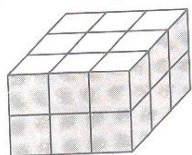


LOGICAL REASONING

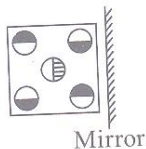
1. While going to his office P meets a man Q who is related to P, because P has R, a son, who is married to T. T is the daughter of Q. T has a daughter A. How is P related to A?
- Grandfather
 - Grandmother
 - Uncle
 - Father-in-law

2. Count the number of unit cubes in the given solid.

- 10
- 15
- 18
- 22



3. Find the CORRECT mirror image of the given figure.

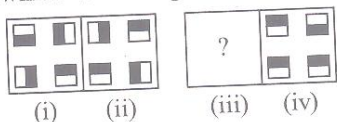


-
-
-
-

4. If the English alphabets are written in reverse order after interchanging alphabets from 'C to M' with those from 'P to Z' respectively, which letter would be midway between F and T in the new order?

- Z
- M
- N
- X

5. There is a definite relationship between figures (i) and (ii). Establish a similar relationship between figures (iii) and (iv) by selecting a suitable figure from the options which would replace the (?) in fig (iii).

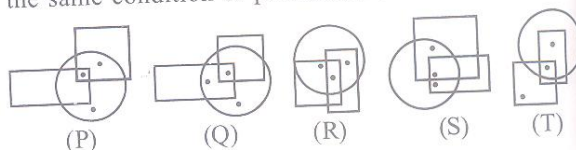


-
-
-
-

6. If in a certain code, O is written as P, A as B, M as N, S as T and so on, then how will COMPANIES be written in that code?

- DPNQBOJET
- DPOQBPIES
- DPNQBJOFT
- DPNQBOJFT

7. Select a pair of figures from the options which has the same condition of placement of dots.



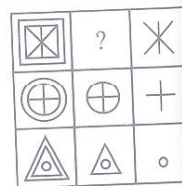
- P, Q
- Q, R
- R, S
- S, T

8. A man walks northwards. After a while he turns towards his right and walks straight then he moved little further to his left. Finally, after walking a distance of one kilometre he turns to his left again. In which direction is he moving now?

- North
- South
- East
- West

9. Which of the following figures will complete the given figure matrix?

-
-
-
-



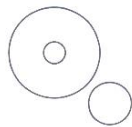
10. A set of figures carrying certain characters is given. If the characters in each set follow a similar pattern, find the missing character.

15		18		21	
90	75	108	90	?	105

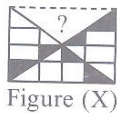
- 78
- 126
- 140
- 132

11. 583 is related to 295 in the same way as 488 is related to _____.
- A. 291
B. 497
C. 487
D. 581

12. Which of the following elements satisfies the Venn diagram given here?
- A. Judge, Thief, Criminal
B. Father, Mother, Parents
C. Teacher, College, Student
D. Polygons, Rectangles, Squares



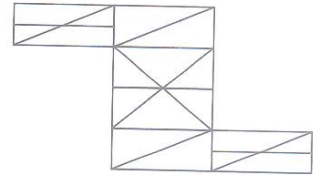
13. Which of the following parts will complete the pattern in figure (X)?



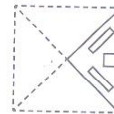
- A. B. C. D.

14. Count the number of triangles in the given figure.

- A. 26
B. 17
C. 18
D. None of these



15. A square sheet of paper is folded in a particular manner and punched in the manner shown. Select the figure amongst the options, that would most closely resemble the unfolded form of given sheet.



- A. B. C. D.

SCIENCE

16. Read the given statements and mark the correct option.

- (i) A metal coin of 10 gram is heavier than a feather of the same mass.
(ii) The inertia of an object depends on the size of the object.
(iii) When the mass of an object increases, the weight of the object always increases.

- A. (i) only
B. (ii) and (iii) only
C. (iii) only
D. None of these

17. An image that is not produced by light rays coming from the image but is the result of your brain's interpretations of these light rays is called a/an _____.

- A. Real image
B. Virtual image
C. Imagined image
D. None of these

18. In which of the following cases, the frictional force between the tyres of a car and the road increases?

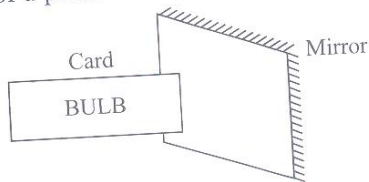
- A. When the road is wet.
B. When the speed of the car increases.

- C. When the surface area of the tyres in contact with the road increases.
D. When there are more passengers in the car.

19. Which of the following iron cores has more strength as compared to others?

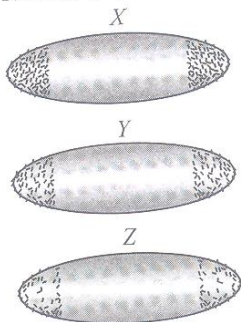
- A. Iron core
B. Iron core
C. Iron core
D. Iron core

20. A card with the word BULB written on it, is placed in front of a plane mirror, as shown in the figure.



The image of the word BULB seen in the mirror is

- A. BULB
 B. BLUB
 C. BULB
 D. BULB
21. Three magnets X, Y and Z were dipped one by one in a heap of iron filings. Figure shows the amount of the iron filings stuck to them.



The strength of these magnets will be in the order

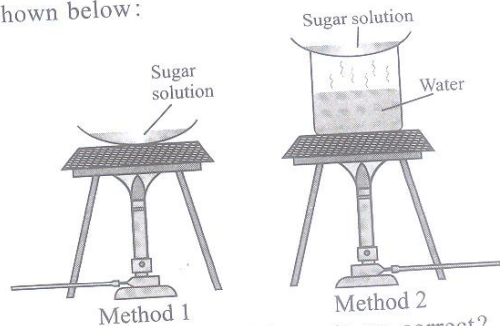
- A. $X > Y > Z$
 B. $X < Y < Z$
 C. $X = Y = Z$
 D. $X < Y > Z$
22. Consider the motion of the tip of the minute hand of a clock. In one hour
- A. The distance covered is zero
 B. The displacement is zero
 C. The average speed is zero
 D. None of these
23. The terminals of a battery are joined by a length of resistance wire. Which of the following changes will increase the current in the circuit?
- A. Connecting an identical wire in series with the first one
 B. Increasing the temperature of the wire
 C. Using a shorter wire of the same material and same thickness
 D. Using a thinner wire of the same material and same length

24. To demagnetise a magnet using the heating method, which of the following is the correct step?

- A. Heat the magnet to become red hot, and allow it to cool in the east-west direction.

- B. Heat the magnet to become red hot, and allow it to cool in the north-south direction.
 C. Heat the magnet in boiling water, and allow it to cool in the north-south direction.
 D. Both A and B.

25. Two students of Class VI have performed the same experiment 'Separation of Sugar' by different methods as shown below:



Which of the following statements are correct?

- I. Method 1 is faster than method 2.
 II. Method 2 leads to the decomposition of sugar to carbon.
 III. Method 2 is more appropriate than method 1.
 IV. Method 2 is slow but pure sugar is obtained without getting decomposed.
- A. I and II
 B. I, III and IV
 C. III and IV
 D. All of these

26. Sunita classified different materials based on their properties. Which of the following sets are correctly matched?

Set	Hard	Opaque	Floats in water	Insoluble in water
I	Sponge	Butter paper	Glass marble	Honey
II	Steel	Wooden board	Ice	Mustard oil
III	Iron nail	Glass	Grass	Sugar candy
IV	Lump of sugar	Thermocol	Hair	Glass powder

- A. II and IV
 B. I and II
 C. III and IV
 D. All of these

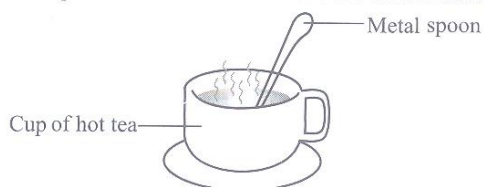
27. Reema's mother has done some preparations for her 'Birthday Party'. Which of the following changes can be reversed?

- A. Baking cake in an oven
 B. Burning of a candle
 C. Rolling a ball of dough and baking it to make *kulcha*
 D. Blowing of a balloon

28. The transmission lines should not be stretched more tightly between the towers because _____.
- Expansion takes place in winter
 - Expansion takes place in summer and contraction takes place in winter
 - Expansion and contraction do not depend on temperature
 - Contraction takes place in summer

29. Which of the following items has definite volume and shape?
- Water vapour
 - Milk
 - Aluminium foil
 - Oxygen

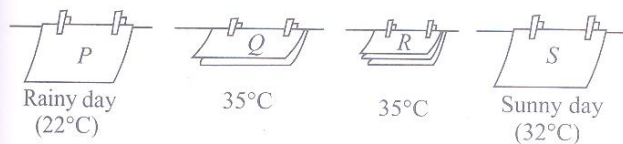
30. Shreya made a cup of hot tea and put a metal spoon in the cup so that the tea would cool down faster.



