

MOCK TEST SERIES



6 **CLASS**

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- ♦ Comprising questions prepared by teachers from various schools of India and abroad.
- ♦ Comprising questions of various National and International Olympiads.
- ♦ Model Test Papers with Answer Key.
- ♦ Special emphasis on concepts building and improving problem solving skills.

- ♦ **National Olympiad's**
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NASO OLYMPIAD COMPREHENSIVE GUIDE



NASO QUESTION PAPER 2018



NASO MOCK TEST SERIES



NASO PREVIOUS YEAR QUESTION PAPER



NASO WORKBOOK



SMART BAIN IQ PUZZLE

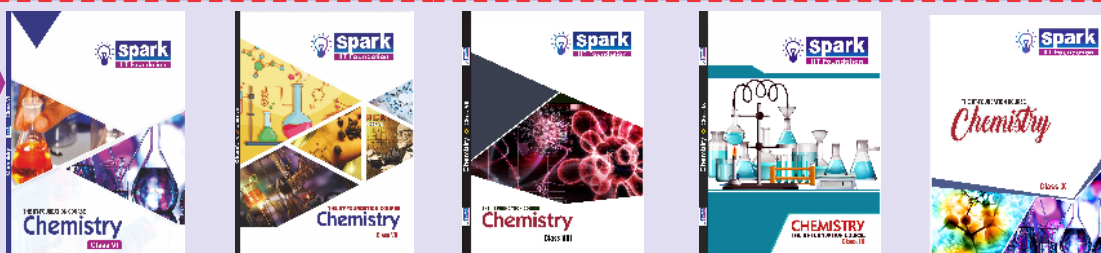


NASO EXCELLENCE GUIDE

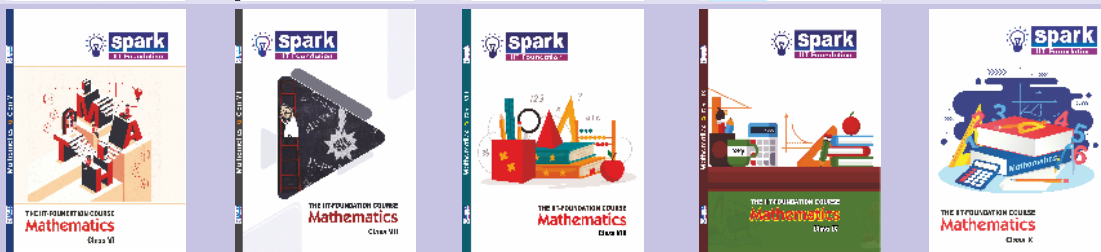


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PHYSICS



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20.	OMR Sheet	

1. A child is suffering from a deficiency disease. He shows following symptoms.

- (i) Swollen stomach (ii) Thin legs
(iii) Scaly skin (iv) Slow mental and physical development

Identify the deficiency disease and the deficient nutrient in the child's body.

Option	Deficiency disease	Deficient nutrient
(A)	Kwashiorkor	Proteins
(B)	Goiter	Iodine
(C)	Anaemia	Iron
(D)	Rickets	Vitamin D

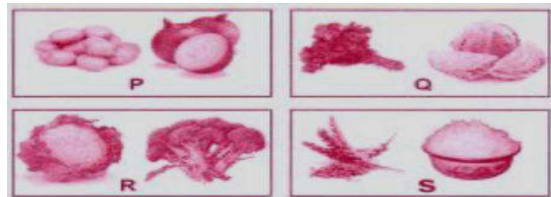
A . A

B . B

C . C

D . D

2. Green plants are known as producers. They prepare more food than they need. The extra food is stored in different parts of the plant. Identify the parts of the plant from which the following food items (P, Q, R & S) are obtained and select the correct option.



Option	Column-P	Column-Q	Column-R	Column-s
(A)	Stem	Leafe	Flower	Seed
(B)	Root	Flower	Leafe	Fruit
(C)	Fruit	Leafe	Seed	Flower
(D)	Leafe	Fruit	Stem	Root

A. A

B. B

C. C

D. D

3. Identify X and Y in the given Venn diagram and select the c_____?

- A. Y is silk
B. X is Styrofoam
C. Y is cotton
D. X is nylon



4. Sakshi wants to test the quality of her dupatta. She pulled a small strand of yarn from the dupatta and burned it. It smelled like a burning paper. She inferred that the dupatta is made of_____?

