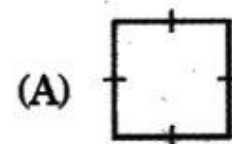
8

Identify the equivalent of 10 crores from the following.

- (A) 10 millions (B) 100 millions
(C) 1 million (D) 1000 millions

9

Identify the figure with only one pair of parallel lines.



10

27th February 2013 was a Wednesday. What day was 27th March, the same year?

- (A) Sunday (B) Wednesday
(C) Monday (D) Friday

11

Which of the following sets of numbers have the same H.C.F.?

60		120	135
650	230	180	315
250	450	240	495
P	Q	R	S

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

12

Vinod had $1\frac{1}{2}$ bags of chocolates. The full bag had 32 packets of chocolates in it with 10 chocolates in each packet. Which expression gives the total number of chocolates Vinod had?

- (A) $1\frac{1}{2} + 32 \times 10$ (B) $1\frac{1}{2} \times 32 + 10$
(C) $1\frac{1}{2} \times 32 \times 10$ (D) $1\frac{1}{2} (32 + 10)$

13

Study the Hindu-Arabic equivalents of the given Roman numbers.

- (i) DCLV = 655
(ii) XLVI = 46
(iii) MDCL = 1560

Which of the following is/are correct?

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

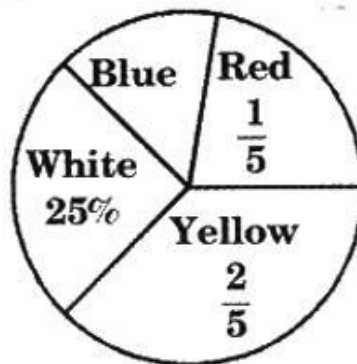
14 Mala and Bala got 75 marks and 25 marks respectively in an examination. Find the ratio of the marks scored by Mala to their total marks.

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

15 Leela made 17 sandwiches for her friends. If Leela had made 4 more sandwiches, she would have made exactly thrice as many sandwiches as Meena. How many sandwiches did Meena make?

- (A) 7 (B) 21 (C) 24 (D) 14

16 The pie-chart shows the number of different coloured T-shirts sold by Dinesh on a particular day.



If he sold 1400 yellow T-shirts on that day, how many blue T-shirts did he sell?

- (A) 1200 (B) 615 (C) 525 (D) 635

17 P is the largest factor of 48 and Q is its smallest multiple. Find the value of $2P + 3Q$.

- (A) 240 (B) 360 (C) 120 (D) 480

18 The capacity of a cylindrical tank is 32 l. It is $\frac{4}{5}$ full of water. A quarter of this volume of water is poured into a pail. How much water is left in the cylindrical tank?

- (A) $15\frac{1}{9}$ l (B) $19\frac{3}{5}$ l
(C) $19\frac{1}{5}$ l (D) $15\frac{3}{5}$ l

19

Observe the following.

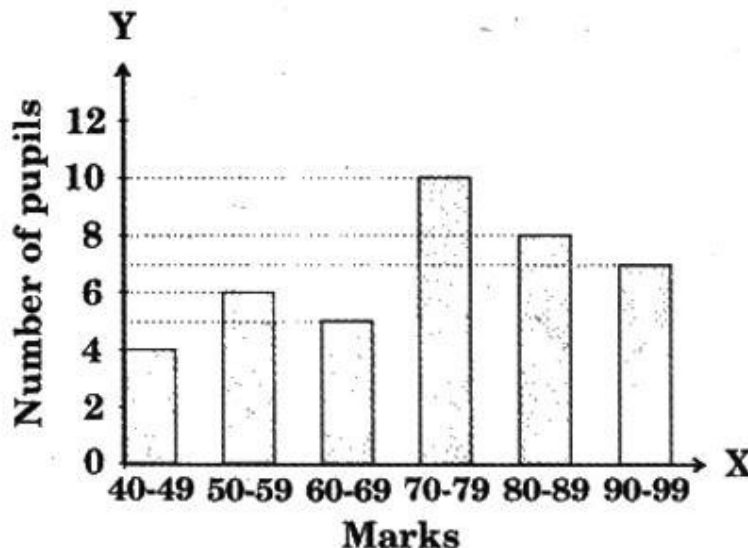
$$10\% \text{ of } ₹ 100 \square 50\% \text{ of } ₹ 10$$

Which symbol must be placed in the box?