Which of the following statements best describes the cooling of tea faster?

- The metal spoon absorbs the coldness from the surroundings and transfers the coldness to the hot tea.
 - The metal spoon absorbs heat from the hot tea and transfers the heat to the surroundings.
 - The metal spoon absorbs heat from the cup and transfers the heat to the surroundings.
 - None of these
31. Which of the following mixtures cannot be separated by the method of winnowing?
- Kidney beans and chickpeas
 - Potato wafers and biscuits
 - Rice flakes and corns
 - Sawdust and sand

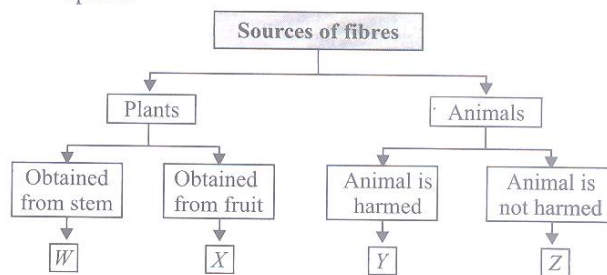
32. Four identical towels were hung out to dry under different conditions.



Arrange them in order, beginning with the towel that would take the longest time to dry.

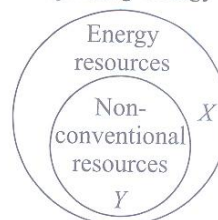
- P, Q, R, S
- P, R, Q, S
- R, P, Q, S
- S, Q, R, P

33. Refer to the given flowchart and select the correct option.



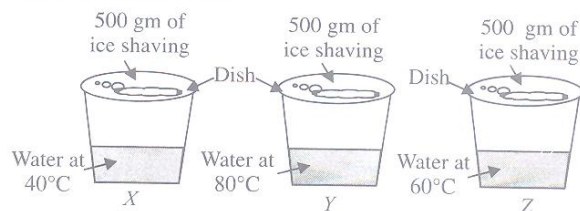
- X – Flax, Y – Silk
 - W – Cotton, Y – Silk
 - W – Flax, Z – Wool
 - X – Jute, Z – Wool
34. What is the main reason that some places on Earth are warmer than others?
- Sun is closer to some places than others.
 - Sun stays above the horizon 24 hours a day at some places.
 - The rays of the sun are more direct at some places and more slanting at others.
 - Some places experience warm seasons because of underground heat.

35. Refer to the given Venn diagram and select the correct option regarding energy resources.



- | | | |
|----|-------|------------------|
| | X | Y |
| A. | Coal | Petroleum |
| B. | Water | Petroleum |
| C. | Coal | Solar radiations |
| D. | Wind | Petroleum |

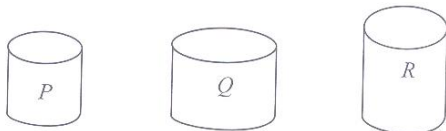
36. Jatin prepared the following set-ups to 'make rain'. The same amount of water was used for each set-up. Study them carefully to find out which set-up will form the most 'rain'?



- X
- Y
- Z
- None of these

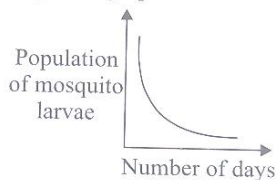
37. Which of the following joints is present between thigh bone and shin bone?
- Hinge joint
 - Pivot joint
 - Fixed joint
 - Ball and socket joint

38. Ritu has 500 cm^3 of oxygen in a small tank and she wants to transfer all of it to another container. Which of the following containers would be able to hold all the oxygen gas?



Volume = 250 cm^3 Volume = 400 cm^3 Volume = 550 cm^3

- R* only
 - Q* and *R*
 - P*, *Q* and *R*
 - None of these
39. Refer to the given graph.



What can be the possible reason for the change in the population of mosquito larvae in the pond?

- There is a layer of oil over pond.
 - New fish are introduced into the pond.
 - There is a period of dry weather.
 - Many of the mosquito larvae have changed into mosquitoes.
- (i) and (iii)
 - (ii) and (iv)
 - (i), (ii) and (iii)
 - (i), (ii), (iii) and (iv)
40. Shashank wanted to test the level of pollution in two locations. He plucked some leaves from plants in a Nature Reserve and some leaves from plants near a factory. He then soaked them in two beakers containing Solution *Y*. The colour of Solution *Y* changed, according to the level of pollution in the area.
- In order to carry out the experiment, which of the following variables should Shashank keep the same to ensure a fair test?

- The type of leaves
- The amount of Solution *Y* added
- The number of leaves in each beaker
- The place from where the leaves were plucked

- (iii) only
- (i), (ii) and (iii)
- (ii), (iii) and (iv)
- (i), (ii), (iii) and (iv)

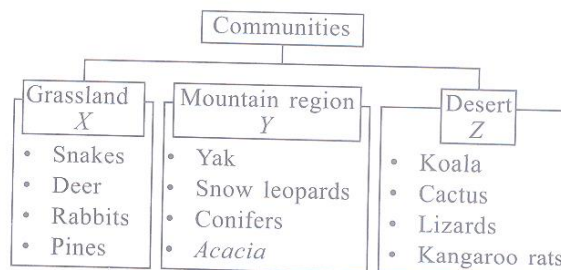
41. Which of the following statements is incorrect for the given food item?



Kheer bowl

- The ingredients used to prepare this food are obtained from both plant and animal sources.
 - The major nutrients in this food are carbohydrates and proteins.
 - This food is also a source of vitamin C.
 - The ingredient sourced from plants is actually a seed.
- (i) and (ii)
 - (iii) only
 - (ii) and (iv)
 - None of these

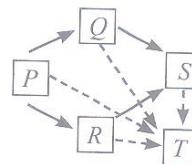
42. Refer to the given chart.



Which of the organisms have been grouped incorrectly?

- | | X | Y | Z |
|----|---------|--------|---------|
| A. | Snakes | Acacia | Lizards |
| B. | Pines | Acacia | Koala |
| C. | Rabbits | Yak | Lizards |
| D. | Deer | Yak | Koala |

43. Study the food web shown below.



How is organism *P* in the food web different from the organisms *Q*, *R*, *S* and *T*?

- It causes decomposition.
- It feeds on plants.
- It feeds on animals.
- It can photosynthesize.

44. A science teacher took her students out for a practical activity to teach them more about the aquatic plants. She showed the students an underwater leaf and told that underwater leaves do not have waxy waterproof coating. She asked them the reason for the same. Given below are the replies of the students :

Student P : Unwaxed leaf surface can float easily.

Student Q : Unwaxed leaf surface facilitates gaseous exchange between the plant and water.

Student R : Unwaxed leaf surface can reduce transpiration.

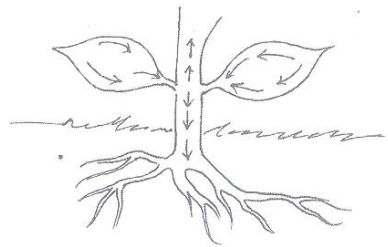
Student S : Unwaxed leaf surface can transport water.

Which of these students correctly replied?

- A. Student S
B. Student R

- C. Student P
D. Student Q

45.

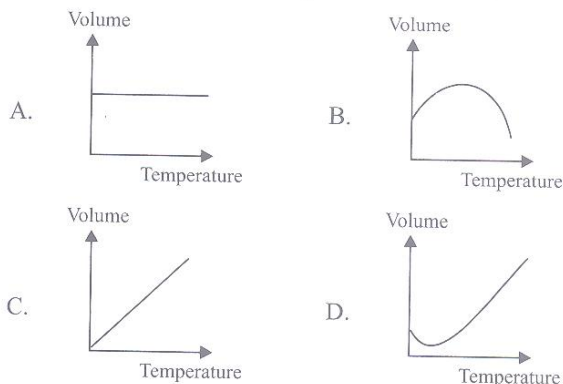


The arrows in the diagram above show the movement of _____.

