MTG

NSO

CLASS 4

5 Years Solved Papers



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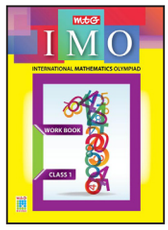
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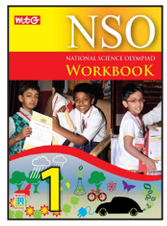
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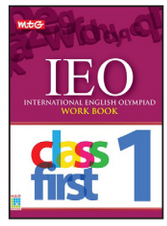
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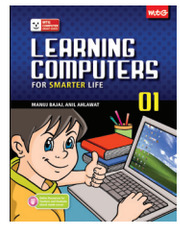
International Mathematics Olympiad



National Science Olympiad

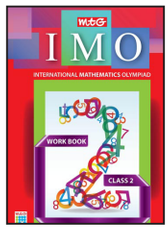


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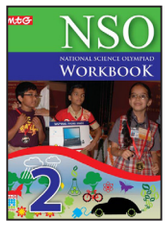


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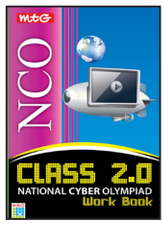
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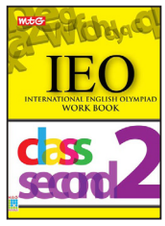
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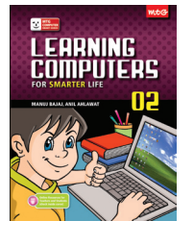
National Science Olympiad



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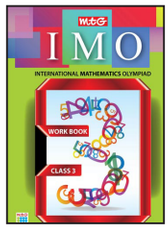


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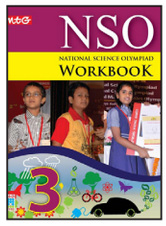


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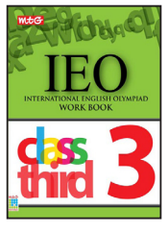
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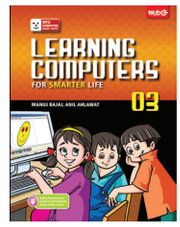
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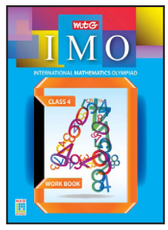
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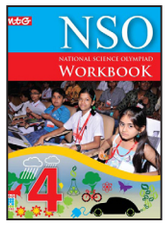
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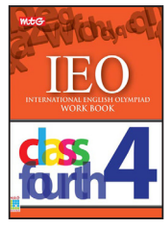
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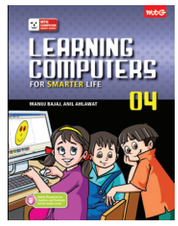
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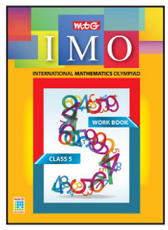


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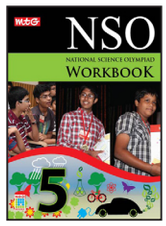


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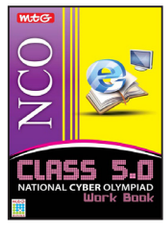
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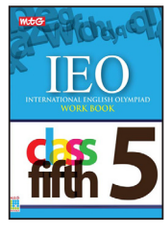
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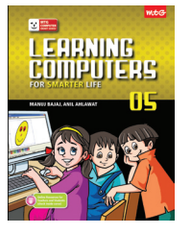
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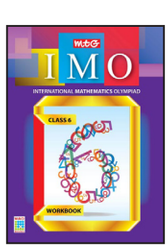


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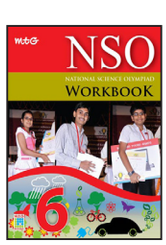


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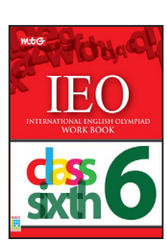
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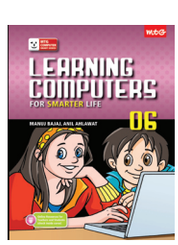
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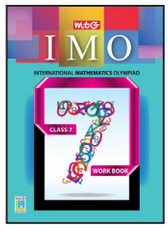
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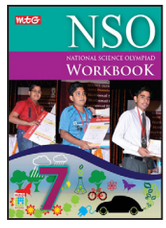
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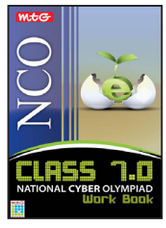
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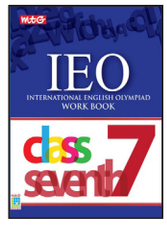
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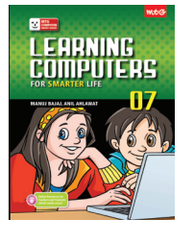
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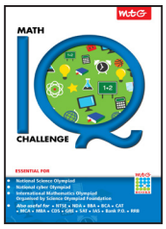
National Cyber Olympiad



International English Olympiad



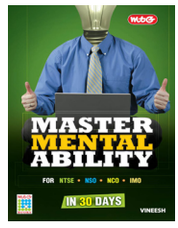
MTG CSS Series



Math IQ Challenge

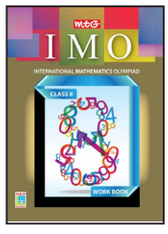


Science IQ Challenge

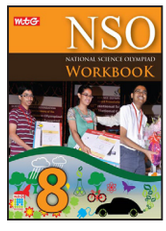


Master Mental Ability in 30 Days

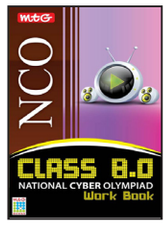
CLASS 8



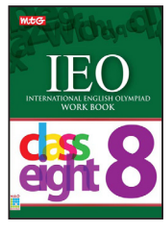
International Mathematics Olympiad



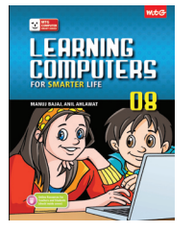
National Science Olympiad



National Cyber Olympiad



International English Olympiad



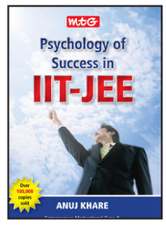
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Math IQ Challenge



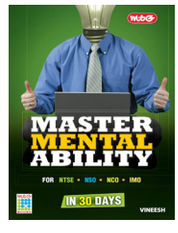
Science IQ Challenge



Psychology of Success



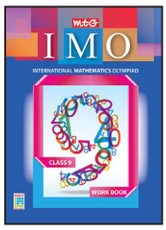
Science of Achievement



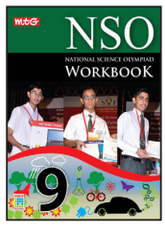
Master Mental Ability in 30 Days

MTG WORK-BOOKS / OLYMPIAD BOOKS

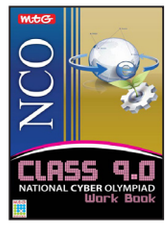
CLASS 9



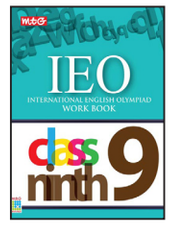
International Mathematics Olympiad



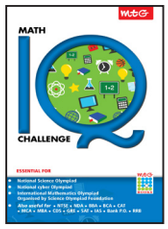
National Science Olympiad



National Cyber Olympiad



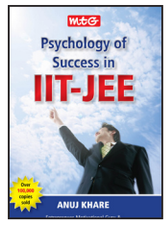
International English Olympiad



Math IQ Challenge



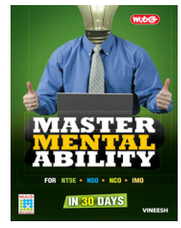
Science IQ Challenge



Psychology of Success

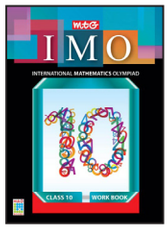


Science of Achievement

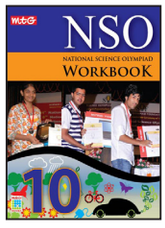


Master Mental Ability in 30 Days

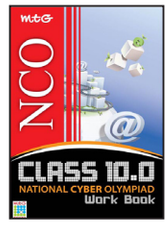
CLASS 10



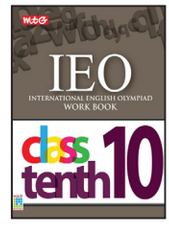
International Mathematics Olympiad



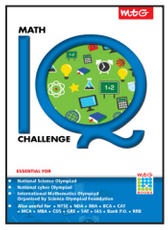
National Science Olympiad



National Cyber Olympiad



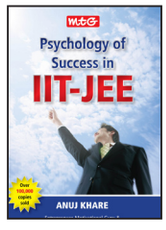
International English Olympiad



Math IQ Challenge



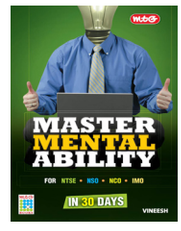
Science IQ Challenge



Psychology of Success



Science of Achievement



Master Mental Ability in 30 Days

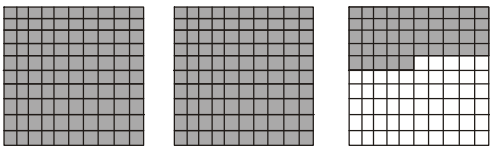
SCIENCE OLYMPIAD FOUNDATION

9th NSO

Year 2006

MENTAL ABILITY

1. The model is shaded to represent $2\frac{45}{100}$.



What decimal does the model represent?

(A) 245.0 **(B)** 0.245
(C) 2.45 **(D)** 24.5
(E) None of these.

---

2. Megha and Anita made 48 cup-cakes for a party. They decorated each cup-cake with 5 chocolate chips. How many chocolate chips did they use to decorate all 48 cup-cakes?

(A) 5,00 **(B)** 480 **(C)** 500 **(D)** 240
(E) None of these.

---

3. Suman began horse riding at 7:30 A.M. She rode for 3 hours 45 minutes. What time did she finish riding?

(A) 4:15 A.M. **(B)** 10:15 A.M. **(C)** 11:15 A.M. **(D)** 11:45 A.M.
(E) None of these.

---

4. Which pair of numbers best complete the equation?

$\square \times 100 = \square$

(A) 95 and 950 **(B)** 95 and 9,500
(C) 95 and 95,000 **(D)** 95 and 950,000
(E) None of these.

---

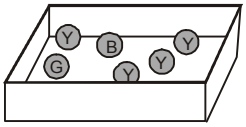
5. Which of the following describes the rule for this pattern?

15, 18, 17, 20, 19, 22, 21

(A) Add 3, add 1 **(B)** Add 3, subtract 1 **(C)** Add 1, subtract 3 **(D)** Subtract 3, add 1
(E) None of these.