A. Pure wool

B. Cotton

C. Pure silk

D. None of these.

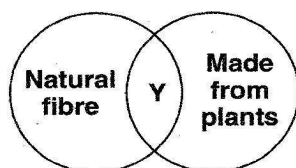
5. The above rhyme is referred to...

- A. Cotton flower
- B. Jute flower
- C. Marigold
- D. Rauwolfia

First day white, next day red,
third day from my birth,
I'm dead.

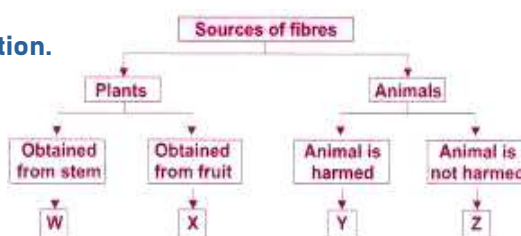
6. Identify Y in the given Venn diagram?

- A. Silk
- B. Rubber
- C. Cotton
- D. Nylon



7. Refer the given flowchart and select the correct option.

- A. X-Flax, Y-Silk
- B. W - Cotton, Y - Silk
- C. W - Flax, Z - Wool
- D. X-Jute, Z-Wool



8. Four rods of equal length and thickness but of different materials are coated with wax in the same manner. They are fixed to a trough containing hot water. The given diagram illustrates what happens to the wax on each rod after five minutes.

What can you conclude from the given diagram?

- (i) The aluminum rod conducts heat better than the brass rod.
- (ii) The aluminum rod conducts heat better than the copper rod.
- (iii) The glass rod conducts heat better than the copper rod.
- (iv) The wax on the copper rod melts faster than the wax on the brass rod.



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

9. Study the given table showing some daily used items which can be made from more than one material.

Which of these is incorrect?

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

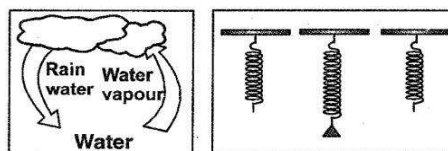
Items	Wood	Plastic	Metal	Glass
(i) Cooking pot	✓	✓	x	x
(ii) Storage container	✓	✓	✓	✓
(iii) LPG cylinder	✓	✓	x	✓
(iv) Tea cup	✓	✓	✓	x

10. The table below shows the properties of four substances K, L, M and N. Which two substances would be most difficult to separate when mixed in water?

- A. K and L
- B. K and M
- C. L and M
- D. M and N

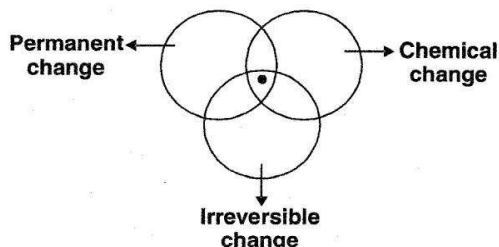
Substance	Colour	Taste	Magnetic	Dissolves in water
K	White	Salty	No	Yes
L	Blue	Sweet	No	No
M	White	Sweet	No	Yes
N	Black	Metallic	Yes	No

11. Which of the following processes correctly describe the changes taking place in the Above figures?



- A) Physical and chemical
B) Physical and reversible
C) Chemical and reversible
D) Physical and irreversible.

12. Study the venn diagram centre point represents



- A. Melting of ice
B. Boiling of water
C. Rusting
D. Condensation

13. Match column I with column II and choose the correct option from the codes given below.

Column I	Column II
(a) Freezing	(i) The change of a solid directly to a gas
(b) Melting	(ii) The change of a liquid to a solid
(c) Condensation	(iii) The change of a liquid to vapour
(d) Sublimation	(iv) The change of a solid to a liquid
(e) Evaporation	(v) The change of a vapour to a liquid

- A. (a) - (i), (b) - (ii), (c) - (iii), (d) - (iv), (e) - (v)
B. (a) - (ii), (b) - (iv), (c) - (v), (d) - (i), (e) - (iii)
C. (a) - (ii), (b) - (i), (c) - (v), (d) - (iv), (e) - (iii)
D. (a) - (i), (b) - (iii), (c) - (v), (d) - (iv), (e) - (ii)

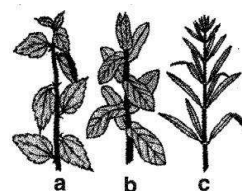
14. Match the columns and select the correct option from the codes given below.