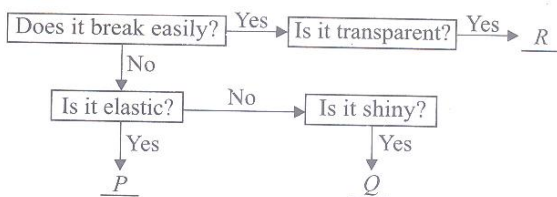
- A. Air in the plant
B. Food to all parts of the plant
C. Water to all parts of the plant
D. Carbon dioxide to all parts of the plant

ACHIEVERS SECTION

46. Which of the following graphs correctly shows the change in volume with temperature of water?



47. Study the given flowchart carefully and fill in the blanks.



- | | <i>P</i> | <i>Q</i> | <i>R</i> |
|----|---------------|---------------|---------------|
| A. | Rubber band | Steel | Electric bulb |
| B. | Electric bulb | Rubber band | Steel |
| C. | Electric bulb | Steel | Rubber band |
| D. | Steel | Electric bulb | Rubber band |

48. Read the following passage carefully.

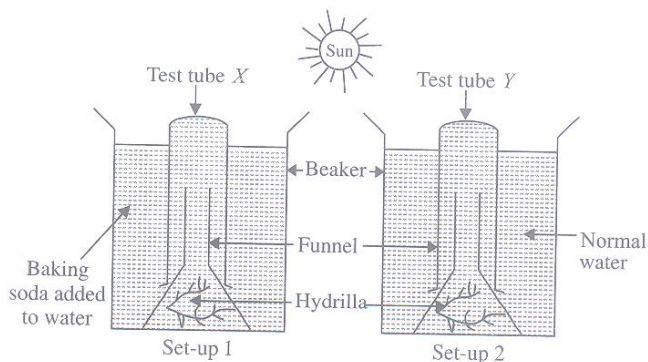
P is found abundantly in cod liver oil and is important for visual efficiency. *Q* is sourced from amla, tomato

and citrus fruits and its deficiency may cause wounds to take longer time for healing. *R* is formed in our body in presence of sunlight and its deficiency in toddlers may cause deformity of legs.

Now select the incorrect option regarding this.

- A. *P* can be found in spinach but not *R*.
B. In absence of *R* our body will show calcium deficiency even if it is abundant in our food.
C. *Q* is also called B-complex as many of its varieties are available.
D. *P* cannot be dissolved in water.

49. Beena sets up two experiments, as shown in the diagram below. She placed both the set-ups in sunlight for 9 hours. On noting down her observations for both set-ups she found that there was more oxygen collected in test tube *X* as compared to test tube *Y*. What conclusion could she best draw from this experiment?



- A. The rate of photosynthesis decreases when there is more carbon dioxide.
B. Baking soda is required for photosynthesis.

- C. Carbon dioxide is required by the plant for photosynthesis.
- D. The rate of photosynthesis increases when there is more carbon dioxide.

50. Refer to the given key carefully and identify fabrics *P*, *Q*, *R* and *S*.

1. (i) Fabric made from natural fibres ---- Go to 2
 (ii) Fabric made from man-made fibres ----- Go to 3

2. (i) Fibre obtained from plants -----

<i>P</i>

 (ii) Fibre obtained from animals -----

<i>Q</i>

3. (i) Shrinks away from flame on burning ---

<i>R</i>

 (ii) Leaves hard beads on burning -----

<i>S</i>

	<i>P</i>	<i>Q</i>	<i>R</i>	<i>S</i>
A.	Cotton	Polyester	Silk	Nylon
B.	Acrylic	Wool	Rayon	Nylon
C.	Cotton	Wool	Silk	Polyester
D.	Cotton	Silk	Nylon	Polyester

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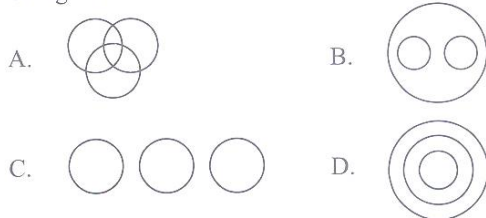
LOGICAL REASONING

1. Four friends M, N, O and P are playing cards. If P faces towards North and M faces towards West, then who faces towards South?
- O
 - N
 - P
 - Data inadequate

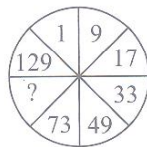
2. Pointing towards a man, Radhika said, "His sister is my daughter's brother's mother." How is the man related to Radhika?
- Brother
 - Father
 - Uncle
 - Grandfather

3. Select the option which will replace the question mark in the given number series.
- 198, 194, 185, 169, ?
- 92
 - 112
 - 136
 - 144

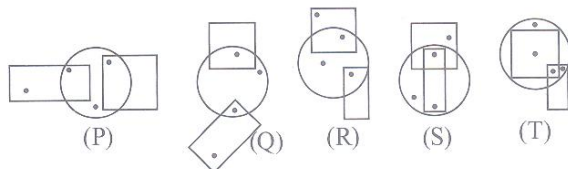
4. Which of the following Venn diagrams represents the best relationship amongst "Men, Trees and Living beings"?



5. Which of the following numbers will complete the given figure?
- 90
 - 97
 - 107
 - 117



6. Select a pair of figures from the options which has same condition of placement of dots.



- P, Q
- Q, R

- R, S
- S, Q

7. If the digits of a watch are replaced by every alternate letter in alphabets starting from 12, in the reverse order, i.e. 12 is replaced by A, 11 is replaced by C and so on, then at which letter would be the hour hand when it is 5:00 pm?

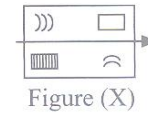
- P
- N
- O
- Q

8. Count the number of rectangles in the given figure.

- 20
- 18
- 16
- 14



9. Find the mirror image of the given Figure (X), if the mirror is placed vertically to the left.



- Mirror image of Figure (X) with the mirror on the left.
- Mirror image of Figure (X) with the mirror on the right.
- Mirror image of Figure (X) with the mirror on the left, but the elements are not mirrored.
- Mirror image of Figure (X) with the mirror on the right, but the elements are not mirrored.

10. Arrange the given units in a meaningful sequence.

- Hecto
- Centi
- Deca
- Kilo
- Deci

- 1, 3, 4, 5, 2
- 1, 5, 3, 4, 2
- 2, 5, 3, 1, 4
- 5, 2, 1, 4, 3

11. Two positions of a dice are given below. Find the number at the bottom, when number 6 is at the top.



- 1
- 4
- 5
- Can't be determined

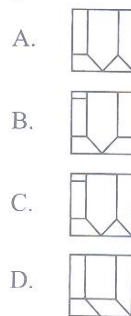
12. 121 is related to 12 in the same way as 25 is related to _____.
- 1
 - 2
 - 6
 - 7

13. A bird shooter was asked how many birds he had in his bag. He replied that there were all sparrows but six, all pigeons but six, and all ducks but six. How many birds did he have in all in his bag?
- 9
 - 18
 - 27
 - 36

14. Which of the following is exactly in the middle of the 17th from the right end, and 18th from the left end, in the given arrangement?

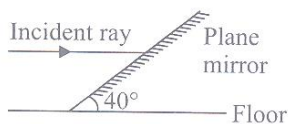
- 3 D 6 \$ C 4 E 8 # N 5 F 1 A P ★ 9 M @ K 2 B % 7 H U
- A
 - 1
 - F
 - %

15. Which of the following options will complete the pattern in Figure (X)?



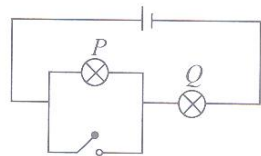
SCIENCE

16. A ray of light parallel to the floor strikes a plane mirror, which is inclined at an angle 40° as shown in figure. What is the angle of reflection?
- 40°
 - 80°
 - 50°
 - 90°



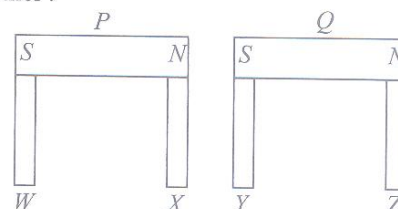
17. When you heat a system, its temperature _____.
- Always increases
 - Sometimes decreases
 - May stay the same
 - Always goes up or down, depending on the heat
18. Two boys, P and Q are running along the same path. P is 10 m ahead of Q initially. However, Q catches up with P , after running 50 m. Assuming that both boys are running at a constant speed, what is the ratio of the speeds of P and Q ?
- 6 : 5
 - 5 : 6
 - 4 : 1
 - 4 : 5

19. The given figure shows a circuit which contains two identical lamps. When the switch is closed, which of the following statements best describes, what happened to lamps P and Q ?



- P is brighter than before, but Q does not light up.
- P does not light up, but Q is brighter than before.
- Both P and Q are brighter than before.
- P and Q both will not light up.

20. Two magnets, P and Q attract four soft iron bars, W , X , Y and Z at their poles, as shown in the given figure. What will happen to the iron bars, when the two magnets move towards each other, and attract each other?



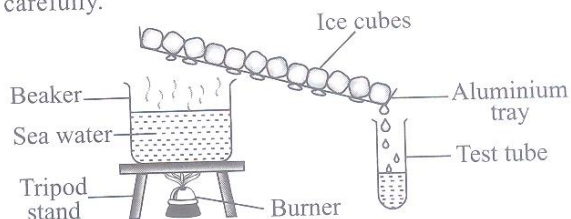
- Nothing will happen.
 - X and Y will drop off.
 - X and Y will repel away each other.
 - W and Z will attract X and Y respectively.
21. A laboratory thermometer gave the reading of -1°C and 99°C when inserted into melting ice and boiling water respectively, both at standard atmospheric pressure. What is the error when the same thermometer is used to measure the difference between two arbitrary temperatures?
- -1°C
 - 1°C
 - 0°C
 - 2°C

22. Metal pots are often made shiny on surface outside especially on the top and side and that makes sense thermally because this _____.
- Conducts heat better
 - Radiates less energy out from the pot
 - Lowers the loss due to conduction
 - Appreciably decreases convection losses

23. Komal and Kavita start at one end of a street (the origin), run to the other end, and then head back. On the way back, Komal is ahead of Kavita. Which of the given statements is correct, regarding the distance covered and the displacement from the origin at the moment?
- Kavita has run a greater distance, but her displacement is less than that of Komal.
 - Kavita has run a greater distance and her displacement is greater than that of Komal.
 - Komal has run a greater distance, but her displacement is less than that of Kavita.
 - Komal has run a greater distance and her displacement is greater than that of Kavita.