---

6. Look at the box of balls.
What is the fraction of the blue ball to other balls in the box?



(A) 1/6 **(B)** 2/5
(C) 2/3 **(D)** 2/7
(E) None of these.

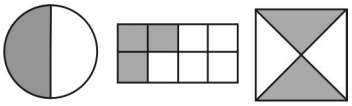
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7. Ela put a toy car and a toy truck on a balance. Together they weighed about 1/2 kg. If the toy truck weighs about 100 grams, about how much does the toy car weigh?

(A) 400 gm **(B)** 10 gm **(C)** 160 gm **(D)** 250 gm
(E) None of these.

---

8. Which of the following is shaded to show a fraction equivalent to 3/6?



(A) 1, 2 **(B)** 1, 3
(C) 3 only **(D)** 1 only
(E) None of these.

---

9. Each number in Set S is related in the same way to the number before it in Set T.

Set T	Set S
6	1
18	3
30	5

If the number in Set S is 9, what is one way to find its related number in Set T?

(A) Multiply 5 by 6 **(B)** Add 9 and 6
(C) Multiply 9 by 6 **(D)** Add 5 and 6
(E) None of these.

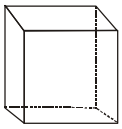
10. If we put number 4 in the box which equation will become true?

(A) 40 ÷ ☐ = 8 **(B)** 24 ÷ ☐ = 8 **(C)** 16 ÷ ☐ = 8 **(D)** 32 ÷ ☐ = 8
(E) None of these.

11. Find the numeral that means 2 hundreds, 9 tens, and 4 ones.

(A) 15 **(B)** 213 **(C)** 294 **(D)** 2,094
(E) None of these.

12. What is the total number of vertices in the cube?



(A) 12 **(B)** 8
(C) 6 **(D)** 4
(E) None of these.

13. The chart shows the number of visitors to a museum during the first 4 years when it was opened.
Which of the following shows the number of visitors in order from greatest to least?

Year	Number of Visitors
1	3,415
2	2,809
3	3,092
4	2,978

(A) 2,809; 3,415; 2,978; 3,092
(B) 3,415; 3,092; 2,978; 2,809
(C) 2,978; 2,809; 3,415; 3,092
(D) 2,809; 2,978; 3,092; 3,415
(E) None of these.

14. Sharon had a collection of 60 coins. She put the coins in stacks with the same number in each stack. Which arrangement would NOT be possible if she used all the coins?

(A) 2 stacks of 30 coins **(B)** 3 stacks of 20 coins
(C) 4 stacks of 15 coins **(D)** 5 stacks of 14 coins
(E) None of these.

15. Lina has read 61 pages of her library book. If the book has 90 pages, how many more pages she should read to complete the book?

(A) 29 **(B)** 31 **(C)** 39 **(D)** 151
(E) None of these.

SCIENCE

16. Which of these is an example of environment?

(A) A savanna **(B)** A dog catching a ball
(C) A shivering cat **(D)** An elephant's tusk
(E) None of these.

17. What kind of behaviour is a parrot showing when it says its own name?

(A) Suitable **(B)** Learned **(C)** Basic **(D)** Instinctive
(E) None of these.

18. When a worker bee does a wagging dance, what is he trying to tell the other bees?

(A) That danger is near **(B)** He is just playing **(C)** Where to find nectar **(D)** Where the Queen is
(E) None of these.

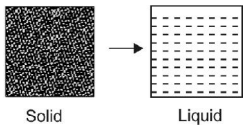
19. Five scientists are trying to determine which of the four beakers of water is coldest. Each choice below shows what each scientist said. Which comment gives the best start in finding this answer?

(A) One of these feels the coldest to me **(B)** Which one do you think is the coldest?
(C) What is the freezing point of water?
(D) Is there any way we can measure the temperature of the water in each beaker?
(E) None of these.

20. Which of these materials would let electricity flow through it?

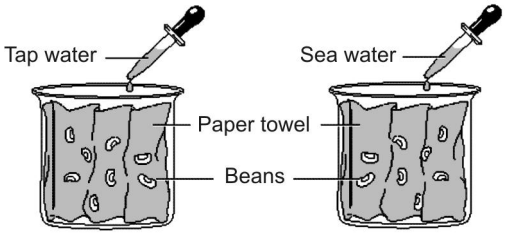
(A) Plastic **(B)** Cardboard **(C)** Aluminium coil **(D)** Rubber
(E) None of these.

21. The picture shows the process of —



(A) Melting **(B)** Boiling
(C) Condensing **(D)** Freezing
(E) None of these.

22. Which of these questions can be answered from the results of this experiment?



(A) Do beans need light in order to grow?
(B) Can beans grow faster in groups of eight?
(C) Does sea water affect bean growth?
(D) How much water is needed for beans to grow?
(E) None of these.

23. In an experiment salt and sand are mixed together. Which of these procedures could be used to most easily separate the salt from the sand?

(A)
- Stir the mixture into a glass of water
- Pour the mixture in some other glass through a filter
- Evaporate the water

(B)
- Pour the mixture onto a piece of paper
- Brush the mixture into a pile
- Drag a magnet through the pile

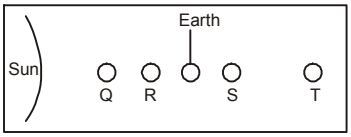
(C)
- Put the mixture in a pan
- Heat the pan for 10 minutes
- Let the hot mixture cool slowly

(D)
- Spread the mixture into a thin layer
- Look at the mixture through a magnifying glass
- Separate the crystals with a pin

(E) None of these.

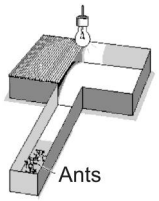
24. Raccoons living in cities have learned to open lids of garbage cans. This is an example of an animal
(A) Adapting to its environment **(B)** Inheriting the ability to change its diet
(C) Being tamed by humans **(D)** Becoming a plant eater
(E) None of these.

25.



Which of these best represents Mars?
(A) Q **(B)** R **(C)** S **(D)** T
(E) None of these.

26. This experiment was probably set up to answer which of the following questions?

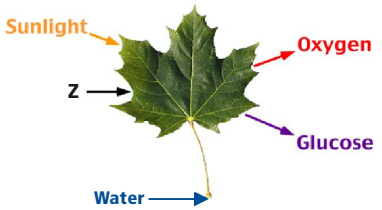


(A) What is the mass of the ants?
(B) Will ants go to a dark or a light area?
(C) How many kinds of ants are there?
(D) Where do ants get food?
(E) None of these.

27. About how long does it take the Earth to make a complete rotation on its axis?
(A) One day **(B)** One week **(C)** One month **(D)** One year
(E) None of these.

28. Which of the following characteristics would NOT give animals an advantage in the ocean?
(A) Long body hair **(B)** A smooth body
(C) Structures that sense movement **(D)** A strong sense of smell
(E) None of these.

29. In the diagram, the label Z represents —



Food production (photosynthesis)

(A) Sugar
(B) Carbon dioxide
(C) Nitrogen
(D) Water vapour
(E) None of these.

---

30. A car will skid less on a dry road than on a wet road. This happens because between the tyres and the dry road, there is more —

(A) Gravity **(B)** Magnetism **(C)** Friction **(D)** Heat
(E) None of these.

---

31. Which pair best matches this pair of words?

COCOON – MOTH

(A) TADPOLE - FROG **(B)** WORM - SNAKE **(C)** BRANCH - TREE **(D)** EGG – SEED
(E) None of these.

---

32. If a city wants to improve the natural environment of a park, what is the best thing to do?

(A) Construct a flower garden with park benches around it.
(B) Plant a variety of trees and shrubs that are native to the area.
(C) Build swings, slides, and seesaws for small children.
(D) All of these **(E)** None of these.

---

33. What changes the Sun's energy into electrical energy?

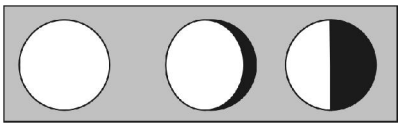
(A) Voltage **(B)** Generators **(C)** Solar cells **(D)** Electric cells
(E) None of these.

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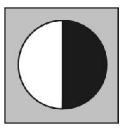
34. When a moving object rubs against something, its motion slows down because of a force called

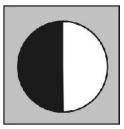
(A) Gravity **(B)** Inertia **(C)** Speed **(D)** Friction
(E) None of these.

35.



Which of the following is the next phase of the moon ?

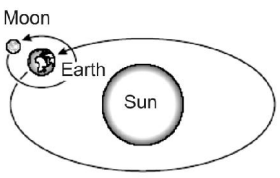
(A) 
(B) 

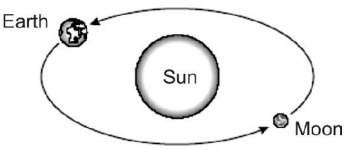
(C) 
(D) 

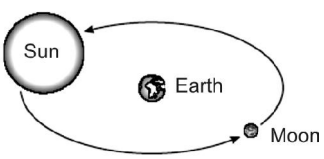
(E) None of these.

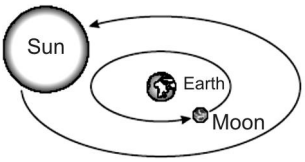
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36. Which of these best shows that the Earth revolves around the sun as the moon revolves around the Earth?

(A) 

(B) 

(C) 

(D) 

(E) None of these.

37. Which cycle is correct?

(A) Morning, sunrise, afternoon, sunset
(B) Summer, rainfall, winter, spring
(C) Seed, mature plant, fruit, seedling
(D) Baby, teenager, child, adult
(E) None of these.

---

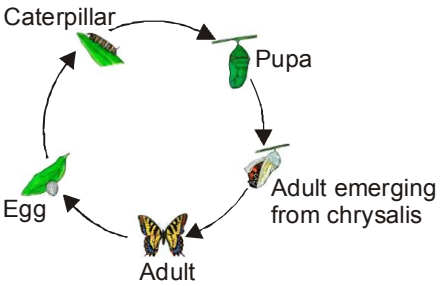
38. The diagram shows a potato plant in a cup. The cup was originally filled to the top with water.
Which statement best explains why the cup no longer contains water?



(A) The water froze
(B) The water condensed
(C) The water was taken in by the roots
(D) The water was moved by gravity
(E) None of these.