Column I	Column II
(a) Ovary	(i) Lowermost swollen part of pistil
(b) Filament	(ii) Slender stalk of the stamen
(c) Style	(iii) Numerous small bead like structures
(d) Ovule	(iv) Knob-like structure on the top of stamen
(e) Anther	(v) Elongated tube connecting ovary and stigma

- A. (a) - (i), (b) - (ii), (c) - (iii), (d) - (iv), (e) - (v)
B. (a) - (i), (b) - (ii), (c) - (v), (d) - (iii), (e) - (iv)
C. (a) - (iv), (b) - (v), (c) - (ii), (d) - (iii), (e) - (i)
D. (a) - (iii), (b) - (v), (c) - (ii), (d) - (i), (e) - (iv)

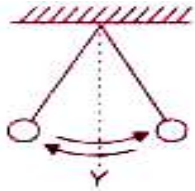
15. Phyllotaxy is the arrangement of leaves on the stem. Three types of phyllotaxy are shown in the figure. Which of the following is the correct option?

Option	a	b	c
A	Alternate	Opposite	Whorled
B	Opposite	Whorled	Alternate
C	Whorled	Alternate	Opposite
D	Opposite	Alternate	Whorled



16. A pendulum swings backwards and forwards passing through Y, the middle point of the oscillation. The first time the pendulum passes through Y, a stopwatch is started. The twenty-first time the pendulum pass through Y, the stopwatch is stopped. The reading is T. What is the period of the pendulum?

- A. $T/40$
B. $T/21$
C. $T/20$
D. $T/10$

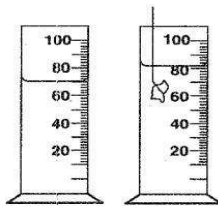


17. Statement 1: The displacement of a body may be zero, though distance can be finite.
Statement 2: If a body moves such that finally it arrives at initial point, then displacement is zero while distance is finite.

- 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. Statement 1 is false and statement 2 is true.

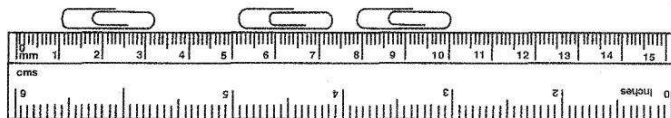
18. Figure shows a measuring cylinder before and after the immersion of an irregular solid object. The volume of the object is ____?

- A. 82 cm^3
B. 12 cm^3
C. 30 cm^3
D. 18 cm^3



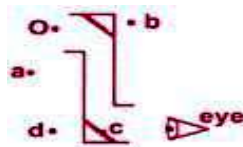
19. The average length of the three paper clips is

- A. 1.5 cm
B. 2.2 cm
C. 2.5 cm
D. 3.0 cm



20. The diagram shows an object O viewed using two mirrors. A person looks into the mirrors as shown. At which position is the image of O seen?