24. During the formation of rain, when water vapours change back to liquid in the form of rain drops, _____.
- Heat is absorbed
 - Heat is released
 - Heat is first absorbed, and then released
 - There is no exchange of heat

25. Observe the following experimental set-up carefully.



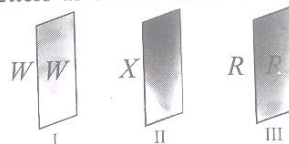
Identify liquid (X) in the test tube, residue (Y) left in the beaker, process (Z) involved.

- | | X | Y | Z |
|----|-----------|-------|-------------------------------|
| A. | Sea water | Sugar | Sedimentation and decantation |
| B. | Water | Salt | Evaporation and filtration |
| C. | Sea water | Salt | Condensation and evaporation |
| D. | Water | Salt | Evaporation and condensation |

26. Read the given statements and select the correct option.
- Statement 1:** Acid rain causes damage to buildings, historical monuments, plants and animals.
- Statement 2:** Air pollutants such as carbon dioxide, sulphur dioxide and nitrogen dioxide dissolve in rain drops to form carbonic acid, sulphuric acid and nitric acid respectively.

- Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.
- Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.
- Statement 1 is true and statement 2 is false.
- Both statements 1 and 2 are false.

27. Reyansh placed three different types of glasses in front of letters as shown below :



Which of the following observations is correct?

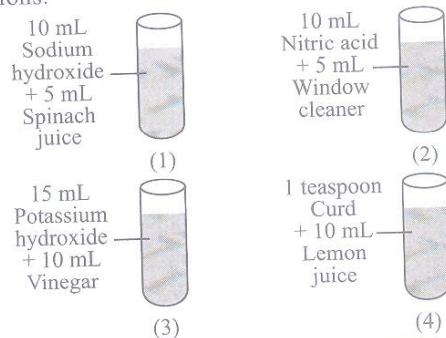
- Glass I is transparent and unclear.
- Glass I is translucent and clear.
- Glass II is opaque and frosted.
- Glass III is translucent and frosted.

28. Preeti has collected some items from her kitchen :
- Amla
 - Baking soda
 - Tamarind
 - Soap
 - Lime water
 - Common salt
 - Sugar

She classified them as acidic, basic and neutral substances. Which of the following classification is correct?

- | | Acidic | Basic | Neutral |
|----|------------|------------------|------------------|
| A. | (i), (ii) | (iv), (vii) | (iii), (v), (vi) |
| B. | (iv), (vi) | (i), (ii), (iii) | (v), (vii) |
| C. | (i), (iii) | (ii), (v), (vi) | (iv), (vii) |
| D. | (i), (iii) | (ii), (iv), (v) | (vi), (vii) |

29. A science teacher arranged the following sets of test tubes and added different indicators to the solutions.



She asked the students to find out the incorrect result from the following.

- Test tubes 1 and 3 turn turmeric solution to red.
- Test tubes 2 and 4 turn China rose indicator to green.
- Methyl orange turns yellow in test tubes 1 and 3.
- Phenolphthalein remains colourless in test tubes 2 and 4.

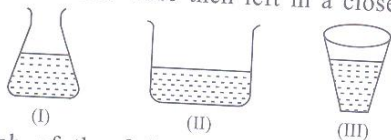
30. Some examples of changes are given below :
- Cutting a log of wood into pieces.
 - Breaking down of ozone.
 - Melting of glaciers.
 - Lime water turns milky.
 - Digestion of food.
 - Punching a hole in a paper.

Classify the above changes into

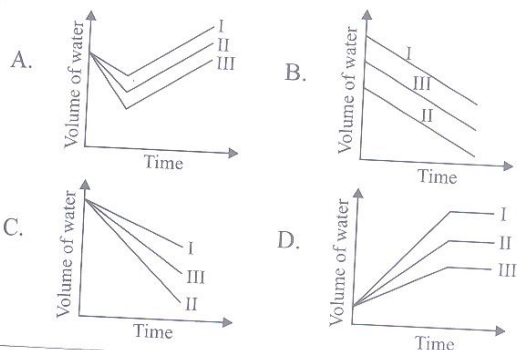
- Irreversible physical change
- Chemical change
- Reversible physical change

- A. I - a, f II - b, d, e III - c
 B. I - a, b, e II - d, f III - c
 C. I - a II - b, d III - c, e, f
 D. I - f II - c, e III - a, b, d

31. 50 mL of water at 25°C was poured into each of the three containers as shown in the given figure. The containers were then left in a closed room.



Which of the following graphs correctly shows the volume of water in each container after five hours?



32. Which of the following statements is/are true (T) or false (F) regarding nutrition in organisms?

- Photosynthesis also occurs in leaves having colour other than green.
- The process of photosynthesis first produces a simple carbohydrate called glucose which then gets converted into a complex carbohydrate called starch.
- Cuscuta* is a yellow-coloured plant but it can synthesize its own food by photosynthesis.
- In a symbiotic association, *Rhizobium* bacteria derive their nutrition from fungus.

- (i) (ii) (iii) (iv)
 A. F T T T
 B. T T T F
 C. F F F T
 D. T T F F

33. Read the given passage.

The water-bearing layer of the earth called P is made up of two components Q and R. The top level of layer P is called S. When too many tubewells are used in an area, the level of S in that area goes down.

Select the correct sequence of words to fill up the blanks in the above passage.

- | | P | Q | R | S |
|----|-------------|-----------------|-----------------|-------------|
| A. | Sea | Permeable rocks | Soil | Aquifer |
| B. | Water table | Soil | Permeable rocks | Aquifer |
| C. | Lake | Permeable rocks | Soil | Water table |
| D. | Aquifer | Soil | Permeable rocks | Water table |

Direction : Read the given passage carefully and answer Q. No. 34 and 35.

The phenomenon in which a bird or other animal moves from one place to another in one season, and returns again in a different season is called migration. It is an adaptation to escape the harsh conditions of their normal habitat so as to survive.

34. The (i) flies from its native place in Russia to places like (ii) in Rajasthan and (iii) in Haryana during a particular season. It stays in India for a few months and then goes back in (iv) season. The general name given to birds like these is (v) birds.

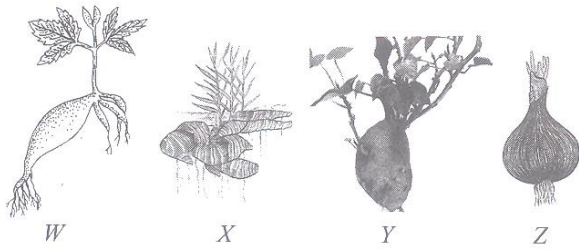
Select the correct sequence of words to fill up the blanks in the above passage.

- | | (i) | (ii) | (iii) | (iv) | (v) |
|----|----------------|-----------|-----------|--------|------------|
| A. | Toucan | Sultanpur | Bharatpur | Autumn | Adaptatory |
| B. | Siberian crane | Bharatpur | Sultanpur | Winter | Migratory |
| C. | Arctic tern | Bharatpur | Sultanpur | Spring | Migratory |
| D. | Siberian crane | Sultanpur | Bharatpur | Summer | Adaptatory |

35. Which of the following is the probable method these migratory birds use to travel to the same place year after year?

- They have built-in sense of direction and probably use land-marks to guide themselves.
- They are guided by the position of the sun during the day and by the position of stars at night.
- They use the magnetic field of earth to find the direction so as to reach the same place.
- All of these

36. A teacher showed the following plants to students and asked them to write their methods of reproduction.



Given below are answers written by the students :

Student *P* : *W*, *X* and *Y* propagate vegetatively through stem.

Student *Q* : *W* and *X* are rhizomes which propagate vegetatively through roots.

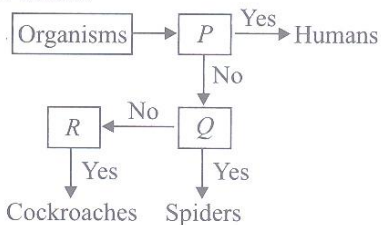
Student *R* : *Z* is called bulbil which propagates vegetatively through stem.

Student *S* : *Y* vegetatively propagates through roots.

Which student(s) wrote the correct answer?