---

39. What is shown in the given diagram?



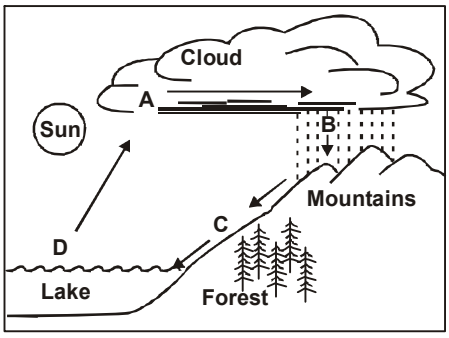
(A) Life span
(B) A population
(C) A life cycle
(D) A community
(E) None of these.

---

40. A student planted the same kind of seeds in pots *A* and *B*. She planted five seeds in pot *A* and five seeds in pot *B*. The amount and type of soil in both pots was the same. She added the same amount of water to both pots each week. Pot *A* was placed by a sunny window. Pot *B* was placed in a dark room. After four weeks, she observed the plants in both pots. The plants in pot *A* were green, with tall, thick stems. The plants in pot *B* were yellow, with tall, thin stems.
Which statement best explains why the plants in pot *A* were different from the plants in pot *B*?

(A) Pot *A* contained more soil than pot *B*.
(B) Pot *A* contained more seeds than pot *B*.
(C) Pot *A* received more sunlight than pot *B*.
(D) Pot *A* received more water than pot *B*.
(E) None of these.

***Direction (41-42)* : Questions 41 and 42 are based on the water cycle shown in the diagram. Four parts of the water cycle are labelled A, B, C, and D.**



41. Which process is occurring at *D*?

(A) Condensation
(B) Evaporation
(C) Precipitation
(D) Runoff
(E) None of these.

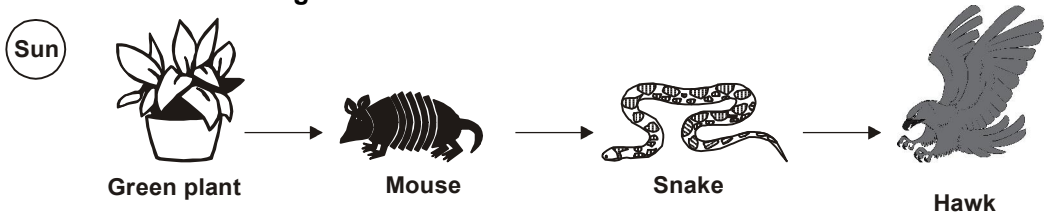
---

42. Water flowing on Earth's surface at *C* is called

(A) Condensation **(B)** Evaporation **(C)** Precipitation **(D)** Runoff
(E) None of these.

---

43. A food chain is shown in diagram.



Which population would most likely decrease if the number of mouse greatly increased?

(A) Green plants **(B)** Snakes **(C)** Hawks **(D)** All of these
(E) None of these.

44. Which object would reflect the most light ?

(A) Cloth **(B)** Wood
(C) Mirror **(D)** Construction paper
(E) None of these.

45. Which skull is probably from an animal that ate grass ?

(A)  **(B)**  **(C)**  **(D)** 

(E) None of these.

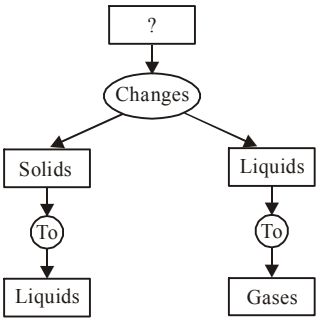
46. The picture shows–

(A) A pulley
(B) A wheel and axle
(C) An inclined plane
(D) A lever
(E) None of these.



47. Which of these best completes this concept map ?

(A) Magnetism
(B) Heat
(C) Sound
(D) Freezing
(E) None of these.



48. What is the amount of space that matter takes up?

(A) Volume **(B)** Weight **(C)** Mass **(D)** Matter
(E) None of these.

49. Rain, snow and sleet are forms of what?

(A) Climate **(B)** Precipitation **(C)** Clouds **(D)** Weather
(E) None of these.

50. What is a stem?

(A) Part of the plant that connects the roots to the leaves.
(B) Part of the plant that connects the leaves to the leaves.
(C) Part of the plant that connects the roots to the ground.
(D) All of these. **(E)** None of these.

SPACE FOR ROUGH WORK

SCIENCE OLYMPIAD FOUNDATION

10th NSO

Year 2007

MENTAL ABILITY

1. **What is the another way of representing the number 109?**

(A) 2 × 5 + 9 **(B)** 10 + 9 **(C)** 10 × 9 **(D)** 2 × 50 + 9

(E) None of these.

---

2. **Which pair of numbers best completes this table?**

Number	Number × 10
625	6250
304	3040
158	1580

(A) | 819 | 8190 | **(B)** | 320 | 3220 | **(C)** | 405 | 4005 | **(D)** | 217 | 2107 |

(E) None of these.

---

3. **Rakesh went to his grandmother's house for a fortnight. For how many days did he stay?**

(A) 7 days **(B)** 14 days **(C)** 21 days **(D)** 15 days

(E) None of these.

---

4. **Sunita has gone to Delhi and she will come back tomorrow. What does tomorrow mean?**

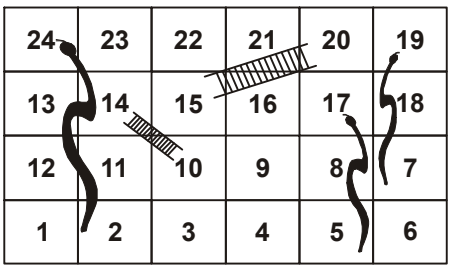
(A) The day before today **(B)** The day after today

(C) The day after yesterday **(D)** The day before yesterday

(E) None of these.

---

5. **Raghav played snakes & ladders. He threw a dice three times. In three turns he got numbers 5, 4 and 1 on the dice. On what number did he reach?**



(A) 22 **(B)** 10

(C) 14 **(D)** 15

(E) None of these.

---

6. **Which symbols are never repeated in Roman Numerals?**

(A) V **(B)** L **(C)** D **(D)** All of these

(E) None of these.

---

7. **Choose the smallest fraction.**

(A) $\frac{1}{2}$ **(B)** $\frac{1}{4}$ **(C)** $\frac{1}{6}$ **(D)** $\frac{1}{8}$

(E) None of these.

---

8. **A bus ticket costs 30 p. What is the total cost for a class of 30 children to travel by the bus?**

(A) 90 p **(B)** Rs. 9 **(C)** Rs. 90 **(D)** Rs. 900

(E) None of these.

---

9. **1.00 a.m. is ____**

(A) 0100 hours **(B)** 1000 hours **(C)** 1300 hours **(D)** 0001 hours

(E) None of these.

---

10. **When you stretch all the 4 fingers of your hand. What angles do your fingers make?**

(A) Acute angles **(B)** Obtuse angles **(C)** Right angles **(D)** All of these

(E) None of these.

---

11. **How many grams are there in 10 kg?**

(A) 100 grams **(B)** 1000 grams **(C)** 10 grams **(D)** 10000 grams

(E) None of these.

---

12. **Which of the following have their sum equal to their product?**

(A) 1, 2, 3 **(B)** 2, 3, 4 **(C)** 2, 3, 5 **(D)** 3, 2, 4

(E) None of these.

---

13. **We have to paint all the sides of walls of a cube with different colours. How many colours will be required?**

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

(E) None of these.

---

14. **What is the total number of days in July and August ?**

(A) 60 days **(B)** 61 days **(C)** 62 days **(D)** 59 days

(E) None of these.

---

15. **If the pattern below continues, how many circles will be there in the column 5?**

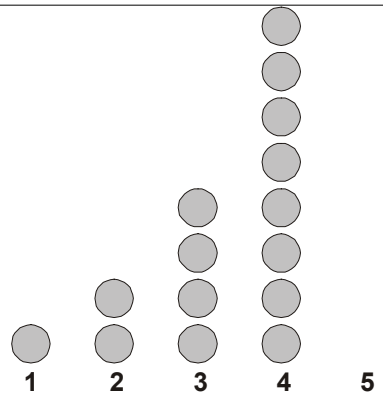
(A) 8

(B) 10

(C) 16

(D) 20

(E) None of these.



SCIENCE

16. **Animals which give birth to young ones are called ____**

(A) Mammals **(B)** Amphibians **(C)** Reptiles **(D)** Insects

(E) None of these.

---

17. **The instrument used to see the moon and stars is ____**

(A) Microscope **(B)** Telescope **(C)** Periscope **(D)** Stethoscope

(E) None of these.

---

18. **The back bone of the plant is the ____**

(A) Root **(B)** Leaves **(C)** Stem **(D)** Fruit

(E) None of these.

---

19. Hardest rock is ____

(A) Coal **(B)** Sandstone **(C)** Marble **(D)** Diamond

(E) None of these.

---

20. E-mail can be send through ____

(A) Fax machine **(B)** Computers **(C)** Telegraph **(D)** Telephone

(E) None of these.

---

21. The earth completes one rotation in ____

(A) 24 hours **(B)** 365 days **(C)** 52 weeks **(D)** 28 days

(E) None of these.

---

22. Which of the following statements is true?

(A) Plants can move from one place to another **(B)** Plants do not breathe

(C) Plants reproduce through seeds **(D)** Plants are man made things

(E) None of these.

---

23. Baby frogs are called ____

(A) Tadpoles **(B)** Turtles **(C)** Nymph **(D)** Caterpillar

(E) None of these.

---

24. Skyscrapers are ____

(A) Flying objects **(B)** Heavenly bodies **(C)** A layer of air **(D)** Tall buildings

(E) None of these.

---

25. Which watch can we wear around the wrist?

(A) Stop watch **(B)** Wrist watch **(C)** Wall clock **(D)** Time piece

(E) None of these.

---

26. Animals without backbones are ____

(A) Vertebrates **(B)** Invertebrates **(C)** Reptiles **(D)** Amphibians

(E) None of these.

---

27. Man walks with the help of ____

(A) Upper limbs **(B)** Lower limbs **(C)** Middle limbs **(D)** Both (A) and (B)

(E) None of these.

---

28. Leaves on some trees change colour from green to yellow during ____

(A) Autumn **(B)** Spring **(C)** Summer **(D)** Winter

(E) None of these.

---

29. Cooking oil is obtained from ____

(A) Juice of fruit **(B)** Juice of branches **(C)** Seeds of plants **(D)** Juice of roots

(E) None of these.

---

30. Polluted air contains ____

(A) Smoke **(B)** Dust **(C)** Harmful gases **(D)** All of these

(E) None of these.

---

31. **We use _____ of a tree to make furniture.**

(A) Trunk **(B)** Leaves **(C)** Vein **(D)** Stamen

(E) None of these.

---

32. **Full form of PIN code is ____**

(A) Postal Index Number **(B)** Payable Index Number

(C) Printed Indian Newspaper **(D)** Permanent Index Number

(E) None of these.