- (A) < (B) = (C) > (D) Either (A) or (B)

20

The bar graph given shows the mathematics marks obtained by 40 pupils.



A pupil who scored 80 marks and above is awarded Honors grade. What percentage of pupils secured the Honors grade?

- (A) 43.5% (B) 62.5% (C) 57.5% (D) 37.5%

21

What is the place value of 3 in 712,364,962?

- (A) Hundred thousand (B) 300 thousands
(C) 3 millions (D) 3

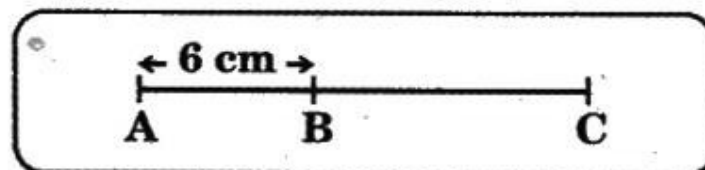
22

If $P + Q = 105$ and $P - Q = 45$, what is $(P \times Q) \div (P + Q)$?

- (A) 2450 (B) 5625 (C) 2250 (D) 900

23

Observe the line segment given.



If the ratio of the length of AB to the length of BC is 2 : 5, find the length of AC.

- (A) 21 cm (B) 15 cm (C) 30 cm (D) 9 cm

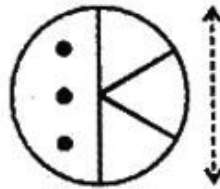
24

What time is it 3 h 20 min before 11: 15 a.m.?

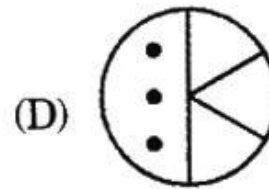
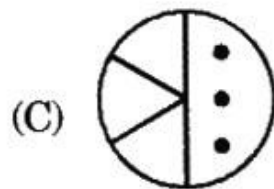
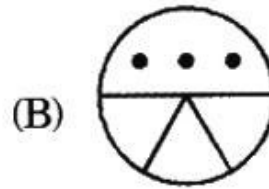
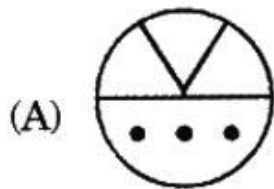
- (A) 8: 55 a.m. (B) 7: 55 p.m.
 (C) 7: 55 a.m. (D) 6: 55 a.m.

25

Sujith drew the design given.



He rotated the design by 180° and then flipped it over the dashed line. Which of the following is Sujith's final design?



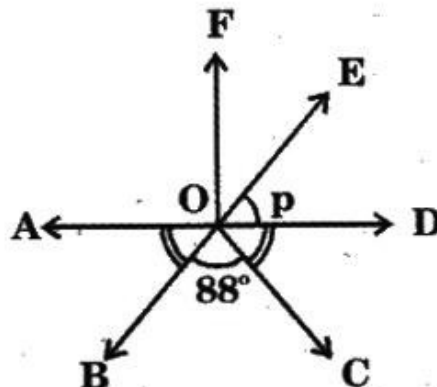
26

By how much is $\frac{9}{40}$ less than $\frac{23}{40}$?

- (A) $\frac{5}{8}$ (B) $\frac{7}{20}$ (C) $\frac{7}{40}$ (D) $\frac{4}{5}$

27

AD and BE are straight lines.

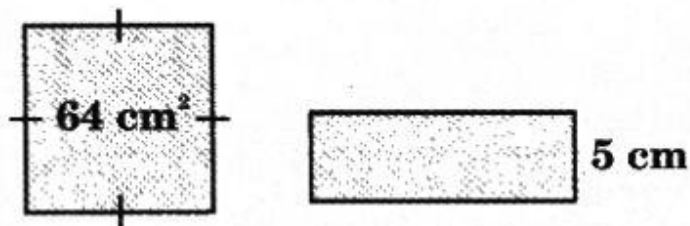


Given that $\angle AOB = \angle DOC$, find $\angle p$.

- (A) 44° (B) 46° (C) 51° (D) 92°

28

In the given figure, the rectangle has the same perimeter as the square.