- A. Students *P* and *S*
 B. Only Student *S*
 C. Students *Q* and *R*
 D. Only Student *Q*

37. Refer to the given flow chart showing the characteristics *P*, *Q* and *R* which are present in some animals and absent in others.



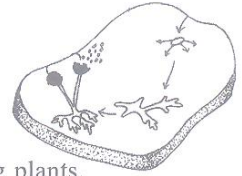
Identify *P*, *Q*, *R* and select the correct option.

- | <i>P</i> | <i>Q</i> | <i>R</i> |
|--------------|------------|------------|
| A. Diaphragm | Book lungs | Operculum |
| B. Throat | Spiracles | Book lungs |
| C. Lungs | Book lungs | Spiracles |
| D. Diaphragm | Operculum | Spiracles |

38. Match column I with column II and select the correct option from the codes given below.

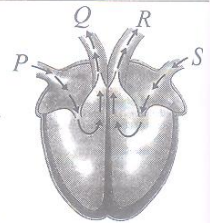
- | Column - I | Column - II |
|-----------------------|-------------|
| (a) Clothing material | (i) Nylon |
| (b) Twisted fibre | (ii) Fabric |
| (c) Synthetic fibre | (iii) Yarn |
| (d) Animal fibre | (iv) Cotton |
| (e) Plant fibre | (v) Silk |
- A. (a) - (i), (b) - (ii), (c) - (iii), (d) - (iv), (e) - (v)
 B. (a) - (ii), (b) - (iii), (c) - (v), (d) - (i), (e) - (iv)
 C. (a) - (ii), (b) - (iii), (c) - (i), (d) - (v), (e) - (iv)
 D. (a) - (i), (b) - (iv), (c) - (iii), (d) - (ii), (e) - (v)

39. Which of the following statements best describe the organism growing on the given piece of bread?



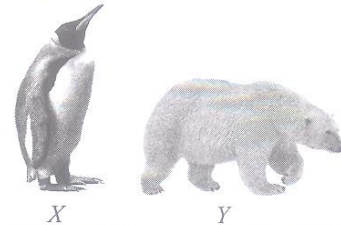
- (i) It belongs to flowering plants.
 (ii) It reproduces by spores.
 (iii) It is a chlorophyllous organism.
 (iv) It prepares its own food.
 (v) It obtains food from dead and decaying organic matter.
- A. (ii), (iii) and (iv) B. (i), (ii) and (v)
 C. (ii) and (v) D. (iii) and (iv)

40. The given diagram shows blood circulation pathway in the heart. Which of the following correctly shows the relative amount of oxygen and carbon dioxide at *P*, *Q*, *R* and *S*?



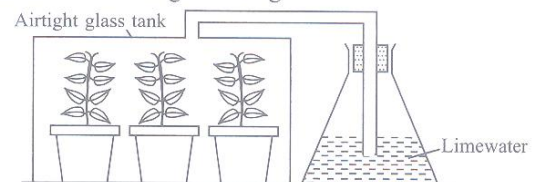
- | | More CO ₂ | More O ₂ |
|--------------------------|----------------------|--------------------------------|
| A. <i>R</i> | | <i>P</i> , <i>Q</i> , <i>S</i> |
| B. <i>Q</i> and <i>R</i> | | <i>P</i> and <i>S</i> |
| C. <i>S</i> | | <i>R</i> |
| D. <i>P</i> and <i>Q</i> | | <i>R</i> and <i>S</i> |

41. Which of the following statements are correct regarding the given animals?



- (i) Both *X* and *Y* possess streamlined body and webbed feet.
 (ii) Both are good swimmers.
 (iii) *Y* has a thick layer of fat under its skin with fur on its body, while *X* has thick skin and a layer of fat under its skin.
 (iv) Both live together in large numbers and huddle together to keep themselves warm.
 (v) *Y* has very strong sense of smell unlike *X*.
- A. (ii), (iii) and (iv)
 B. (i), (ii), (iii) and (iv)
 C. (ii), (iii) and (v)
 D. (i) and (iv)

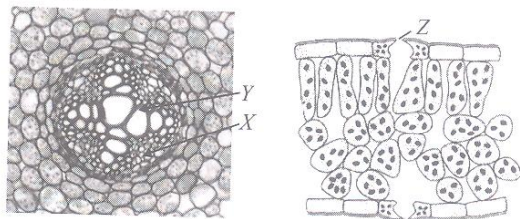
42. Jayesh placed 3 potted plants in an airtight glass tank as shown in the given diagram.



If he placed the set-up in a dark cupboard for a few hours, what would happen to the limewater, after a few hours?

- It would turn dark blue.
- There would be slightly less limewater left.
- It would turn milky.
- There would be no change.

43. Refer to the given figures and answer the question that follows.



What are the main functions of X, Y and Z?

- | | X | Y | Z |
|----|-------------------------------|-------------------------------|-------------------------|
| A. | Supports the plant | Transports food | Gaseous exchange |
| B. | Transports water and minerals | Transports food | Release water vapour |
| C. | Transports water and minerals | Supports the plant | Take in CO ₂ |
| D. | Transports food | Transports water and minerals | Gaseous exchange |

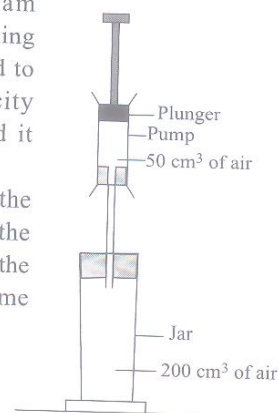
44. Given below are the four food components (P-S) and their corresponding sources.

- P – meat, fish, eggs
 Q – butter, ghee, margarine
 R – bread, biscuits, potatoes
 S – amla, tomato, orange

Select the incorrect statement regarding them.

- Deficiency of P causes Marasmus in children and Kwashiorkor only in adults.
- Amongst P, Q, R and S, 1 gram of Q produces the maximum energy.
- Excess of R gets stored in body cells, and is used for production of energy, whenever required.
- Deficiency of S leads to a disease, in which gums swell up and bleed.

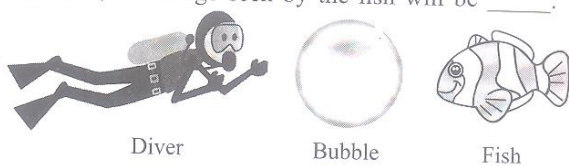
45. Study the given diagram carefully. A pump containing 50 cm³ of air is connected to the glass jar. The capacity of the jar is 200 cm³ and it contains 200 cm³ of air. The plunger is pushed all the way into the pump and all the air from the pump goes into the jar. What will be the volume of air in the jar now?



- 250 cm³
- 200 cm³
- 50 cm³
- Cannot be calculated

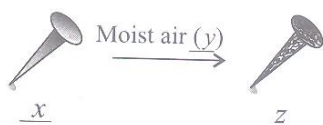
ACHIEVERS SECTION

46. A fish sees the face of a scuba diver through a thin bubble, as shown in figure. Compared to the face of the diver, the image seen by the fish will be _____.



- Smaller and erect
- Smaller and inverted
- Larger and erect
- Cannot predict

47. Fill in the blanks by observing the following chemical process.

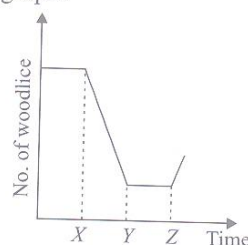


The above process becomes faster when humidity is a and can be prevented by applying a coat of

b, or by depositing a layer of a metal like c on iron.

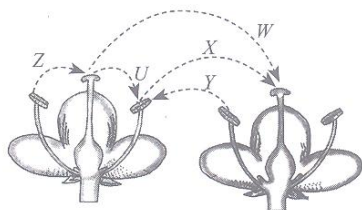
- | | x | y | z | a | b | c |
|----|----|-----------------------------------|--------------------------------|------|--------|-----------|
| A. | Mg | O ₂ | MgO | low | water | copper |
| B. | Ca | CO ₂ | CaCO ₃ | high | oil | magnesium |
| C. | Fe | O ₂ & H ₂ O | Fe ₂ O ₃ | high | grease | chromium |
| D. | Fe | H ₂ O & O ₂ | FeO | low | paint | zinc |

48. A leaf litter community has woodlice as primary consumers and centipedes and millipedes as secondary consumers. The given graph shows the changes in the population of woodlice over a period of time. Which of the following is the incorrect possibility, as per given graph?



- A. The number of centipedes in the habitat increases at point X.
- B. There is an increase in the quantity of dead leaves in the habitat at point Z.
- C. The number of millipedes in the habitat decreases at point X.
- D. There is a shortage in the quantity of dead leaves in the habitat at point X.

49.

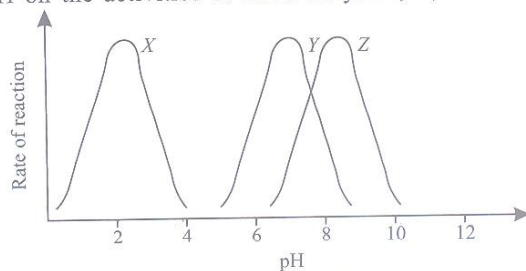


The given figure shows the longitudinal section of two flowers of the same type. Study the following statements with reference to the given figure.