---

33. **Largest source of water is ____**

(A) Sea **(B)** Pond **(C)** River **(D)** Ocean

(E) None of these.

---

34. **Which of these properties will change when a glass is broken?**

(A) Its shape **(B)** Its texture **(C)** Its colour **(D)** Its hardness

(E) None of these.

---

35. **The Sun is ____**

(A) Bigger than the earth **(B)** Smaller than the earth

(C) Smaller than the moon **(D)** Equal to the size of the earth

(E) None of these.

---

36. **The city which receives heavy rainfall has ____**

(A) Circular roofs **(B)** Sloping roofs **(C)** Spherical roofs **(D)** Flat roofs

(E) None of these.

---

37. **Which method of separation is shown in the given picture ?**



(A) Filtration

(B) Winnowing

(C) Decantation

(D) Sedimentation

(E) None of these.

---

38. **Cardiac muscles are found in ____**

(A) Brain **(B)** Lungs **(C)** Heart **(D)** Kidney

(E) None of these.

---

39. **Monkey is ____**

(A) A terrestrial animal **(B)** An amphibian

(C) An aerial animal **(D)** An arboreal animal

(E) None of these.

---

40. **How many digits are there in a mobile number ?**

(A) 9 **(B)** 8 **(C)** 7 **(D)** 10

(E) None of these.

---

41. **Which of the following has more bones?**

(A) A man **(B)** A woman **(C)** A boy **(D)** A new born baby

(E) None of these.

---

42. Which of these is omnivorous ?

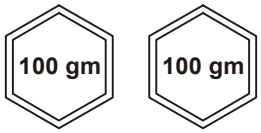
(A) Goat that eats leaves **(B)** Lion that eats deer

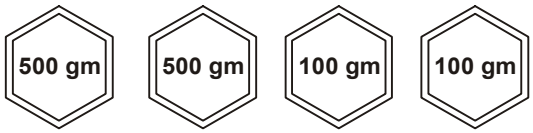
(C) Cow that eats grass **(D)** Bear that eats plants and insects

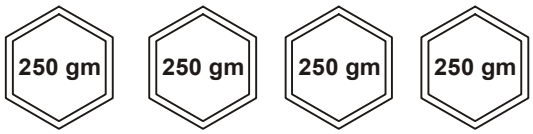
(E) None of these.

---

43. Which group of weights will measure 2 kilograms?

(A) 

(B) 

(C) 

(D) 

(E) None of these.

---

44. The smallest bird is ____

(A) Ostrich **(B)** Sparrow **(C)** Humming bird **(D)** Dove

(E) None of these.

---

45. Who is a carpenter?

(A) Who paints the house **(B)** Who paints the car

(C) Who drives the car **(D)** Who makes the furniture

(E) None of these.

---

46. Which of the following is a solid state of water?

(A) Water **(B)** Ice **(C)** Steam **(D)** Drop

(E) None of these.

---

47. Bees collect _____ from plants.

(A) Nectar **(B)** Juice **(C)** Honey **(D)** Saliva

(E) None of these.

---

48. Kidneys are ____

(A) J shaped **(B)** Circular shaped **(C)** Bean shaped **(D)** Air filled sacs

(E) None of these.

---

49. Which is lightest?

(A) Hot water **(B)** Cold water **(C)** Normal water **(D)** Sea water

(E) None of these.

---

50. The sense organs are controlled by ____

(A) Digestive system **(B)** Nervous system **(C)** Circulatory system **(D)** Respiratory system

(E) None of these.

SPACE FOR FOR ROUGH WORK

SCIENCE OLYMPIAD FOUNDATION

11th NSO

Year 2008

MENTAL ABILITY

1. **What is the value of Δ if** **Q + Q + Q = Δ**
Q + Q = 12

(A) 18 **(B)** 60 **(C)** 17 **(D)** 15
(E) None of these.

---

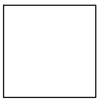
2. **What is the number in the start box ?**



(A) 276 **(B)** 230 **(C)** 182 **(D)** 92
(E) None of these.

---

3. **A wire, 48 cm long is cut equally into 4 pieces, which are bent to make 4 squares of equal sides. The length of each side of one square is**



(A) 3 cm **(B)** 4 cm
(C) 5 cm **(D)** 9 cm
(E) None of these

---

4. **1 plastic plate costs Rs. 2. There are 10 plates in one pack. Rohit bought 4 such packs. How much money did he pay altogether ?**

(A) Rs. 180 **(B)** Rs. 200 **(C)** Rs. 80 **(D)** Rs. 70
(E) None of these

---

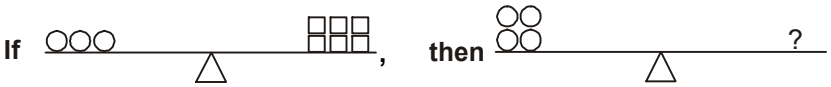
5. **Study the table given here.**
What are the missing numbers ?

95	285	?	435	135	905
90	280	110	430	?	900

(A) 110, 130 **(B)** 110, 140
(C) 115, 130 **(D)** 115, 140
(E) None of these

---

6. **How many** ☐ **do you need on the right side of the second balance ?**



(A) 8 **(B)** 6 **(C)** 2 **(D)** 4
(E) None of these.

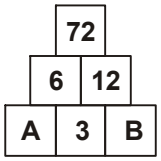
---

7. **A tank can hold 42 litres of water. Mohit pours 9 jugs of water into the tank. If each jug contains 3 litres of water, how many more such jugs of water should he pour into the tank so as to fill it completely ?**

(A) 5 jugs **(B)** 6 jugs **(C)** 15 jugs **(D)** 12 jugs
(E) None of these.

---

8. **A tower of brick is built so that each new brick that is placed on top of two bricks is the product of the numbers on these two bricks. Then values of A and B are**



(A) 2, 8 **(B)** 3, 2
(C) 2, 4 **(D)** 4, 2
(E) None of these

---

9. **Meghna saved Rs 14. Mary saved 1/2 as much as Meghna. If Mary bought a packet of biscuits for Rs 5, how much is left with Mary ?**

(A) Rs. 2 **(B)** Rs. 3 **(C)** Rs. 10 **(D)** Rs. 5
(E) None of these.

---

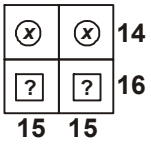
10. If 5  can hold 25 litres of water, then 2 such  can hold _____ litres of water.

(A) 5 L **(B)** 10 L **(C)** 15 L **(D)** 20 L

(E) None of these.

---

11. Find the value of ?, if each row and column are added to give the answer mentioned with them.



(A) 7 **(B)** 8 **(C)** 12 **(D)** 15

(E) None of these.

---

12. Deepak spent 25 minutes drawing a picture of the beach. He took another half an hour to paint the same picture. If he finished painting at 1.05 pm, at what time did he start drawing ?

(A) 12.10 pm **(B)** 12.30 pm **(C)** 12.45 pm **(D)** 12.00 pm

(E) None of these.

---

13. Mona spent Rs. 40 and had Rs. 10 left. What fraction of her money had she spent ?

(A) $\frac{14}{5}$ **(B)** $\frac{40}{5}$ **(C)** $\frac{4}{5}$ **(D)** $\frac{1}{5}$

(E) None of these.

---

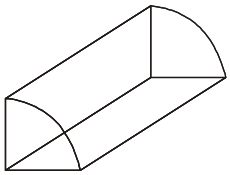
14. Twice as much apricot juice as apple juice is used to make a drink. If 2 cups of apple juice is used, how much apricot juice is used ?

(A) 1 cup **(B)** 4 cups **(C)** 3 cups **(D)** 0 cup

(E) None of these.

---

15. How many faces are there in the given object ?



(A) 6 **(B)** 5

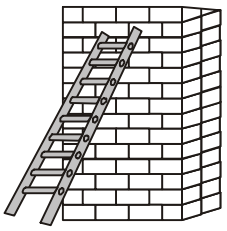
(C) 4 **(D)** 3

(E) None of these.

SCIENCE

16. The picture shows a ladder leaning against a wall.

A person climbing this ladder is using the ladder as



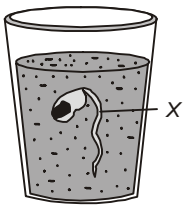
(A) A lever **(B)** A wedge

(C) A simple gear **(D)** An inclined plane

(E) None of these.

---

17. The diagram shows a bean seed that is beginning to germinate in soil.
The first structure to emerge is labelled *X*.
What is the function of *X*?



(A) To make food **(B)** To absorb water **(C)** To produce seeds

(D) To release oxygen **(E)** None of these.

---

18. What is the imaginary line that circles the middle of the Earth called ?

(A) The equator **(B)** The hemisphere **(C)** The line **(D)** Vertical line
(E) None of these

---

19. The amount of matter present in a substance is known as

(A) Mass **(B)** Matter **(C)** Volume **(D)** Length
(E) None of these

---

20. The space that matter occupies is known as

(A) Weight **(B)** Matter **(C)** Volume **(D)** Mass
(E) None of these

---

21. Rain, snow and sleet are forms of which of the following ?

(A) Clouds **(B)** Climate **(C)** Precipitation **(D)** Vapours
(E) None of these.

---

22. What are the stages in the life cycle of a plant ?

(A) Germination, seedling, growth and pollination **(B)** Germination, growth and pollination
(C) Germination and seedling **(D)** Germination, pollination and growth
(E) None of these.

---

23. What is a stem ?

(A) Part of the plant that connects the leaves to the leaves
(B) Part of the plant that connects the roots to the ground
(C) Part of the plant that connects the roots to the leaves
(D) Part of the plant that connects leaves to flower
(E) None of these

---

24. The spines of Cactus plants are modified

(A) Leaves **(B)** Stems **(C)** Flowers **(D)** Roots
(E) None of these.

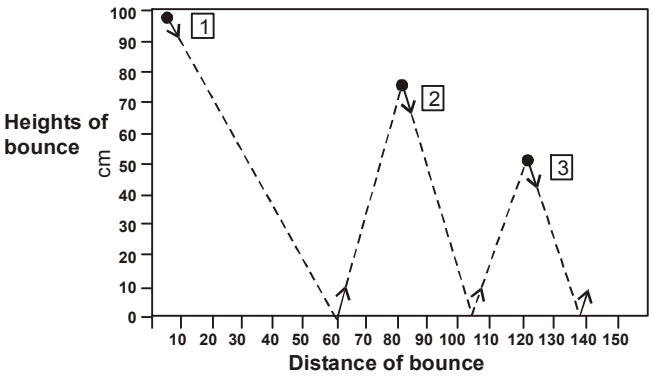
---

25. All living things are made up of

(A) Cells **(B)** Bones **(C)** Stuff **(D)** Blood
(E) None of these.