- A. A
B. B
C. C
D. D



ANSWER KEYS

QUESTION NO	ANSWER	SOLUTION
QUESTION-1	A	Kwashiorkor is a deficiency disease caused by deficiency of protein in the diet. The child becomes thin and weak, abdomen is swollen. Skin becomes scaly and develops cracks, growth and brain development stops. The child should be given protein rich diet that includes soya bean, pulses, lean meat, egg white, etc.
QUESTION-2	A	Plants produce their food by the process of photosynthesis. The reserved food material is stored in different parts of plants. For example; stem of potato, leaves of cabbage, flower of broccoli, and seeds (grains) of rice are the edible parts of the plant.
QUESTION-3	C	Y is cotton since it is a natural fibre which is obtained from cotton plant.
QUESTION-4	B	Cotton is a natural fibre obtained from cotton plant. It easily catches fire and burns with a bright yellow flame. The smell is of burning paper because cotton is plant product like paper.
QUESTION-5	A	The rhyme is referred to the cotton flower
QUESTION-6	C	Venn diagram clearly explains that which is made by plants and it makes natural fiber is cotton.
QUESTION-7	C	Flax is a bast fibre obtained from stem of a plant. It is very strong and provides strength to the plant. Wool is obtained from hair of animals like sheep, camels, rabbits and goats. The animal is not harmed during the process of shearing and it is done using special clippers to obtain the wool.
QUESTION-8	A	By observing the amount of wax melted in each case in the figure, we can conclude about the conductivity of the rods. As the wax melted maximum on copper rod, so it is good conductor of heat followed by aluminum and brass. While glass is an insulator.
QUESTION-9	B	Cooking pot cannot be made from wood, plastic and glass. LPG cylinder cannot be made from wood, plastic and glass. Tea cup cannot be made from wood and plastic.
QUESTION-10	B	Separation of <i>K</i> and <i>M</i> would be most difficult because both substances are soluble in water and nonmagnetic and have same colour.
QUESTION-11	D	Figure 1 represents evaporation and condensation which are reversible physical changes. Figure 2 represents stretching and loosing of a string which is also reversible physical change as in both cases, no new substance is going to be formed and it is easy to get back the original substance or shape.
QUESTION-12	C	The centre point in venn diagram represents a chemical change which is permanent and irreversible. Rusting of iron is a chemical change while melting of ice, boiling of water and condensation are physical changes, temporary and reversible.
QUESTION-13	B	The codes should be arranged as -The change of a liquid to a solid -The change of a solid to a liquid -The change of a vapour to a liquid -The change of a solid directly to a gas

QUESTION-14	B	Structure marked as X represents stomata. They help in gas exchange during respiration and photosynthesis. It also helps in evaporation of water from the leaves by the process of transpiration.
QUESTION-15	A	The way in which the leaves are arranged on a stem is called phyllotaxy. When only one leaf is attached to a node, it is called alternate phyllotaxy. When two leaves are attached to one node, it is called opposite phyllotaxy. When a plant has several leaves attached to the same node, it is called whorled phyllotaxy.
QUESTION-16	D	The time taken to complete one oscillation is called the time period of a pendulum. Here the time period is the time takes to move from Y to B then back to A and then to Y. The reading of stop watch = T Number of oscillations = 10. $\text{Time period} = \frac{\text{Time take}}{\text{Number of oscillations}}$ A
QUESTION-17	A	When a body moves from one position to another, the shortest distance measured between the initial and the final positions of the moving body in a particular direction is called displacement. The actual length of the path travelled by a moving body in a given interval of time is called the distance travelled by that body. So displacement of a body may be zero, though distance can be finite. For example, in case of circular motion if the body comes back to its initial position then distance travelled is finite but displacement is zero.a
QUESTION-18	B	Initial volume of water in the cylinder, before the immersion of the object (V₁) = 70 cm³ Final volume in the cylinder, after the immersion of the object (V₂) = 82 cm³ Hence, volume of the object immersed in the cylinder = Final volume - Initial volume = 82 cm³ - 70 cm³ = 12 cm³
QUESTION-19	B	The three clips actual length is 2.2 cm
QUESTION-20	D	0 can be clearly seen because the b mirror will refelects the same .

Invigilator's Signature

1. Which of the items above will allow you to see around a corner from where you are standing?

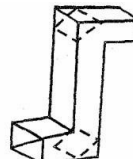
- A. (i) only
- B. (iii) only
- C. (i) & (ii)
- D. (i) & (iii)



(i)



(ii)



(iii)

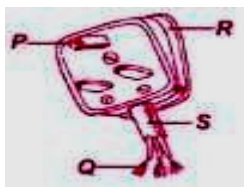
2. You are standing upright in a room in front of a vertical mirror. In this mirror, you can see from your position only the upper two-third of your body. You wish to see the entire length of your body reflected in the mirror. Which combination of the following three courses of action will achieve this?

- I. Move away from the mirror
- II. Move toward the mirror
- III. Use a mirror whose height will allow you to see your whole image

- A. I Only
- B. II Only
- C. III Only
- D. Either I or III

3. To protect the user, part(s) insulators. of the plug as shown in the figure must be made of electrical

- A. P only
- B. R only
- C. R & S
- D. Q & S.



4. "Do not handle electric wires with your bare hands. Wear rubber gloves," said Mr Lim.

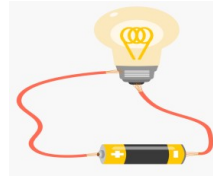


Which of the following statements is not true about what Mr. Lim commented?