- (i) Z and U show self pollination, whereas Y shows cross pollination.
- (ii) W, X and Z show transfer of pollen grains that will result in fruit formation.
- (iii) Z shows self pollination, while X shows cross pollination.

- (iv) X and Z show pollination that will result in fruit formation.
 - (v) W, X and Y show cross pollination.
- Which of the given statements are true or false?
- A. (i) and (iv) are true; (ii), (iii) and (v) are false.
 - B. Only (v) is true; rest are false.
 - C. (i), (ii), (iii) and (v) are true; (iv) alone is false.
 - D. (i), (ii) and (v) are false; (iii) and (iv) are true.

50. Refer to the given graph which shows the effect of pH on the activities of three enzymes, X, Y and Z.



The three enzyme samples, X, Y and Z are taken from which parts of the human alimentary canal?

- | | X | Y | Z |
|----|----------|----------|----------|
| A. | Duodenum | Mouth | Stomach |
| B. | Mouth | Stomach | Duodenum |
| C. | Stomach | Duodenum | Mouth |
| D. | Stomach | Mouth | Duodenum |

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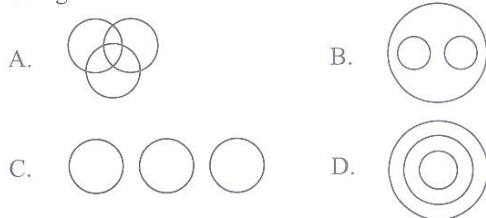
LOGICAL REASONING

1. Four friends M, N, O and P are playing cards. If P faces towards North and M faces towards West, then who faces towards South?
- O
 - N
 - P
 - Data inadequate

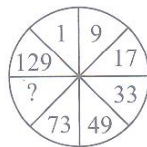
2. Pointing towards a man, Radhika said, "His sister is my daughter's brother's mother." How is the man related to Radhika?
- Brother
 - Father
 - Uncle
 - Grandfather

3. Select the option which will replace the question mark in the given number series.
- 198, 194, 185, 169, ?
- 92
 - 112
 - 136
 - 144

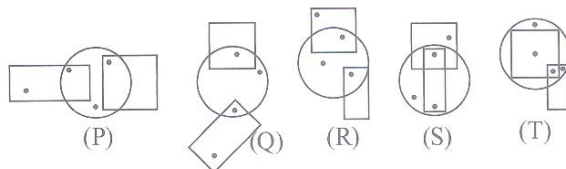
4. Which of the following Venn diagrams represents the best relationship amongst "Men, Trees and Living beings"?



5. Which of the following numbers will complete the given figure?
- 90
 - 97
 - 107
 - 117



6. Select a pair of figures from the options which has same condition of placement of dots.



- P, Q
- Q, R

- R, S
- S, Q

7. If the digits of a watch are replaced by every alternate letter in alphabets starting from 12, in the reverse order, i.e. 12 is replaced by A, 11 is replaced by C and so on, then at which letter would be the hour hand when it is 5:00 pm?

- P
- N
- O
- Q

8. Count the number of rectangles in the given figure.

- 20
- 18
- 16
- 14



9. Find the mirror image of the given Figure (X), if the mirror is placed vertically to the left.



Figure (X)

- Mirror image of Figure (X) with the mirror on the left.
- Mirror image of Figure (X) with the mirror on the right.
- Mirror image of Figure (X) with the mirror on the left.
- Mirror image of Figure (X) with the mirror on the right.

10. Arrange the given units in a meaningful sequence.

- Hecto
- Centi
- Deca
- Kilo
- Deci

- 1, 3, 4, 5, 2
- 1, 5, 3, 4, 2
- 2, 5, 3, 1, 4
- 5, 2, 1, 4, 3

11. Two positions of a dice are given below. Find the number at the bottom, when number 6 is at the top.



- 1
- 4
- 5
- Can't be determined

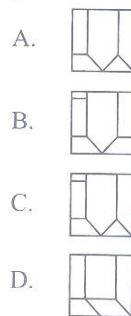
12. 121 is related to 12 in the same way as 25 is related to _____.
- 1
 - 2
 - 6
 - 7

13. A bird shooter was asked how many birds he had in his bag. He replied that there were all sparrows but six, all pigeons but six, and all ducks but six. How many birds did he have in all in his bag?
- 9
 - 18
 - 27
 - 36

14. Which of the following is exactly in the middle of the 17th from the right end, and 18th from the left end, in the given arrangement?

- 3 D 6 \$ C 4 E 8 # N 5 F 1 A P ★ 9 M @ K 2 B % 7 H U
- A
 - 1
 - F
 - %

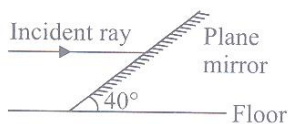
15. Which of the following options will complete the pattern in Figure (X)?



SCIENCE

16. A ray of light parallel to the floor strikes a plane mirror, which is inclined at an angle 40° as shown in figure. What is the angle of reflection?

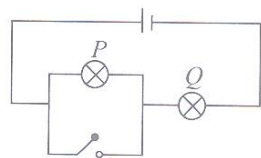
- 40°
- 80°
- 50°
- 90°



17. When you heat a system, its temperature _____.
- Always increases
 - Sometimes decreases
 - May stay the same
 - Always goes up or down, depending on the heat

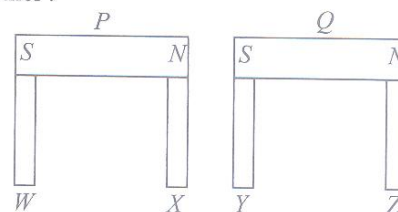
18. Two boys, P and Q are running along the same path. P is 10 m ahead of Q initially. However, Q catches up with P , after running 50 m. Assuming that both boys are running at a constant speed, what is the ratio of the speeds of P and Q ?
- 6 : 5
 - 5 : 6
 - 4 : 1
 - 4 : 5

19. The given figure shows a circuit which contains two identical lamps. When the switch is closed, which of the following statements best describes, what happened to lamps P and Q ?



- P is brighter than before, but Q does not light up.
- P does not light up, but Q is brighter than before.
- Both P and Q are brighter than before.
- P and Q both will not light up.

20. Two magnets, P and Q attract four soft iron bars, W , X , Y and Z at their poles, as shown in the given figure. What will happen to the iron bars, when the two magnets move towards each other, and attract each other?



- Nothing will happen.
 - X and Y will drop off.
 - X and Y will repel away each other.
 - W and Z will attract X and Y respectively.
21. A laboratory thermometer gave the reading of -1°C and 99°C when inserted into melting ice and boiling water respectively, both at standard atmospheric pressure. What is the error when the same thermometer is used to measure the difference between two arbitrary temperatures?
- -1°C
 - 1°C
 - 0°C
 - 2°C

22. Metal pots are often made shiny on surface outside especially on the top and side and that makes sense thermally because this _____.

- A. Conducts heat better
- B. Radiates less energy out from the pot
- C. Lowers the loss due to conduction
- D. Appreciably decreases convection losses

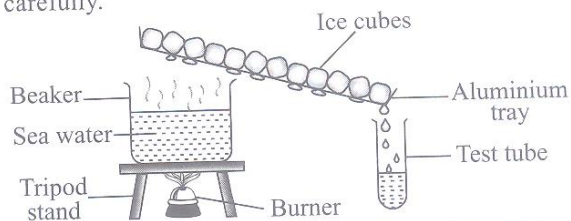
23. Komal and Kavita start at one end of a street (the origin), run to the other end, and then head back. On the way back, Komal is ahead of Kavita. Which of the given statements is correct, regarding the distance covered and the displacement from the origin at the moment?

- A. Kavita has run a greater distance, but her displacement is less than that of Komal.
- B. Kavita has run a greater distance and her displacement is greater than that of Komal.
- C. Komal has run a greater distance, but her displacement is less than that of Kavita.
- D. Komal has run a greater distance and her displacement is greater than that of Kavita.

24. During the formation of rain, when water vapours change back to liquid in the form of rain drops, _____.

- A. Heat is absorbed
- B. Heat is released
- C. Heat is first absorbed, and then released
- D. There is no exchange of heat

25. Observe the following experimental set-up carefully.



Identify liquid (X) in the test tube, residue (Y) left in the beaker, process (Z) involved.

- | | X | Y | Z |
|----|-----------|-------|-------------------------------|
| A. | Sea water | Sugar | Sedimentation and decantation |
| B. | Water | Salt | Evaporation and filtration |
| C. | Sea water | Salt | Condensation and evaporation |
| D. | Water | Salt | Evaporation and condensation |

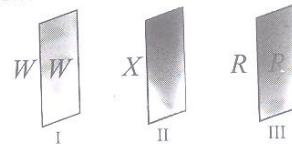
26. Read the given statements and select the correct option.