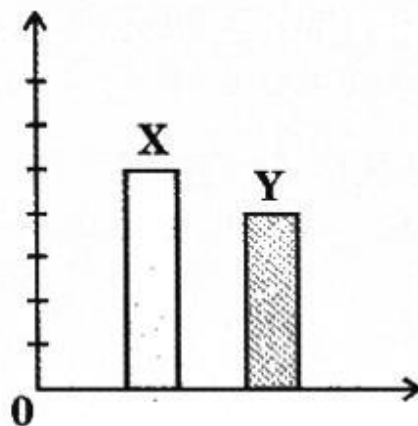


If the breadth of the rectangle is 5 cm, what is its area?

- (A) 55 cm^3 (B) 55 m^2
(C) 55 cm^2 (D) 55 km^2

29

Observe the given figure in which the heights of two poles X and Y are given.



If the height of pole X is 225 cm, how much shorter than 3 m is pole Y?

- (A) 180 cm (B) 120 cm (C) 140 cm (D) 160 cm

30

Study the following.

A: The value of digit 3 in 239766.

B: The value of digit 6 in 45655.

How many times B is A?

- (A) 500 (B) 5 (C) 50 (D) 5000

31

Study the pattern of fractions.

$$\frac{3}{4}, 1\frac{4}{5}, 2\frac{5}{6}, \boxed{?}, 4\frac{7}{8}$$

Identify the missing mixed fraction.

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

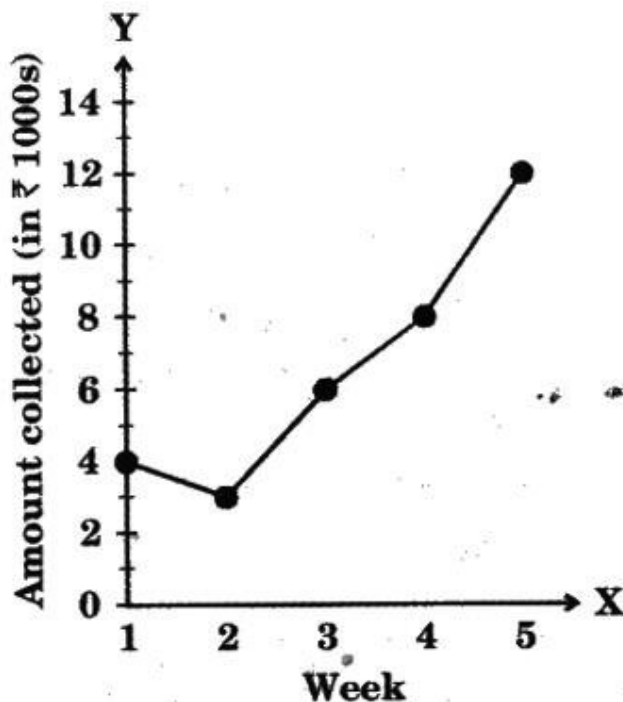
32

How many hundredths more than 1.98 is 21 tenths?

- (A) 21 (B) 15 (C) 1.2 (D) 12

33

The line graph given shows the amount of money collected from a charity drive over 5 weeks.



What percentage of the amount of money collected in the 5th week is the amount of money collected in the 1st week?

- (A) $33\frac{1}{3}\%$ (B) 33%
 (C) 34% (D) 30%

34

Study the numbers given in the box.

5760	1080	720
2160		1440

Identify the number that is not a divisor of any of the given numbers.

- (A) 23 (B) 24 (C) 36 (D) 12

35

Piyush wants to find out which sport is most popular among all the students of primary school. Which of these groups would be best to survey to get the required information?

- (A) All the students at the primary school.
(B) All the teachers at the primary school.
(C) All the fifth grade students at the school.
(D) All the parents of the students at the primary school.

36

What is the cost of 30.5 litres of milk at the rate of ₹ 7.50 per litre?

- (A) ₹ 225.75 (B) ₹ 223.75
(C) ₹ 228.75 (D) ₹ 232.75

37

Observe the given numbers.