- A) You will get electrocuted if you handle live wires
- B) The rubber glove is a good insulator to protect us from electric shocks
- C) The rubber gloves control the electric current flow
- D) Electricity cannot flow through rubber.

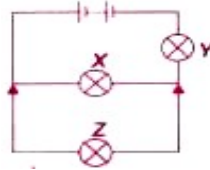
5. Which of the following shows the energy changes that take place when a bulb glows?

- A. Chemical → Electrical → Heat → Light energy
- B. Electrical → Chemical → Light → Heat energy
- C. Heat → Light → Electrical energy
- D. Light → Heat → Chemical energy



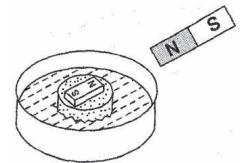
6. The diagram shows identical lamps X and Y connected in series with a battery. The lamps light with normal brightness. A third lamp Z is connected in parallel with lamp X. What happens to the brightness of lamp Y?

- A. Brighter than normal
- B. Normal
- C. Dimmer than normal
- D. Very dim (cannot be seen)



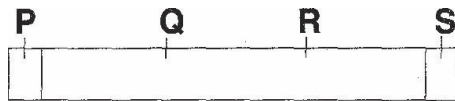
7. What would happen when the magnet is held near the cork as shown in diagram?

- A. The cork would move towards the magnet because of magnetic force of repulsion.
- B. The cork would move towards the magnet because of magnetic force of attraction
- C. The cork would move away from the magnet because of magnetic force of repulsion
- D. The cork would move away from the magnet because of magnetic force of attraction



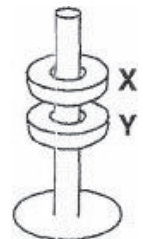
8. Vikram is going to dip a bar magnet into a container of iron filings. Which part of the bar magnet will he observe attract the most amount of the iron filings?

- A. P&Q
- B. P&S
- C. R&S
- D. P, Q&R

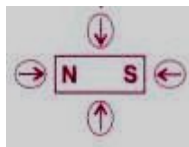


9. The figure shows a ring magnet, X, 'floating' above another ring magnet, Y. This is because _____.

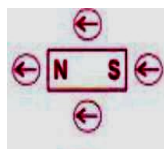
- A. Magnet X is lighter than magnet Y.
- B. Magnet Y is more powerful than magnet X.
- C. The like poles of both magnets is facing each other and they repel each other
- D. The unlike poles of both magnets are facing each other and they attract each other.



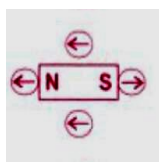
10. In the given diagrams, compasses are used to plot the magnetic field around a bar magnet with poles marked N (North) and S (South). Which of the following diagram correctly shows the expected field pattern?



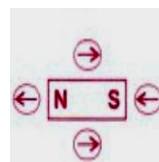
A.



B.



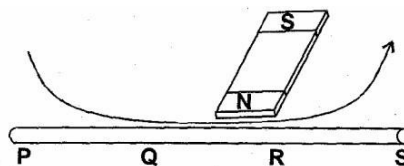
C.



D.

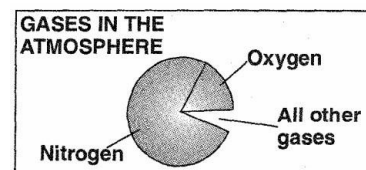
11. Farhan magnetised a piece of iron rod using the stroking method as shown in the diagram below. Which part of the iron rod becomes the North-seeking pole?

A. P
B. Q
C. R
D. S



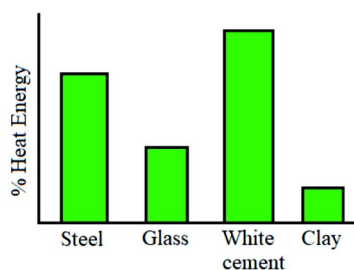
12. Which of these is the most accurate description of air, based on the figure?

A Two-thirds nitrogen, one-third oxygen and one-tenth other gases.
B Three-quarters oxygen and one-third nitrogen and other gases.
C One-half nitrogen and one-half oxygen and other gases.
D One-fifth oxygen and four-fifths nitrogen and other gases.