Statement 1: Acid rain causes damage to buildings, historical monuments, plants and animals.

Statement 2: Air pollutants such as carbon dioxide, sulphur dioxide and nitrogen dioxide dissolve in rain drops to form carbonic acid, sulphuric acid and nitric acid respectively.

- A. Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.
- B. Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.
- C. Statement 1 is true and statement 2 is false.
- D. Both statements 1 and 2 are false.

27. Reyansh placed three different types of glasses in front of letters as shown below :



Which of the following observations is correct?

- A. Glass I is transparent and unclear.
- B. Glass I is translucent and clear.
- C. Glass II is opaque and frosted.
- D. Glass III is translucent and frosted.

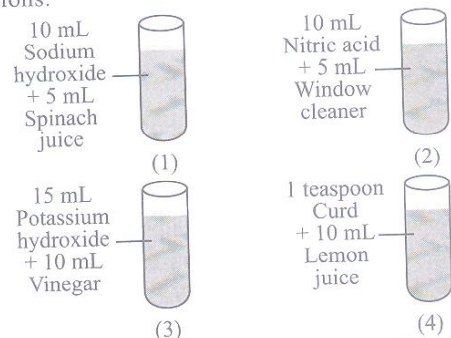
28. Preeti has collected some items from her kitchen :

- i. Amla
- ii. Baking soda
- iii. Tamarind
- iv. Soap
- v. Lime water
- vi. Common salt
- vii. Sugar

She classified them as acidic, basic and neutral substances. Which of the following classification is correct?

- | | Acidic | Basic | Neutral |
|----|------------|------------------|------------------|
| A. | (i), (ii) | (iv), (vii) | (iii), (v), (vi) |
| B. | (iv), (vi) | (i), (ii), (iii) | (v), (vii) |
| C. | (i), (iii) | (ii), (v), (vi) | (iv), (vii) |
| D. | (i), (iii) | (ii), (iv), (v) | (vi), (vii) |

29. A science teacher arranged the following sets of test tubes and added different indicators to the solutions.



She asked the students to find out the incorrect result from the following.

- A. Test tubes 1 and 3 turn turmeric solution to red.
- B. Test tubes 2 and 4 turn China rose indicator to green.
- C. Methyl orange turns yellow in test tubes 1 and 3.
- D. Phenolphthalein remains colourless in test tubes 2 and 4.

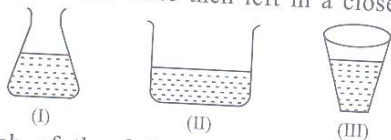
30. Some examples of changes are given below :
- Cutting a log of wood into pieces.
 - Breaking down of ozone.
 - Melting of glaciers.
 - Lime water turns milky.
 - Digestion of food.
 - Punching a hole in a paper.

Classify the above changes into

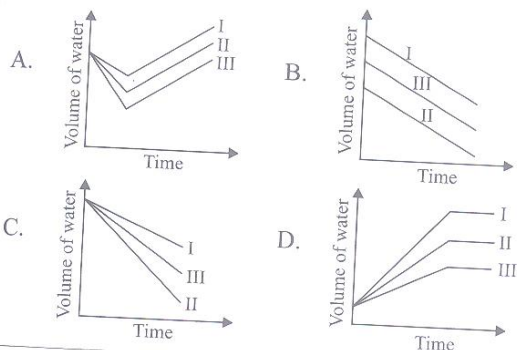
- Irreversible physical change
- Chemical change
- Reversible physical change

- A. I - a, f II - b, d, e III - c
 B. I - a, b, e II - d, f III - c
 C. I - a II - b, d III - c, e, f
 D. I - f II - c, e III - a, b, d

31. 50 mL of water at 25°C was poured into each of the three containers as shown in the given figure. The containers were then left in a closed room.



Which of the following graphs correctly shows the volume of water in each container after five hours?



32. Which of the following statements is/are true (T) or false (F) regarding nutrition in organisms?

- Photosynthesis also occurs in leaves having colour other than green.
- The process of photosynthesis first produces a simple carbohydrate called glucose which then gets converted into a complex carbohydrate called starch.
- Cuscuta* is a yellow-coloured plant but it can synthesize its own food by photosynthesis.
- In a symbiotic association, *Rhizobium* bacteria derive their nutrition from fungus.

- (i) (ii) (iii) (iv)
 A. F T T T
 B. T T T F
 C. F F F T
 D. T T F F

33. Read the given passage.

The water-bearing layer of the earth called P is made up of two components Q and R. The top level of layer P is called S. When too many tubewells are used in an area, the level of S in that area goes down.

Select the correct sequence of words to fill up the blanks in the above passage.

- | | P | Q | R | S |
|----|-------------|-----------------|-----------------|-------------|
| A. | Sea | Permeable rocks | Soil | Aquifer |
| B. | Water table | Soil | Permeable rocks | Aquifer |
| C. | Lake | Permeable rocks | Soil | Water table |
| D. | Aquifer | Soil | Permeable rocks | Water table |

Direction : Read the given passage carefully and answer Q. No. 34 and 35.

The phenomenon in which a bird or other animal moves from one place to another in one season, and returns again in a different season is called migration. It is an adaptation to escape the harsh conditions of their normal habitat so as to survive.

34. The (i) flies from its native place in Russia to places like (ii) in Rajasthan and (iii) in Haryana during a particular season. It stays in India for a few months and then goes back in (iv) season. The general name given to birds like these is (v) birds.

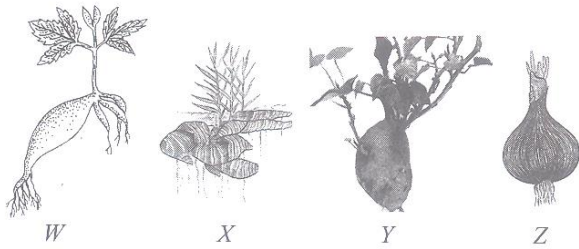
Select the correct sequence of words to fill up the blanks in the above passage.

- | | (i) | (ii) | (iii) | (iv) | (v) |
|----|----------------|-----------|-----------|--------|------------|
| A. | Toucan | Sultanpur | Bharatpur | Autumn | Adaptatory |
| B. | Siberian crane | Bharatpur | Sultanpur | Winter | Migratory |
| C. | Arctic tern | Bharatpur | Sultanpur | Spring | Migratory |
| D. | Siberian crane | Sultanpur | Bharatpur | Summer | Adaptatory |

35. Which of the following is the probable method these migratory birds use to travel to the same place year after year?

- They have built-in sense of direction and probably use land-marks to guide themselves.
- They are guided by the position of the sun during the day and by the position of stars at night.
- They use the magnetic field of earth to find the direction so as to reach the same place.
- All of these

36. A teacher showed the following plants to students and asked them to write their methods of reproduction.



Given below are answers written by the students :

Student *P* : *W*, *X* and *Y* propagate vegetatively through stem.

Student *Q* : *W* and *X* are rhizomes which propagate vegetatively through roots.

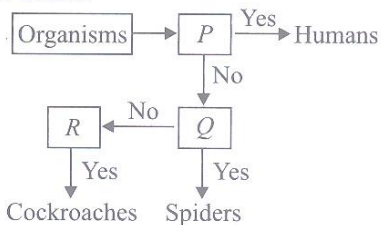
Student *R* : *Z* is called bulbil which propagates vegetatively through stem.

Student *S* : *Y* vegetatively propagates through roots.

Which student(s) wrote the correct answer?

- A. Students *P* and *S*
 B. Only Student *S*
 C. Students *Q* and *R*
 D. Only Student *Q*

37. Refer to the given flow chart showing the characteristics *P*, *Q* and *R* which are present in some animals and absent in others.



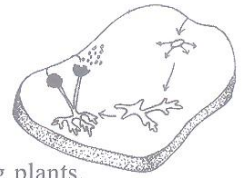
Identify *P*, *Q*, *R* and select the correct option.