---

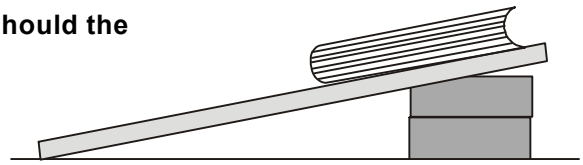
26. A student throws a ball on the ground and it bounces several times as shown in the figure. Which statement best describes the ball's movement ?



(A) The distance between bounces increases as the bounce height decreases
(B) The distance between bounces decreases as the bounce height decreases
(C) The distance between bounces decreases as the bounce height stays the same
(D) The distance between bounces stays the same as the bounce height increases
(E) None of these.

---

27. A book is placed at the top of a ramp made from a board. In order to make the book to slide down the ramp, how should the ramp be changed ?



(A) Make it longer **(B)** Make it rougher
(C) Make it steeper **(D)** Make it wider
(E) None of these.

---

28. How are rocks and minerals related ?

(A) They look alike **(B)** They are the same thing
(C) Minerals are made of rocks **(D)** Rocks are made of minerals
(E) None of these.

---

29. Which bird's foot given below is best suited for grasping prey ?

(A)  **(B)**  **(C)**  **(D)** 

(E) None of these.

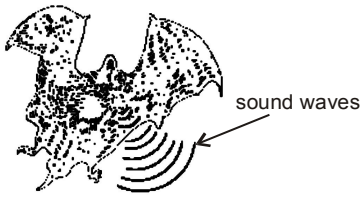
---

30. Clouds are formed from tiny drops of water that are light enough to float in the air. As these drops bump into each other, they form larger drops. What happens when these drops become too heavy to float in the air ?

(A) The drops form fog **(B)** The drops evaporate **(C)** The drops fall as rain **(D)** The drops become air
(E) None of these.

---

31. The given picture shows a bat flying in the dark while making a high-pitched sound. The bat uses sound to find objects in the dark. Which of the following serves the same purpose for a pilot flying an airplane ?



(A) Engine **(B)** Fuel gauge **(C)** Landing gear
(D) Radar system **(E)** None of these.

---

32. Jyoti has put the jar of water outside in the sunlight. Which of the following pictures shows what Jyoti would observe after all of the water had turned into a gas ?

(A)  **(B)**  **(C)**  **(D)** 

(E) None of these.

---

33. Which of the following is NOT something that can happen to water after it falls to Earth ?

(A) It evaporates **(B)** It becomes extinct
(C) It seeps into the ground **(D)** It runs off into lakes and rivers
(E) None of these.

---

34. Natural processes change the surface of Earth. Some changes occur rapidly and some occur slowly. Which of the following would cause the slowest change in Earth's surface ?

(A) Wind **(B)** Landslides **(C)** Volcanoes **(D)** Earthquakes
(E) None of these.

Direction : Use the following information to answer Questions 35 to 37.

Polar bears are the world's largest land predators. Their main prey is seal, but they also eat great quantities of fish. Polar bears generally live only where there is year-round snow and ice.

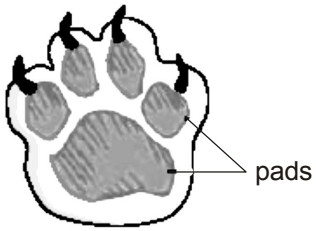


35. The main food source of seals is fish. The polar bears' main food source is seal, but they also eat fish. Which of the following best describes the seal ?

(A) The seal is a prey only
(B) The seal is a predator only
(C) The seal is a predator and a prey
(D) The seal is a producer and a prey
(E) None of these.

---

36. Polar bears have thick foot pads on the soles of their feet. How do these pads, shown in the figure, benefit the bear ?



(A) They help the bear catch more seals
(B) They help the bear climb trees to look for food
(C) They help the bear swim faster when hunting fish
(D) They help the bear walk on ice and protect it against cold
(E) None of these.

---

37. Seals are the main food source of polar bears. Fish are the main food source of seals. Which of the following is a correct food chain showing this relationship ?

(A) 

(B) 

(C) 

(D) 

(E) None of these.

---

38. The given picture shows a nail being attracted by object *X*. The nail moves towards object *X*, but the wood block does not. What kind of energy causes only the nail to move towards object *X* ?



(A) Light **(B)** Heat **(C)** Electric **(D)** Magnetic
(E) None of these.

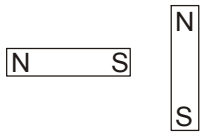
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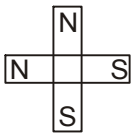
39. What is the main advantage of making a laptop computer light in weight ?

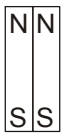
(A) To make it easy to carry
(B) To keep it simple
(C) To make the screen easy to read
(D) To provide storage for an electrical cord
(E) None of these.

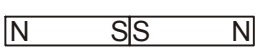
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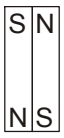
40. The given diagram represents two bar magnets. Which of the following diagrams shows the correct position of the magnets as the two magnets are moved closer together ?



(A) 

(B) 

(C) 

(D) 

(E) None of these.

---

41. Stages in the life cycle of a frog are shown below. In which stage can a frog live on land ?

(A) 

(B) 

(C) 

(D) 

(E) None of these.

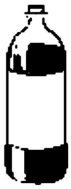
---

42. John needs to split a log. He has a sledge hammer. What other tool should he also use to split the log ?

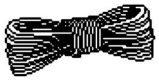
(A) A lever **(B)** A pulley **(C)** A wedge **(D)** A fulcrum
(E) None of these.

---

43. Which of the following objects will affect the direction that a compass needle points ?

(A) 

(B) 

(C) 

(D) 

(E) None of these.

---

44. In Colonial America people used ice to help keep foods fresh. They cut the ice from lakes and ponds during the winter and stored the ice in icehouses. They sometimes used hay as an insulator to prevent the ice from melting.
If you want to build an icehouse today, which of the following would be the best material to use as an insulator ?

(A) Dried leaves **(B)** Foam blocks **(C)** Plastic wrap **(D)** Rock salt
(E) None of these.

---

45. If enough heat is taken away from a container of water, what will happen to the water ?

(A) It will begin to boil **(B)** It will become a solid **(C)** It will turn into a gas
(D) It will increase in weight **(E)** None of these.

---

46. Which of these is a herbivore ?

(A) A cat that eats mice
(B) A cow that eats grass
(C) A frog that eats insects
(D) An opossum that eats fruit and fish
(E) None of these.

---

47. Even on the coldest winter days, there is some heat in the air. Almost all of the heat in the air comes from

(A) Forest fires **(B)** Volcanoes **(C)** The Sun **(D)** The wind
(E) None of these.

---

48. A solar cell turns sunlight into another form of energy. A solar cell is similar to

(A) An elephant's ears **(B)** A plant's leaves **(C)** A deer's hooves **(D)** A tree's roots

(E) None of these.

---

49. Which of the following lists the Earth, the Jupiter and the Moon in order from largest to the smallest ?

(A) Earth, Jupiter, Moon **(B)** Jupiter, Earth, Moon

(C) Moon, Jupiter, Earth **(D)** Jupiter, Moon, Earth

(E) None of these.

---

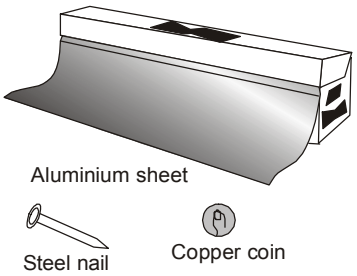
50. The given pictures show three objects that can be classified in the same group. Which of the following statements is true for all three of these objects ?

(A) They are metals **(B)** They rust rapidly

(C) They weigh the same

(D) They are of same colour

(E) None of these.



SPACE FOR ROUGH WORK

SCIENCE OLYMPIAD FOUNDATION

12th NSO

Year 2009

MENTAL ABILITY

1. Tina's mother put these cookies on a plate.



Tina takes one cookie without looking. Which will she most likely get ?

(A)  **(B)**  **(C)**  **(D)** 

---

2. Place value and face value of a number is always equal at

(A) One's Place **(B)** Ten's place **(C)** Hundred's Place **(D)** None of these

---

3. 1 billion = ____ crores

(A) 1 **(B)** 10 **(C)** 100 **(D)** 1000

---

4. Niti saves the same amount of money each week.

Niti's Savings

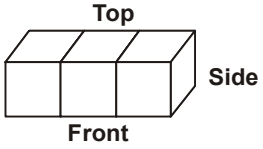
Week	Total Amount Saved
1	Rs. 2.25
2	Rs. 4.50
3	Rs. 6.75
4	

How much will Niti save by week 4 ?

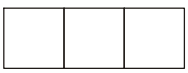
(A) Rs. 3.50 **(B)** Rs. 5.50 **(C)** Rs. 8.00 **(D)** Rs. 9.00

---

5. The given figure is made of 3 small cubes.



Which best shows the side view of the figure?

(A)  **(B)**  **(C)**  **(D)** 

---

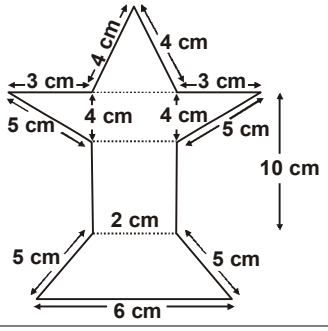
6. Ravi made a given picture using wire. The length of wire is

(A) 40 cm

(B) 70 cm

(C) 39 cm

(D) 52 cm



---

7. Vineeta is $1\frac{1}{2}$ years old. How many months are equal to $1\frac{1}{2}$ years ?

(A) 10 months **(B)** 12 months **(C)** 18 months **(D)** 24 months

---

8. Which is equal to 7×8 ?

(A) $7 + 7 + 7 + 7 + 7 + 7 + 7$ **(B)** $7 \times 7 \times 7 \times 7 \times 7 \times 7 \times 7 \times 7$

(C) $8 + 8 + 8 + 8 + 8 + 8 + 8$ **(D)** $8 \times 8 \times 8 \times 8 \times 8 \times 8 \times 8$

---

9. A class makes a chart about what kind of pets they have.

Pets chart

Types of Pet	Number of Pets
Fish	𝍸 𝍸 | | |
Dog	𝍸 𝍸 | | | |
Cat	𝍸 𝍸 𝍸 | | | |

Which of the following statements is true about the number of pets in the above chart ?

(A) Fish > cat > dog **(B)** Fish > dog > cat **(C)** Dog > fish > cat **(D)** Fish < dog < cat

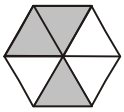
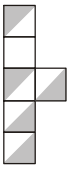
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10. There are 32 students in a class. There are 13 girls in the class. What is the fraction of boys in the class ?