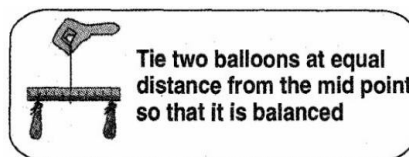
13. The given chart shows the percentage of heat energy reflected by four different materials. What should be used as a roof covering in order to keep the house cool in the hot regions?

A. Steel plates.
B. Clay bricks.
C. Glass panes.
D. White cement

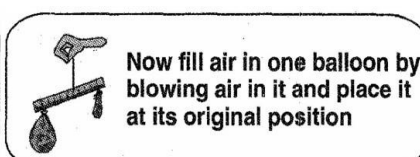


14. The given experiment shows.

A. Air contains dust particles
B. Air occupies space
C. Air has mass
D. Air is colourless



Tie two balloons at equal distance from the mid point so that it is balanced



Now fill air in one balloon by blowing air in it and place it at its original position

15. The gas X is only about 20 parts out of 100 parts of air in the atmosphere. It is needed for decomposition of organic matter. The gas X is_____?

A. Carbon dioxide
B. Water vapour
C. Oxygen
D. Nitrogen.

16. The food items shown in the figure are rich in nutrient X. Read the given statements regarding the nutrient X.

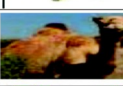


A. When we grow, our body needs X to make new cells.
B. X is also needed to replace old and damaged cells.
C. Growing children and sick people require less amount of X in their diet.
D. The total requirement of X for an adult about 100-130 grams per day. Which of the above statements are incorrect?

A. (i) and (iv) B. (iii) and (iv) C. (ii) and (iii) D. (i) and (ii)

17. Match the two columns and select the correct option from the codes given below____?

- A. (a) - (i), (b) - (ii), (C) - (iii), (d) - (iv)
 B. (a) - (ii), (b) - (iii), (c) - (iv), (d) - (i)
 C. (a) - (i), (b) - (iii), (c) - (ii), (d) - (iv)
 D. (a) - (ii), (b) - (iii), (c) - (i), (d) - (iv)

Option	Column-1	Option	Column2
(a)	Carnivore	(i)	
(b)	Herbivore	(ii)	
(c)	Omnivore	(iii)	
(d)	Autotroph	(iv)	

18. The child in the given figure is suffering from a deficiency disease. This disease is caused due to deficiency of_____?

- A. Carbohydrates
 B. Proteins
 C. Fats
 D. Vitamins

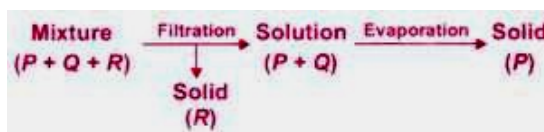


19. Which of the following options describes the advantages of synthetic fibres?

- A. They are stronger and dry easily
 B. They do not wrinkle
 C. They are not attacked by moths and other insects
 D. All of these.

20. Study the given flowchart carefully. What could be P, Q and R respectively?

- A. Chalk powder, Water, Sawdust
 B. Salt, Water, Sugar
 C. Sugar, Water, Sawdust
 D. Sawdust, Water, Sugar