- | <i>P</i> | <i>Q</i> | <i>R</i> |
|--------------|------------|------------|
| A. Diaphragm | Book lungs | Operculum |
| B. Throat | Spiracles | Book lungs |
| C. Lungs | Book lungs | Spiracles |
| D. Diaphragm | Operculum | Spiracles |

38. Match column I with column II and select the correct option from the codes given below.

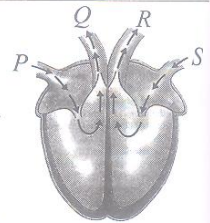
- | Column - I | Column - II |
|-----------------------|-------------|
| (a) Clothing material | (i) Nylon |
| (b) Twisted fibre | (ii) Fabric |
| (c) Synthetic fibre | (iii) Yarn |
| (d) Animal fibre | (iv) Cotton |
| (e) Plant fibre | (v) Silk |
- A. (a) - (i), (b) - (ii), (c) - (iii), (d) - (iv), (e) - (v)
 B. (a) - (ii), (b) - (iii), (c) - (v), (d) - (i), (e) - (iv)
 C. (a) - (ii), (b) - (iii), (c) - (i), (d) - (v), (e) - (iv)
 D. (a) - (i), (b) - (iv), (c) - (iii), (d) - (ii), (e) - (v)

39. Which of the following statements best describe the organism growing on the given piece of bread?



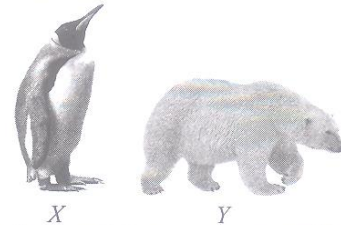
- (i) It belongs to flowering plants.
 (ii) It reproduces by spores.
 (iii) It is a chlorophyllous organism.
 (iv) It prepares its own food.
 (v) It obtains food from dead and decaying organic matter.
- A. (ii), (iii) and (iv) B. (i), (ii) and (v)
 C. (ii) and (v) D. (iii) and (iv)

40. The given diagram shows blood circulation pathway in the heart. Which of the following correctly shows the relative amount of oxygen and carbon dioxide at *P*, *Q*, *R* and *S*?



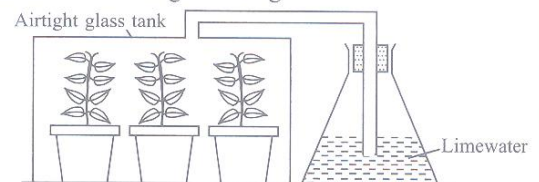
- | | More CO ₂ | More O ₂ |
|--------------------------|----------------------|--------------------------------|
| A. <i>R</i> | | <i>P</i> , <i>Q</i> , <i>S</i> |
| B. <i>Q</i> and <i>R</i> | | <i>P</i> and <i>S</i> |
| C. <i>S</i> | | <i>R</i> |
| D. <i>P</i> and <i>Q</i> | | <i>R</i> and <i>S</i> |

41. Which of the following statements are correct regarding the given animals?



- (i) Both *X* and *Y* possess streamlined body and webbed feet.
 (ii) Both are good swimmers.
 (iii) *Y* has a thick layer of fat under its skin with fur on its body, while *X* has thick skin and a layer of fat under its skin.
 (iv) Both live together in large numbers and huddle together to keep themselves warm.
 (v) *Y* has very strong sense of smell unlike *X*.
- A. (ii), (iii) and (iv)
 B. (i), (ii), (iii) and (iv)
 C. (ii), (iii) and (v)
 D. (i) and (iv)

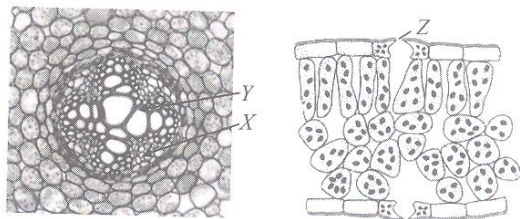
42. Jayesh placed 3 potted plants in an airtight glass tank as shown in the given diagram.



If he placed the set-up in a dark cupboard for a few hours, what would happen to the limewater, after a few hours?

- A. It would turn dark blue.
- B. There would be slightly less limewater left.
- C. It would turn milky.
- D. There would be no change.

43. Refer to the given figures and answer the question that follows.



What are the main functions of X, Y and Z?

- | | X | Y | Z |
|----|-------------------------------|-------------------------------|-------------------------|
| A. | Supports the plant | Transports food | Gaseous exchange |
| B. | Transports water and minerals | Transports food | Release water vapour |
| C. | Transports water and minerals | Supports the plant | Take in CO ₂ |
| D. | Transports food | Transports water and minerals | Gaseous exchange |

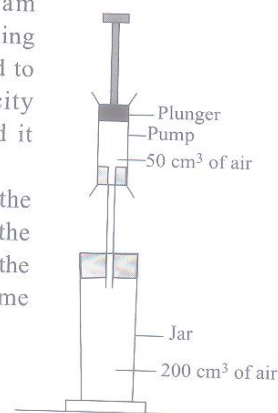
44. Given below are the four food components (P-S) and their corresponding sources.

- P – meat, fish, eggs
- Q – butter, ghee, margarine
- R – bread, biscuits, potatoes
- S – amla, tomato, orange

Select the incorrect statement regarding them.

- A. Deficiency of P causes Marasmus in children and Kwashiorkor only in adults.
- B. Amongst P, Q, R and S, 1 gram of Q produces the maximum energy.
- C. Excess of R gets stored in body cells, and is used for production of energy, whenever required.
- D. Deficiency of S leads to a disease, in which gums swell up and bleed.

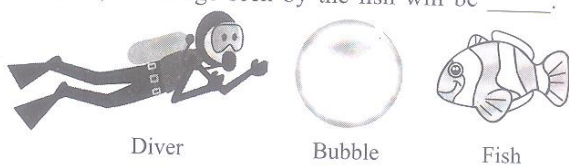
45. Study the given diagram carefully. A pump containing 50 cm³ of air is connected to the glass jar. The capacity of the jar is 200 cm³ and it contains 200 cm³ of air. The plunger is pushed all the way into the pump and all the air from the pump goes into the jar. What will be the volume of air in the jar now?



- A. 250 cm³
- B. 200 cm³
- C. 50 cm³
- D. Cannot be calculated

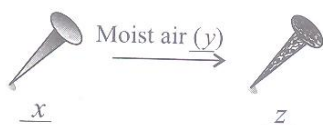
ACHIEVERS SECTION

46. A fish sees the face of a scuba diver through a thin bubble, as shown in figure. Compared to the face of the diver, the image seen by the fish will be _____.



- A. Smaller and erect
- B. Smaller and inverted
- C. Larger and erect
- D. Cannot predict

47. Fill in the blanks by observing the following chemical process.

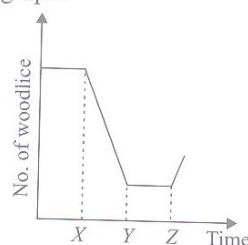


The above process becomes faster when humidity is a and can be prevented by applying a coat of

b, or by depositing a layer of a metal like c on iron.

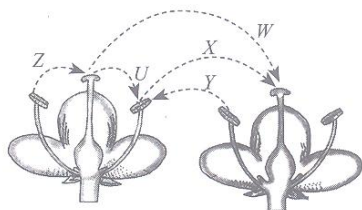
- | | x | y | z | a | b | c |
|----|----|-----------------------------------|--------------------------------|------|--------|-----------|
| A. | Mg | O ₂ | MgO | low | water | copper |
| B. | Ca | CO ₂ | CaCO ₃ | high | oil | magnesium |
| C. | Fe | O ₂ & H ₂ O | Fe ₂ O ₃ | high | grease | chromium |
| D. | Fe | H ₂ O & O ₂ | FeO | low | paint | zinc |

48. A leaf litter community has woodlice as primary consumers and centipedes and millipedes as secondary consumers. The given graph shows the changes in the population of woodlice over a period of time. Which of the following is the incorrect possibility, as per given graph?



- A. The number of centipedes in the habitat increases at point X.
- B. There is an increase in the quantity of dead leaves in the habitat at point Z.
- C. The number of millipedes in the habitat decreases at point X.
- D. There is a shortage in the quantity of dead leaves in the habitat at point X.

49.



The given figure shows the longitudinal section of two flowers of the same type. Study the following statements with reference to the given figure.

- (i) Z and U show self pollination, whereas Y shows cross pollination.
- (ii) W, X and Z show transfer of pollen grains that will result in fruit formation.
- (iii) Z shows self pollination, while X shows cross pollination.

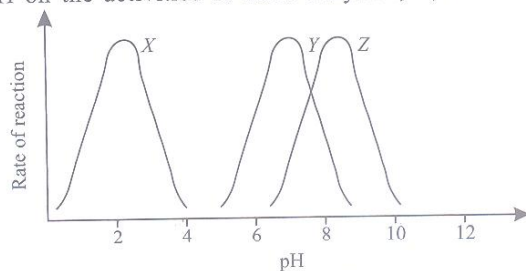
(iv) X and Z show pollination that will result in fruit formation.

(v) W, X and Y show cross pollination.

Which of the given statements are true or false?

- A. (i) and (iv) are true; (ii), (iii) and (v) are false.
- B. Only (v) is true; rest are false.
- C. (i), (ii), (iii) and (v) are true; (iv) alone is false.
- D. (i), (ii) and (v) are false; (iii) and (iv) are true.

50. Refer to the given graph which shows the effect of pH on the activities of three enzymes, X, Y and Z.



The three enzyme samples, X, Y and Z are taken from which parts of the human alimentary canal?

- | | X | Y | Z |
|----|----------|----------|----------|
| A. | Duodenum | Mouth | Stomach |
| B. | Mouth | Stomach | Duodenum |
| C. | Stomach | Duodenum | Mouth |
| D. | Stomach | Mouth | Duodenum |

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