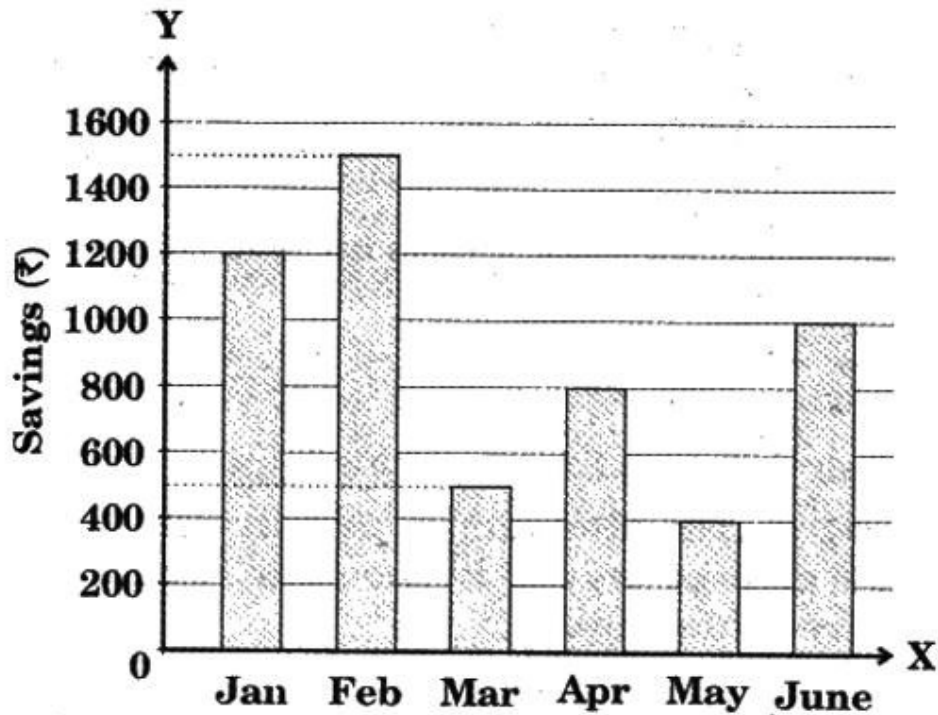
2, 11, 13, 4, 12, 17, 22, 16, 23, 25, 21

If M is the sum of all prime numbers and N is the sum of all composite numbers in the given list, what is the difference of M and N?

- (A) 28 (B) 34 (C) 44 (D) 36

38

The bar graph shows Vikram's savings in 6 months.



Vikram's monthly salary is ₹ 2500.

What percent of his salary did he spend in January?

- (A) 52% (B) 58% (C) 48% (D) 42%

39

Which of the following numbers are the prime factors of 130?

- (A) 5 and 26 (B) 3 and 13
(C) 2, 5 and 13 (D) 13 and 10

40

Which of the following numbers has the greatest value for digit 5?

- (A) 80503 (B) 5098 (C) 146857 (D) 7653231

41

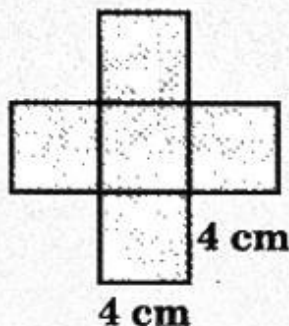
What is the simplest form of 55 minutes as a fraction

of $2\frac{1}{4}$ hours?

- (A) $\frac{10}{27}$ (B) $\frac{55}{59}$ (C) $\frac{12}{30}$ (D) $\frac{11}{27}$

42

The figure given is the net of an open top cube of edge 4 cm.



What is the area of the cardboard needed to make the cube?

- (A) 80 cm^2 (B) 20 cm^2
 (C) 16 cm^2 (D) 100 cm^2

43

The lengths of two sides of a triangle are 4 cm and 7 cm. Which of the following can be the measure of its third side?

- (A) 13 cm (B) 12 cm (C) 11 cm (D) 5 cm

44

Observe the twin primes in the table.

(3, 5)	(5, 7)	(11, 13)	(17, 19)
P	Q	R	S

Which of the given twin primes are present in the prime factorisation of 2145?

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

45

The mass of a basket of fruits is 17000 g corrected to the nearest thousand grams. What could be the greatest mass of the basket of fruits?