(A) $\frac{19}{32}$ **(B)** $\frac{13}{32}$ **(C)** $\frac{32}{19}$ **(D)** $\frac{32}{13}$

---

11. Which has $\frac{1}{3}$ part shaded ?

(A)  **(B)**  **(C)**  **(D)** 

---

12. Month September ends on a Tuesday. On which day Christmas will be celebrated ?

(A) Monday

(B) Tuesday

(C) Thursday

(D) Wednesday

September						
M	T	W	T	F	S	**S**
1	2	3	4	5	6	**7**
8	9	10	11	12	13	**14**
15	16	17	18	19	20	**21**
22	23	24	25	26	27	**28**
29	30					

---

13. Look at the pattern below :

82, 88, 94, _____, 106, 112

What is the missing number ?

(A) 102 **(B)** 100 **(C)** 98 **(D)** 96

---

14. Which shows flip across the line?

(A)  **(B)**  **(C)**  **(D)** 

---

15. What is the sum of the (difference between the place value & face value of 6 in 46530) and (the place value of 6 in 53602) ?

(A) 6954 **(B)** 6594 **(C)** 5994 **(D)** 5499

---

16. Trees and other plants need energy from the Sun to live. What form of energy does the tree get from the Sun?

(A) Light energy **(B)** Electrical energy **(C)** Chemical energy **(D)** Sound energy

17. The organ which is J-shaped is _____

(A) Stomach **(B)** Liver **(C)** Pancreas **(D)** Kidney

18. Which cycle is correct ?

(A) Seedling → Seed → Fruit → Flower **(B)** Baby → Child → Teenager → Adult

(C) Seed → Mature plant → Fruit → Seedling **(D)** Baby → Teenager → Child → Adult

19. Which kind of energy is produced when a student beats a drum ?

(A) Electrical **(B)** Sound **(C)** Light **(D)** Chemical

20. Electricity travelling through a wire is an example of _____

(A) A force applied by a simple machine **(B)** Energy flowing through the water cycle

(C) Earth's gravitational pull on an object **(D)** Energy being transferred from place to place

21. A toaster changes electrical energy to _____

(A) Heat energy **(B)** Solar energy **(C)** Sound energy **(D)** Magnetic energy

22. Which food is an example of a healthy snack ?

(A) An apple **(B)** A candy bar **(C)** Cookies **(D)** Potato chips

23. Which list below best shows how energy moves in a food chain ?

(A) Grass → Cows → Humans → Sun **(B)** Sun → Grass → Cows → Humans

(C) Humans → Cows → Grass → Sun **(D)** Cows → Grass → Sun → Humans

24. The given figure shows a potato plant in a cup. The cup was originally filled to the top with water. Which statement best explains why the cup no longer contains water ?



(A) The water froze

(B) The water condensed

(C) The water was taken up by the roots

(D) The water was moved by gravity

25. A student planted the same kind of seeds in pots *P* and *Q*. She planted five seeds in pot *P* and five seeds in pot *Q*. The amount and type of soil in both pots was the same. She added the same amount of water to both pots each week. Pot *P* was placed by a sunny window. Pot *Q* was placed in a dark room. After four weeks, she observed the plants in both pots. The plants in pot *P* were green, with tall and thick stems. The plants in pot *Q* were yellow, with tall and thin stems.

Which statement best explains why the plants in pot *P* were different from the plants in pot *Q* ?

(A) Pot *P* contained more soil than pot *Q* **(B)** Pot *P* contained more seeds than pot *Q*

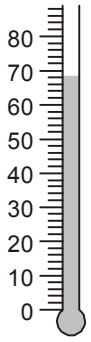
(C) Pot *P* received more sunlight than pot *Q* **(D)** Pot *P* received more water than pot *Q*

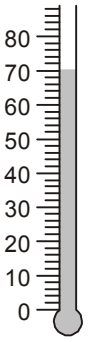
26. The chart below shows temperatures recorded from Monday to Friday during a week in June.

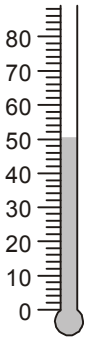
Temperatures for the week

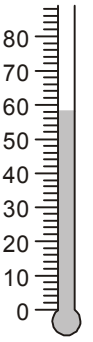
Day	Temperature (°F)
Monday	72
Tuesday	76
Wednesday	68
Thursday	70
Friday	70

Which thermometer shows the temperature recorded on Wednesday ?

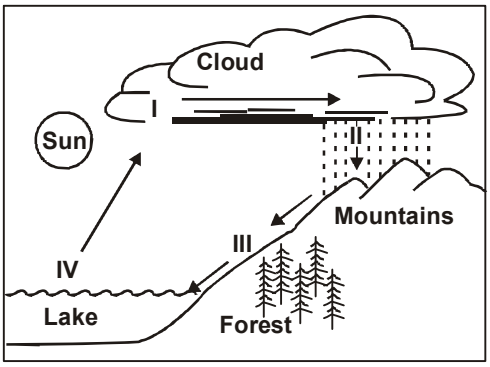
(A) 

(B) 

(C) 

(D) 

Direction:- **Refer the given figure of water cycle to answer Q.no. 27 to 29. Four parts of the water cycle are labelled as I, II, III and IV.**



27. Which process is occurring at IV ?

(A) Condensation

(B) Evaporation

(C) Precipitation

(D) Run off

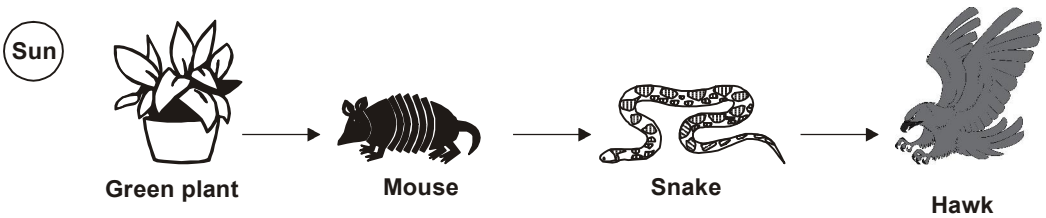
28. Water flowing on Earth's surface at III is called _____

(A) Condensation **(B)** Evaporation **(C)** Precipitation **(D)** Run off

29. Which process is occurring at II ?

(A) Condensation **(B)** Evaporation **(C)** Precipitation **(D)** Run off

30. A food chain is shown below.



Which population would most likely decrease if the number of mice greatly increased ?

(A) Green plants **(B)** Mice **(C)** Snakes **(D)** Hawks

31. A jar weighs 100 g when empty. When water is added, the jar and water together weigh 125 g. What is the weight of the water added to the jar ?

(A) 25 g **(B)** 100 g **(C)** 125 g **(D)** 225 g

32. The roof of a house gets very hot in the summer. Light-coloured roofs reflect heat. Dark-coloured roofs absorb heat. The table below shows the summer temperature of roofs of four different houses.

Temperature of Roofs in the Summer

Roof	Temperature
1	75°C
2	81°C
3	52°C
4	83°C

Which roof is most likely lightest in colour?

(A) Roof 1 **(B)** Roof 2 **(C)** Roof 3 **(D)** Roof 4

---

33. Human arms are most similar to which physical structure of birds ?

(A) Beak **(B)** Feathers **(C)** Legs **(D)** Wings

---

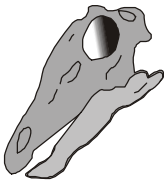
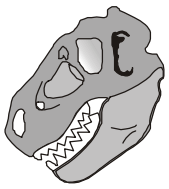
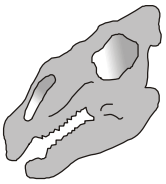
34. Which sentence best describes the particles in dry sand ?

(A) They all are of the same colour **(B)** They clump together easily

(C) They float in water **(D)** They all are of same size

---

35. Which skull is of a dinosaur that was probably a carnivore ?

(A)  **(B)**  **(C)**  **(D)** 

---

36. What may a scientist do to find out how fast a plant grows taller ?

(A) Give the plant a half-cup of water each day **(B)** Put the plant in a sunny place each day

(C) Measure the plant with a ruler each day **(D)** Put the plant on a scale each day and weigh it

---

37. Which of the following is not required by a fish to live ?

(A) Food **(B)** Sand **(C)** Water **(D)** Oxygen

---

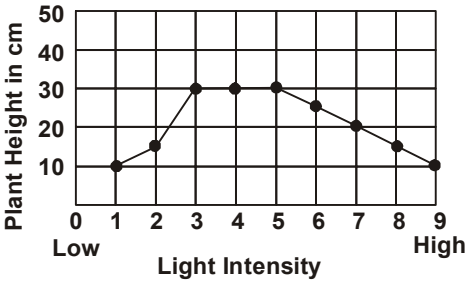
38. Nine bean plants grow in different amounts of light. Which is the best conclusion for the data in the graph ?

(A) Bean plants grow best in low light

(B) Bean plants grow best in high light

(C) Bean plants grow best in moderate light

(D) Bean plants grow same in all light conditions



---

39. A girl finds an animal skull. She does not know which animal it is . She is sure that it ate other animals for food. Which clue leads her to conclusion?

(A) The eye sockets faced sideways **(B)** The skull was much longer than it was wide

(C) There was a projecting ridge on the front of the skull **(D)** Four of the teeth were long and pointed

---

40. What do all plants need most to stay alive ?

(A) Earthworms **(B)** Fertilizer **(C)** Shelter **(D)** Sunlight

---

41. A new law says no one can hunt deer in the woods. Which is most likely to happen next year in the woods ?

(A) Trees will increase **(B)** Deer will decrease

(C) Insects will increase **(D)** Small plants will decrease

---

42. In the given table few substances are classified according to their nature as solid, liquid or gas. Which of the following is incorrectly placed ?

Solid	Liquid	Gas
brick	milk	steam
pencil	ice cube	oxygen
eraser	orange juice	water vapour

(A) Steam **(B)** Pencil

(C) Milk **(D)** Ice cube

---

43. What are the four main parts of a flower ?

(A) Stamen, pistil, sepal and roots **(B)** Roots, pistil, stamen and petals

(C) Sepal, leaves, petals and thorns **(D)** Sepal, pistil, stamen and petals

---

44. We can watch direct telecast of a cricket match played in England on TV through _____

(A) Internet **(B)** Satellite **(C)** E-mail **(D)** Both (A) & (B)

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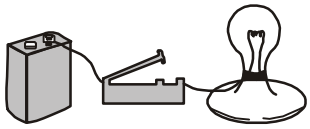
45. A peanut in a shell and peas in pod are examples of _____ .