ANSWER KEYS

QUESTION NO	ANSWER	SOLUTION
QUESTION-1	B	Fig (iii) is periscope which is used to see round the corners. It is based upon the principle of rectilinear propagation of light and reflection of light.
QUESTION-2	C	To see the entire length of your body reflected in the mirror, you should use a mirror whose height will allow you to see your whole image.
QUESTION-3	C	The plug covers <i>R</i> and connecting wires cover <i>S</i> should be made of electrical insulators.
QUESTION-4	C	The rubber gloves are bad conductors of electricity. Hence, they prevent electric current to enter in our body and protect us from electric shocks.
QUESTION-5	A	The energy changes from chemical to electrical and then to the heat and then it will give power to light energy
QUESTION-6	A	The third lamp <i>Z</i> is connected parallel to <i>X</i> , so the current get divided among <i>X</i> and <i>Z</i> . So both bulb <i>X</i> and <i>Z</i> light dimmer and bulb <i>Y</i> lights brighter than them.
QUESTION-7	C	Like poles repel each other.
QUESTION-8	B	The maximum iron filings cling to the poles of the magnet <i>i.e.</i> , <i>P</i> and <i>S</i> .
QUESTION-9	C	Like poles of magnets repel each other.
QUESTION-10	D	Magnetic field line is directed from north pole to south pole outside the magnet. So option (D) is correct.
QUESTION-11	B	<i>Q</i> becomes the North Pole and <i>R</i> , where the rubbing magnet is lifted becomes the South Pole.
QUESTION-12	D	The main constituent of air is nitrogen which forms almost 78% (around four fifths) of it and oxygen forms about 21% (around one fifth). Other gases constitute less than 1 % of air.
QUESTION-13	C	
QUESTION-14	C	Air has mass which makes the balloon heavier.
QUESTION-15	C	Air is a mixture of gases, mainly containing nitrogen (about 78% by volume) and oxygen (about 21%). Oxygen is needed for decomposition of organic matter.
QUESTION-16	B	Curd, milk, eggs, fish and meat are good sources of animal proteins. Proteins are bodybuilding food, they help us to grow and repair our body. They are responsible for formation of new tissues and thus replacing old damaged cells. Large amount of proteins are required to fight infection and also by growing children. The total requirement of proteins for an adult is about 50-60 grams per day.
QUESTION-17	D	The codes of the columns matches like Carnivour is the frog Herbivour is the camel Ominovour is the dog Autotrophe is the grasapher or insectes
QUESTION-18	B	The child faces that problem due to the less protien
QUESTION-19	D	Fibres which are obtained artificially by chemical processes are called synthetic fibres. The examples are nylon, rayon and polyester. They are stronger, do not wrinkle and are not attacked by moths and other insects.
QUESTION-20	C	In the mixture of sugar, water and sawdust, firstly sawdust is removed by filtration and then sugar is removed by evaporation.

ANSWER SHEET
National Astronomy & Science Olympiad

Filling of all columns completely & accurately is important.

Candidate's Name

[illegible]

INSTRUCTIONS FOR FILLING THE SHEET

1. This sheet should not be folded or crushed.
2. Use only blue/black ball point pen to fill the circles.
3. Use of pencil is strictly prohibited.
4. Circles should be darkened completely and properly
5. Cutting and erasing on this sheet is not allowed.
6. Do not use any stray marks on the sheet.
7. Do not use marker or white fluid to hide the mark.

WRONG METHODS



CORRECT METHOD



Grade

2nd 3rd 4th 5th 6th 7th 8th 9th 10th

Gender

Male ☐

Female ☐

RollNo.

[illegible]

Father's Name

[illegible]

School Name

[illegible]

E-mail Id

[illegible]

City

[illegible]

School Code

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1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9
0	0	0	0	0	0	0

MARK YOUR ANSWERS HERE

MARK YOUR ANSWERS HERE																			
A B C D					A B C D					A B C D					A B C D				
1	☐	☐	☐	☐	6	☐	☐	☐	☐	11	☐	☐	☐	☐	16	☐	☐	☐	☐
2	☐	☐	☐	☐	7	☐	☐	☐	☐	12	☐	☐	☐	☐	17	☐	☐	☐	☐
3	☐	☐	☐	☐	8	☐	☐	☐	☐	13	☐	☐	☐	☐	18	☐	☐	☐	☐
4	☐	☐	☐	☐	9	☐	☐	☐	☐	14	☐	☐	☐	☐	19	☐	☐	☐	☐
5	☐	☐	☐	☐	10	☐	☐	☐	☐	15	☐	☐	☐	☐	20	☐	☐	☐	☐

Mobile No.[illegible][illegible]

Candidate's Signature

Invigilator's Signature

1. Sanjana took some moong seeds and soaked them overnight in water. Next day, after draining out the water, she wrapped the seeds in a wet cloth. After one day, she observed small white structures growing out of the seeds. These small white structures will develop into

A. Stems
B. Leaves
C. Roots
D. Flowers.

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

Option	Column -1	Option	Column-2
(a)	Vitamin B	(i)	scurvy
(b)	Vitamin B	(ii)	Night blindness
(c)	Vitamin C	(iii)	Pellagra
(d)	Vitamin A	(iv)	Beri-beri

A. (a) - (I), (b) - (iii), (c) - (iv), (d) - (ii)
B. (a) - (IV), (b) - (ii), (c) - (iii), (d) - (I)
C. (a) - (IV), (b) - (iii), (c) - (i), (d) - (ii)
D. (a) - (iii), (b) - (IV), (c) - (ii), (d) - (I)