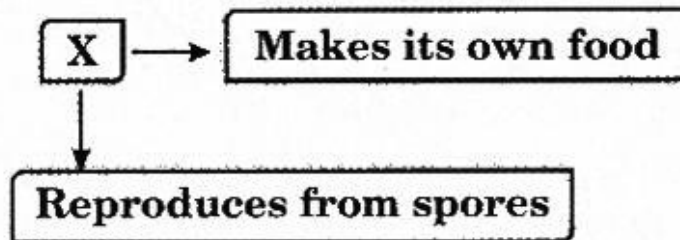
- (A) 16500 g (B) 16499 g
 (C) 17499 g (D) 17500 g

- 46 Read the information in the given box and identify the animal X.

Animal X eats plant parts. It gives birth to young ones and feeds them with its milk.

- (A) Fox (B) Goat (C) Cat (D) Dog

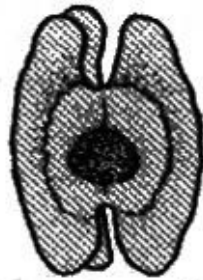
- 47 Study the given concept map.



Which of the following could X be?

- (A) Mould (B) Mushroom (C) Fern (D) Yeast

- 48 The given seed gets dispersed by



- (A) water. (B) bird. (C) insects. (D) wind.

- 49 Which of these protects the baby plant?

- (A) Radicle (B) Plumule
(C) Cotyledons (D) Micropyle

- 50 Which of the following actions involve a consumer and a producer in a food chain?

- (A) A frog feeding on a grasshopper.
(B) A grasshopper eating grass.
(C) A snake feeding on a frog.
(D) An eagle feeding on a snake.

51

Which of the following organs is NOT a part of the human nervous system?

- (A) Brain (B) Spinal cord (C) Humerus (D) Nerves

52

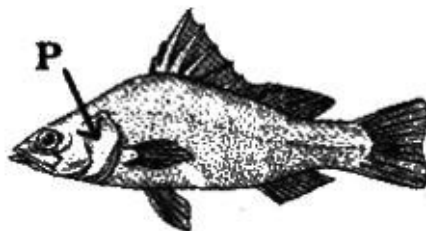
Identify the process that is shown in the given figure.



- (A) Freezing (B) Condensation
(C) Evaporation (D) Decantation

53

The given figure shows a fish.

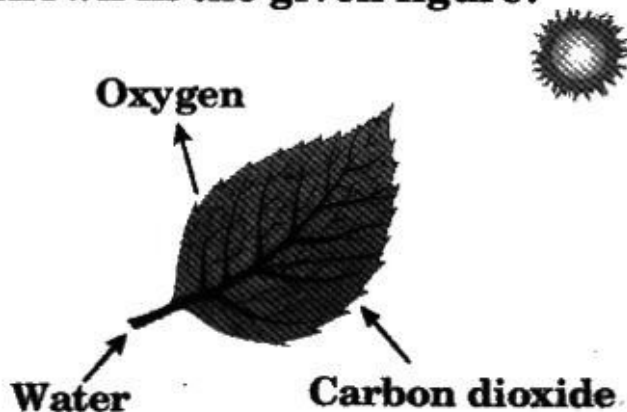


How does the structure labelled P help the fish?

- (A) To swim (B) To breathe
(C) To find direction (D) To balance its body

54

Which of the following processes that take place in a leaf is shown in the given figure?



- (A) Respiration (B) Reproduction
(C) Photosynthesis (D) Condensation

55 Which part of the potato plant contains stored food?

- (A) Root (B) Stem (C) Leaf (D) Fruit

56 What type of joints do X and Y in the given classification table represent?

X	Y
Elbow and knee	Shoulder and pelvis

- (A) X – Pivot, Y – Hinge
(B) X – Hinge, Y – Ball and socket
(C) X – Ball and socket, Y – Pivot
(D) X – Hinge, Y – Gliding

57 Identify the sequence of the life cycle of a plant.

- (A) Seed, Seedling, Plant, Sapling
(B) Sapling, Seedling, Seed, Plant
(C) Seedling, Seed, Plant, Sapling
(D) Seed, Seedling, Sapling, Plant

58 Which of these simple machines is used to draw water from a well?

- (A) Lever (B) Inclined plane (C) Wedge (D) Pulley

59 Which of the following animals breathe through body holes?

- (A) Grasshopper (B) Rat (C) Fish (D) Lizard

60 An ice pack is applied in the case of a

- (A) stomach pain. (B) nose bleed.
(C) knee cut. (D) headache.