(A) Fruit **(B)** Leaf **(C)** A pistil **(D)** A stamen

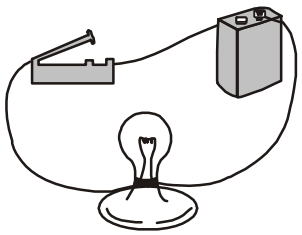
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46. Each picture shows a battery, a bulb and a switch. Which bulb will light when the switch is closed ?

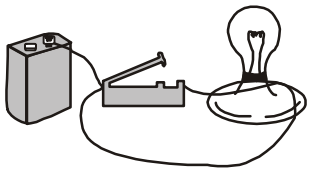
(A)



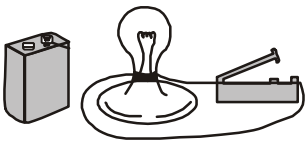
(B)



(C)



(D)



---

47. Which of the following plants does not produce seeds ?

(A) Fern **(B)** Rose **(C)** Apple tree **(D)** Conifer

---

48. The movement of one object around another is called _____ .

(A) An eclipse **(B)** A revolution **(C)** An axis **(D)** A rotation

---

49. Why are the days shorter and colder in winter ?

(A) The Moon is causing fewer rays to get to the Earth

(B) There are more clouds covering the Earth and blocking the Sun

(C) The earth is tilted away from the sun and the sun's rays strike the earth less directly

(D) The earth is spinning slower during this time

---

50. The blocking of sunlight by the moon as the moon passes between the sun and the earth is called a _____.

(A) Solar eclipse **(B)** Lunar eclipse **(C)** Solar cycle **(D)** Lunar cycle

---

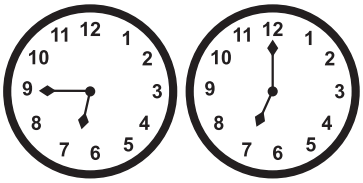
SCIENCE OLYMPIAD FOUNDATION

13th NSO

Year 2010

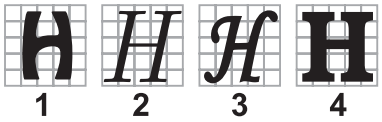
MENTAL ABILITY

1. The minute hand of a clock moved from 9 to 12. What part of an hour is this?



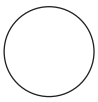
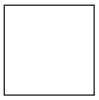
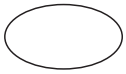
(A) One quarter
(B) One half
(C) Three quarters
(D) One whole

2. Which of the following figures has a line of symmetry?

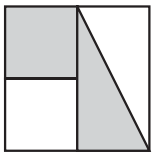


(A) 1 & 4 **(B)** 2 & 4
(C) 1, 2 & 4 **(D)** Only 4

3. Which of the following shapes could be the face of a cube?

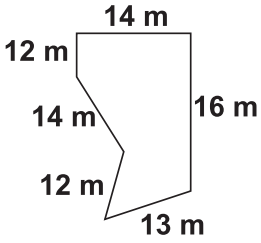
(A)  **(B)**  **(C)**  **(D)** 

4. In the given figure, what fraction of the square is shaded?



(A) $\frac{1}{4}$ **(B)** $\frac{1}{2}$ **(C)** $\frac{1}{6}$ **(D)** $\frac{1}{8}$

5. What is the perimeter of the given figure?



(A) 81 m
(B) 91 m
(C) 101 m
(D) 71 m

6. How can 306,470 be written in words ?

(A) Thirty-six thousand, four hundred seventy
(B) Three hundred six thousand, four hundred seventy
(C) Thirty-six thousand, forty-seven
(D) Three hundred six thousand, forty-seven

7. What is the rule followed in the given Input-Output table ?

Input	Output
27	62
56	91
75	110
109	144

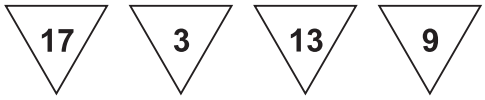
(A) Add 25
(B) Add 35
(C) Add 36
(D) Add 45

8. Rinki is helping a local organization by stuffing envelopes. She must stuff 500 envelopes. She has already stuffed 321 envelopes. Which equation can be used to find the number of envelopes that she has left to stuff ?

(A) $500 + 321 = n$ **(B)** $500 \times 321 = n$ **(C)** $500 \div 321 = n$ **(D)** $500 - 321 = n$

9. Which one of the following statements about the given numbers is true?

(A) They are all factors of 39
(B) They are all divisible by 3
(C) They are all odd numbers
(D) They are all even numbers



10. Look at the given pattern of numbers.

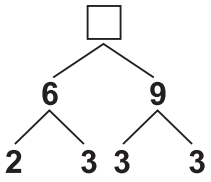
60, 75, 90, 105, 120, 135, ...

What is the rule used for this pattern?

(A) Each number is 25 greater than the number before it
(B) Each number is 15 greater than the number before it
(C) Each number is 15 less than the number before it
(D) Each number is 25 less than the number before it

11. A factor tree is shown in the figure. What number belongs in the box?

(A) 27
(B) 54
(C) 69
(D) 15



12. Look at the picture below. It shows the lengths of a necklace and a bracelet.



Which equation can be used to find *n*, the combined length of the necklace and the bracelet?

(A) $18 \times 6 = n$ **(B)** $18 - 6 = n$ **(C)** $18 + 6 = n$ **(D)** $18 \div 6 = n$

13. Arvind went to the doctor on February 6. His next appointment is 2 weeks later. How can he find the date of next appointment?

(A) Add 6 and 2 **(B)** Subtract 2 from 6 **(C)** Add 6 and 7 and 7 **(D)** Subtract 3 from 6

14. Look at the given table. It shows how many minutes Mohit read his book each day for three days.
If this pattern continues on Thursday, what is the total number of minutes taken by Mohit to read his book in these four days?

Day	Minutes
Monday	15
Tuesday	20
Wednesday	25
Thursday	

(A) 90 minutes **(B)** 60 minutes **(C)** 125 minutes **(D)** 75 minutes

15. Bhaskar had a 1-litre bottle of water. He drank half of the water. How much water is left in the bottle?

(A) 50 millilitres **(B)** 500 millilitres **(C)** 25 millilitres **(D)** 75 millilitres

16. Frozen water is called _____

(A) Fog **(B)** Ice **(C)** Steam **(D)** Vapour

17. Which sense can be used to determine an object's ability to reflect light?

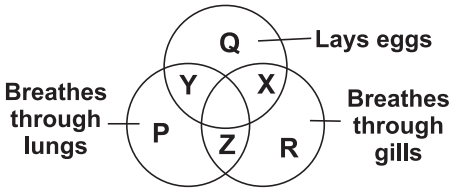
(A) Sight **(B)** Hearing **(C)** Smell **(D)** Taste

18. Which unit can be used to describe an object's length?

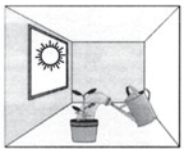
(A) Grams **(B)** Minutes **(C)** Litres **(D)** Metres

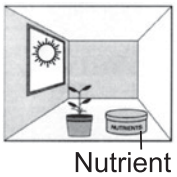
19. Study the given Venn diagram carefully.
Which letter represents the hen?

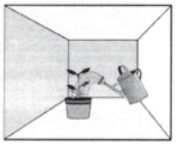
(A) Y **(B)** X
(C) Z **(D)** R



20. Plants need water, sunlight, air, and nutrients to grow tall. Which of these plants would grow the tallest ?

(A) 

(B) 

(C) 

(D) 

21. Given is a description of a plant.
Which one of the following is the plant likely to be?

I am a land plant.
I have flowers which grow singly.
My flowers give off a nice smell.

(A) Rose **(B)** Lotus **(C)** Dahlia **(D)** Sunflower

22. Which of the following characteristics can a puppy inherit from its parents?

(A) Muddy paws **(B)** Spotted fur **(C)** Broken foot **(D)** Scar on face

23. Which structure of a bird is correctly paired with its function?

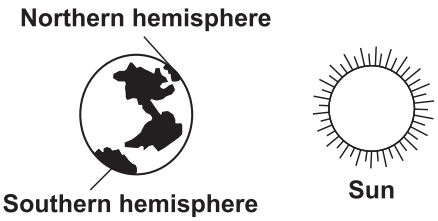
(A) Claws – Obtaining food **(B)** Wings – Eliminating waste
(C) Feathers – Breathing **(D)** Eyes – Growing

24. The given figure shows a fox and an owl both trying to catch a rabbit.
The fox and the owl are both _____

(A) Finding a mate **(B)** Competing for food
(C) Seeking shelter **(D)** Migrating for winter



25. Which of the following statements is NOT true for the positions of Sun and Earth as shown in the figure?



(A) At the North pole there is sunlight throughout the day and night.
(B) At the South pole there is no day light at all.
(C) It is summer in the Northern hemisphere. **(D)** It is summer in the Southern hemisphere.

26. The energy that is stored in food originally comes from _____

(A) Air **(B)** Soil **(C)** Sunlight **(D)** Water

27. Which human response is most likely to occur when the temperature of the atmosphere is 45°C?

(A) Blinking **(B)** Salivating **(C)** Shivering **(D)** Sweating

28. As children grow, their height usually _____

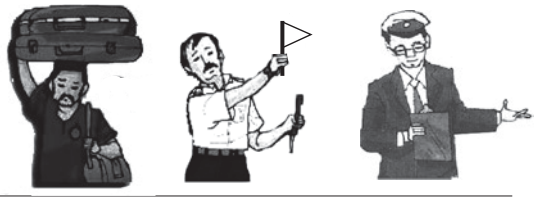
(A) Decreases **(B)** Increases **(C)** Remains the same **(D)** Cannot say

29. A student places soil in a plastic container to make a home for some worms. The student cuts holes in the top of the container because the worms need ___

(A) Space to move **(B)** Air to breathe

(C) Sunlight to grow **(D)** Sound to communicate

30. The persons shown in the given figures belong to which transport system?



(A) Bus **(B)** Ship

(C) Train **(D)** Both (B) & (C)

31. Which of the following behaviours will best help a student to stay healthy?

(A) Watching television five hours a day **(B)** Sleeping three hours each night

(C) Eating fruits and vegetables every day **(D)** Exercising once a month

32. Which of the following animals can be used as means of transport ?

(A) (a), (b) & (c)

(B) (b), (c) & (d)

(C) (a) & (e)

(D) (a), (b) & (e)



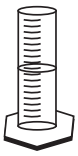
a b c d e

33. A student wants to measure the height of a plant over a period of time. Which instrument will he use?

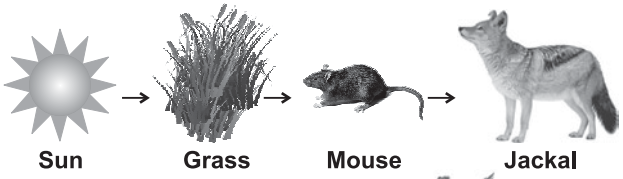
(A) 

(B) 

(C) 

(D) 

34. The given figure shows a simple food chain. Which of the following animals might compete with the jackal in this food chain?



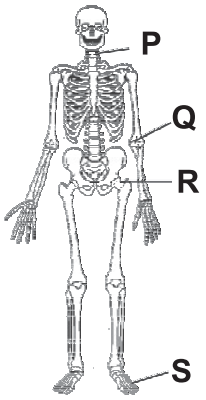
(A) 

(B) 

(C) 

(D) 

35. The given figure is of human skeletal system. At which joint (P, Q, R and S) can the movement be only like the opening and closing of a door ?



(A) P

(B) Q

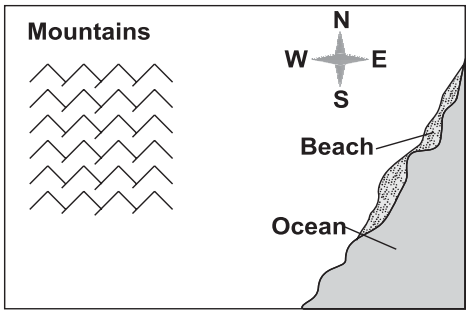
(C) R

(D) S.

36. Which of the following is a function of the skeletal system ?

(A) Support **(B)** Protection **(C)** Calcium storage **(D)** All of these

37. A student is sitting at the beach. Which direction are the mountains from the student?



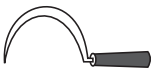
(A) North

(B) East

(C) South

(D) West

38. Select the correct match.

	Column I	Column II
(A)	Mason	
(B)	Carpenter	
(C)	Electrician	
(D)	Gardener	

39. Decantation can be represented by which of the following figures?

(A)  **(B)**  **(C)**  **(D)** 

40. Birds that eat other birds usually have short, curved beaks and strong feet with sharp claws. Which of these birds most likely eats other birds?

(A) 
Parrot

(B) 
Dove

(C) 
Hawk

(D) 
House sparrow

41. Which of the following planets is closest in size to Earth?

(A) Mars
(B) Saturn
(C) Venus
(D) Jupiter

Planet diameters (Kilometres)

Earth	Mars	Saturn	Venus	Jupiter
12,756	6,794	125,536	12,104	142,984

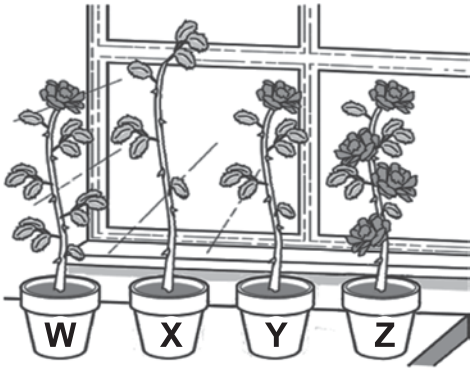
42. Students recorded the high and low air temperatures everyday for four days. On which day did the air temperature change the least?

(A) Monday
(B) Tuesday
(C) Wednesday
(D) Thursday

Days	Low temperature (°F)	High temperature (°F)
Monday	66	82
Tuesday	68	80
Wednesday	68	82
Thursday	64	78

43. A gardener watered each of these containers with equal amounts of water. Only one container was given fertilizer. To which plant was the fertilizer added ?

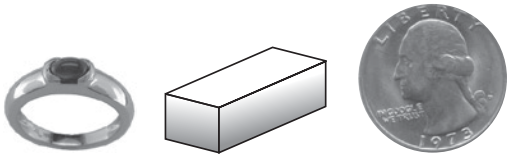
(A) Plant W
(B) Plant X
(C) Plant Y
(D) Plant Z



44. If two trees in a yard are parent and offspring, it must be true that both trees ___

(A) Have the same number of flower blooms **(B)** Have leaves that are of the same shape
(C) Produce the same amount of fruits **(D)** Are of same height

45. Which of the following properties is NOT shared by all the objects shown in the figure ?



Gold ring **Brick** **Coin**

(A) They all are solids.
(B) They will all sink in water.
(C) They will all attract a magnet.
(D) They all are made from earth materials.

46. Using solar energy, we can cook food with the help of ____

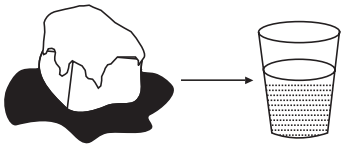
(A) Solar water heater **(B)** Solar battery **(C)** Solar cooker **(D)** None of these

47. The thick fur of animals living in colder regions _____

(A) Makes them appear beautiful **(B)** Protects them from enemies
(C) Keeps them warm **(D)** Protects them from water

48. The change that is occurring in the given figure is ____ .

(A) Boiling **(B)** Melting
(C) Freezing **(D)** Evaporation



49. Which of the following is INCORRECT regarding the care of our teeth?

(A) We must brush our teeth everyday.
(B) We should not chew our food well.
(C) We should eat raw vegetables.
(D) We should clean our mouth with water after every meal.

50. Which is the correct way of disposing garbage?

(A) Throwing on the roof
(B) Throwing in the backyard of the house
(C) Throwing into covered pits
(D) Throwing in the playground

SPACE FOR ROUGH WORK

ANSWER KEYS

9TH NSO

1.	(C)	**2.**	(D)	**3.**	(C)	**4.**	(B)	**5.**	(B)	**6.**	(A)	**7.**	(A)
8.	(B)	**9.**	(C)	**10.**	(D)	**11.**	(C)	**12.**	(B)	**13.**	(B)	**14.**	(D)
15.	(A)	**16.**	(A)	**17.**	(B)	**18.**	(C)	**19.**	(D)	**20.**	(C)	**21.**	(A)
22.	(C)	**23.**	(A)	**24.**	(C)	**25.**	(C)	**26.**	(B)	**27.**	(A)	**28.**	(A)
29.	(B)	**30.**	(C)	**31.**	(A)	**32.**	(D)	**33.**	(C)	**34.**	(D)	**35.**	(C)
36.	(A)	**37.**	(B)	**38.**	(C)	**39.**	(C)	**40.**	(C)	**41.**	(B)	**42.**	(D)
43.	(A)	**44.**	(C)	**45.**	(D)	**46.**	(A)	**47.**	(B)	**48.**	(A)	**49.**	(B)
50.	(A)												

10TH NSO

1.	(D)	**2.**	(A)	**3.**	(B)	**4.**	(B)	**5.**	(C)	**6.**	(D)	**7.**	(D)	**8.**	(B)
9.	(A)	**10.**	(A)	**11.**	(D)	**12.**	(A)	**13.**	(C)	**14.**	(C)	**15.**	(C)	**16.**	(A)
17.	(B)	**18.**	(C)	**19.**	(D)	**20.**	(B)	**21.**	(A)	**22.**	(C)	**23.**	(A)	**24.**	(D)
25.	(B)	**26.**	(B)	**27.**	(B)	**28.**	(A)	**29.**	(C)	**30.**	(D)	**31.**	(A)	**32.**	(A)
33.	(D)	**34.**	(A)	**35.**	(A)	**36.**	(B)	**37.**	(A)	**38.**	(C)	**39.**	(D)	**40.**	(D)
41.	(D)	**42.**	(D)	**43.**	(D)	**44.**	(C)	**45.**	(D)	**46.**	(B)	**47.**	(A)	**48.**	(C)
49.	(A)	**50.**	(B)												

11TH NSO

1.	(A)	**2.**	(D)	**3.**	(A)	**4.**	(C)	**5.**	(C)	**6.**	(A)	**7.**	(A)
8.	(C)	**9.**	(A)	**10.**	(B)	**11.**	(B)	**12.**	(A)	**13.**	(C)	**14.**	(B)
15.	(B)	**16.**	(D)	**17.**	(B)	**18.**	(A)	**19.**	(A)	**20.**	(C)	**21.**	(C)
22.	(A)	**23.**	(C)	**24.**	(A)	**25.**	(A)	**26.**	(B)	**27.**	(C)	**28.**	(D)
29.	(A)	**30.**	(C)	**31.**	(D)	**32.**	(B)	**33.**	(B)	**34.**	(A)	**35.**	(C)
36.	(D)	**37.**	(B)	**38.**	(D)	**39.**	(A)	**40.**	(D)	**41.**	(D)	**42.**	(C)
43.	(D)	**44.**	(B)	**45.**	(B)	**46.**	(B)	**47.**	(C)	**48.**	(B)	**49.**	(B)
50.	(A)												

12TH NSO

1.	(C)	**2.**	(A)	**3.**	(B)	**4.**	(D)	**5.**	(A)	**6.**	(D)	**7.**	(C)
8.	(C)	**9.**	(D)	**10.**	(A)	**11.**	(D)	**12.**	(C)	**13.**	(B)	**14.**	(A)
15.	(B)	**16.**	(A)	**17.**	(A)	**18.**	(B)	**19.**	(B)	**20.**	(D)	**21.**	(A)
22.	(A)	**23.**	(B)	**24.**	(C)	**25.**	(C)	**26.**	(A)	**27.**	(B)	**28.**	(D)
29.	(C)	**30.**	(A)	**31.**	(A)	**32.**	(C)	**33.**	(D)	**34.**	(D)	**35.**	(B)
36.	(C)	**37.**	(B)	**38.**	(C)	**39.**	(D)	**40.**	(D)	**41.**	(D)	**42.**	(D)
43.	(D)	**44.**	(B)	**45.**	(A)	**46.**	(B)	**47.**	(A)	**48.**	(B)	**49.**	(C)
50.	(A)												

13TH NSO

1.	(A)	**2.**	(A)	**3.**	(C)	**4.**	(B)	**5.**	(A)	**6.**	(B)	**7.**	(B)
8.	(D)	**9.**	(C)	**10.**	(B)	**11.**	(B)	**12.**	(C)	**13.**	(C)	**14.**	(A)
15.	(B)	**16.**	(B)	**17.**	(A)	**18.**	(D)	**19.**	(A)	**20.**	(D)	**21.**	(A)
22.	(B)	**23.**	(A)	**24.**	(B)	**25.**	(D)	**26.**	(C)	**27.**	(D)	**28.**	(B)
29.	(B)	**30.**	(C)	**31.**	(C)	**32.**	(D)	**33.**	(A)	**34.**	(B)	**35.**	(B)
36.	(D)	**37.**	(D)	**38.**	(D)	**39.**	(B)	**40.**	(C)	**41.**	(C)	**42.**	(B)
43.	(D)	**44.**	(B)	**45.**	(C)	**46.**	(C)	**47.**	(C)	**48.**	(B)	**49.**	(B)
50.	(C)												