61 What is a lever?

- (A) A bar which can turn about a fixed point.
(B) An inclined plane.
(C) A wheel with grooves.
(D) An axle and wheel.

62 Which of these is present in a molecule of water?

- (A) Oxygen (B) Hydrogen (C) Nitrogen (D) Both (A) & (B)

63

How many types of levers are there?

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

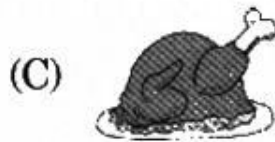
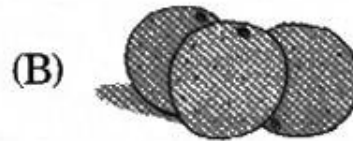
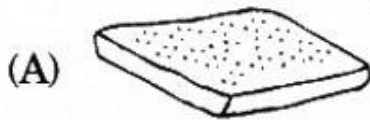
64

I protect the brain. I am made up of bones which are fused firmly together to form a shell or box like structure. What am I?

- (A) Ribcage (B) Skull (C) Spine (D) Sternum

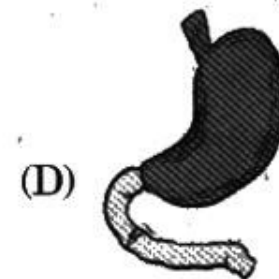
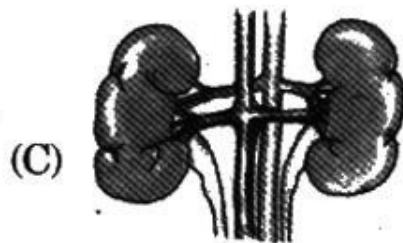
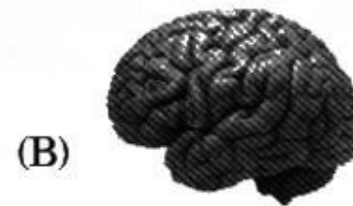
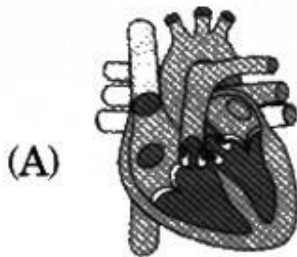
65

Which of the following types of food should be consumed to reduce the risk of scurvy?



66

Identify the controlling centre of the body.



67

Which of the following are good eating habits?

- I. Eating a lot of fibre food.
II. Eating too much sweets.
III. Eating fresh fruits and vegetables rich in vitamins and minerals.

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

68

Which of the following statements is correct?

- (A) The moon has its own light.
 (B) The moon reflects the light of the sun.
 (C) The moon reflects the light of the earth.
 (D) The moon reflects the light of the venus.

69

The figure shows a pair of scissors.



Which labelled parts represent the fulcrum, effort and load?

	Fulcrum	Load	Effort
(A)	K	L	M
(B)	K	M	L
(C)	L	K	M
(D)	L	M	K

70

I undergo periodic changes. I am the one who is responsible for tides. I am the king of night but I beg light from the sun. Who am I?

- (A) The earth (B) The star (C) The moon (D) The sun

71

Which of these is used for making fertilisers?

- (A) Nitrogen (B) Carbon (C) Carbon dioxide (D) Oxygen

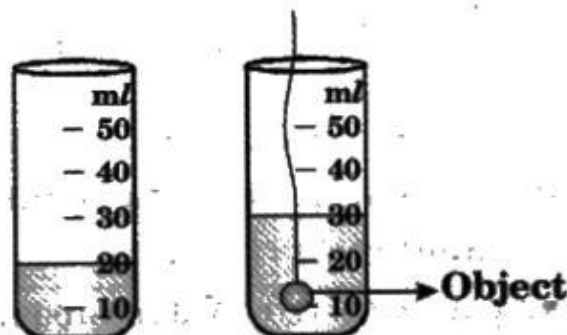
72

Which type of rock is pumice?

- (A) Igneous rock (B) Sedimentary rock
 (C) Metamorphic rock (D) Both (B) and (C)

73

Find the volume of the object immersed in water.



- (A) 10 ml (B) 20 ml (C) 30 ml (D) 40 ml

- 74** Which of the following rocks is made of mica, quartz and feldspar?
(A) Lime stone (B) Shale (C) Granite (D) Sand stone
- 75** Which of the following instruments is used to see the moon and distant stars?
(A) Bioscope (B) Telescope
(C) Microscope (D) Stethoscope
- 76** Which of the following mixtures can be separated easily by using a magnet?
(A) Sand + Water (B) Iron dust + Sand
(C) Saw dust + Stones (D) Stones + Sand
- 77** Which of these benefits does a plant get from animals?
(A) Shelter from direct sunlight.
(B) Dispersal of seeds.
(C) To get oxygen used in respiration.
(D) Moisture to prevent wilting.
- 78** What is the process of settling down of insoluble matter in water called?
(A) Distillation (B) Sedimentation
(C) Condensation (D) Filtration
- 79** Some animals living in water have streamlined body shapes. This helps them to
(A) keep their body warm. (B) reduce loss of water.
(C) reduce friction in water. (D) decrease body weight.
- 80** Substance P does not have a fixed volume. It occupies the total space of the container and it can be compressed. What is P likely to be?
(A) Solid (B) Liquid (C) Gas (D) Fluid
- 81** Which of the following changes is possible with the application of heat?
(A) Water changes to ice. (B) Water vapour changes to ice.
(C) Ice changes to water. (D) Water vapour changes to water.

82 **What is the phase of the moon during which an eclipse of the sun occurs?**

- (A) New moon (B) Full moon
(C) Crescent (D) Half moon

83 **When we pump air into a swimming float, it inflates. What can we say about air from this?**

- (A) Air makes objects small and heavier.
(B) Air occupies space.
(C) Air contracts on heating.
(D) Air cannot be compressed.

84 **The changing of the shapes of the moon is called a/an**
(A) eclipse. (B) shadow. (C) phase. (D) reduction.

85 **Which gas in the air is represented by part A?**

A 78%	B 21%	C 1%
-------	-------	------

- (A) Nitrogen (B) Oxygen
(C) Carbon dioxide (D) Water vapour

86 **Which of the following statements is incorrect?**

- (A) The top soil is good for plant growth.
(B) Soil contains many living things.
(C) Soil erosion is good for fertile soil.
(D) The top soil contains humus.

87 **In which of the following processes is oxygen used up?**

I. Burning	II. Respiration	III. Photosynthesis
------------	-----------------	---------------------

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

88 **Which of the following is a deficiency disease?**

- (A) Measles (B) Goitre (C) Typhoid (D) Cholera

89 **Which of these is/are fossil fuels?**

- (A) Coal (B) Kerosene oil
(C) Natural gas (D) All of these

90 **What is meant by a balanced diet?**

- (A) A diet that contains only vitamins and minerals.
(B) A diet that is rich in carbohydrates.
(C) A diet that is rich in proteins.
(D) A diet that contains all classes of food in correct quantities.

- 90 Who is known as "The Man of Peace"?
 (A) Lala Lajpat Rai (B) Lal Bahadur Shastri
 (C) Jawaharlal Nehru (D) Bala Gangadhar Tilak
- 92 Who among the following is a doctor who treats animals?
 (A) Animal doctor (B) Veterinarian
 (C) Pediatrician (D) Rheumatologist
- 93 Which of the following collective nouns fills the given blank?

A _____ of pearls.

- (A) group (B) galaxy (C) string (D) chain
- 94 Where is the "Gateway of India" located?
 (A) Delhi (B) Agra (C) Mumbai (D) Kolkata
- 95 Which character is given in the figure?



- (A) Master Shifu (B) Bugs Bunny
 (C) Master Oogway (D) Lord Shen
- 96 Which of the following is the capital of Canada?
 (A) Jakarta (B) Ottawa (C) Cairo (D) Berlin
- 97 Which country in the world has the largest forest area?
 (A) India (B) Canada (C) Russia (D) Mexico
- 98 What is the official currency of Sweden?
 (A) Swedish Dollar (B) Swiss Franc
 (C) Swedish Krona (D) Euro
- 99 Which film won the "Best Picture Oscar" in 2013?
 (A) Barfi (B) Argo (C) Avatar (D) Amour
- 100 Where is the headquarters of ICC (International Cricket Council) located?
 (A) Dubai (B) Singapore
 (C) India (D) England

●●● ————— **Key for NSTSE-2014** ————— ●●●

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