3. Read the given paragraph.

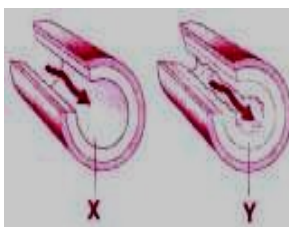
In the 16th and 17th centuries, sailors who went on long voyage suffered from a disease 'X' as they dont get fresh fruits to eat during the voyage. In the year 1747, a doctor named James Lind discovered that if these sailors were given lemons and oranges, the disease was cured very quickly. This led to the discovery that X is a deficiency disease caused by the deficiency of Y. Identify X and Y in the above paragraph and select the correct option.

A. A
B. B
C. C
D. D

Option	Column-X	Column-Y
(A)	Pellagra	Vitamin-B
(B)	Scurvy	Vitamin-C
(C)	Goitre	Iodine
(D)	Rickets	Fluorine

4. Observe the given figures carefully. Figure X shows a normal artery (type of blood vessel) and Figure Y shows a condition in which the artery has become narrow. Narrowing of the artery in Figure Y is may be due to

A. Deposition of proteins
B. Deposition of fats.
C. Deposition of carbohydrates
D. Deposition of vitamin D



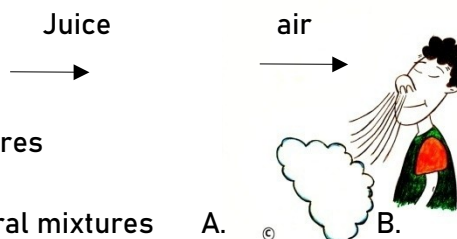
5. Read the given statements and select the correct option.

Statement 1: After harvesting, the stalks of the jute plants are tied into bundles and retted (soaked) in water for about 20 days

Statement 2: The process of retting softens the tissues and helps to separate the fibres.

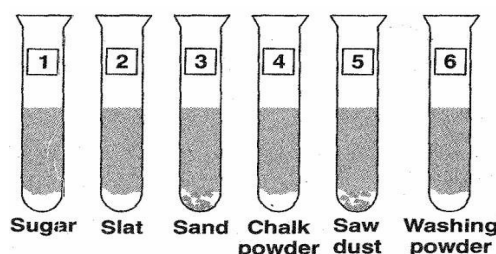
- A. Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.
- B. Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.
- C. Statement 1 is true and statement 2 is false.
- D. Both statements 1 and 2 are false.

6. What is true about the given figures?



- A. In B the boy is taking in solution
- B. Boy is taking in suspension in both the figures
- C. In B the boy is taking in natural mixture
- D. In both the figures the boy is taking in natural mixtures

7. Take 10 ml of water in 6 test tubes each and add different samples of substances to different test tubes as shown in given figure. Shake each test tube vigorously for a couple of seconds and leave them undisturbed. Which of the samples remain insoluble in water?



- A. 1, 2 & 3
- B. 2, 3 & 4
- C. 3, 4 & 5
- D. 4, 5 & 6

8. Shobha took two liquids (coconut oil and water) in a separating funnel kept on a stand as shown in the figure. What would she observe after some time?

- A. Layer 'X' is coconut oil, Y is water and two distinct layers are formed.
- B. Layer 'X' is water, Y is coconut oil and two distinct layers are formed.
- C. Layers X and 'Y' is miscible to some extent, hence do not form distinct layers.
- D. Coconut oil is first collected in the beaker.



9. Sudha took lemon juice in two flasks. She put salt in flask I and washing soda in flask II. She observed lot of bubbles in flask II but nothing in flask I. What could be the reason for this?

- A. In flask I, a chemical change takes place.
- B. In flask II, a chemical change takes place and bubbles of carbon dioxide are seen.
- C. In flask II, a physical change takes place producing a lot of bubbles.
- D. In flask I, salt reacts with lemon juice and gets dissolved.



10. The given figures show examples of

- A. Both (X) and (Y) are irreversible changes
- B. Both (X) and (Y) are reversible changes
- C. (X) Irreversible change, (Y) Reversible change
- D. (X) Reversible change, (Y) Irreversible change.



11. These figures exemplify

Busting Cracker

Burning Paper

- A. Reversible changes
- B. Physical changes
- C. Fast changes
- D. Slow changes



12. Read the following phenomena carefully.

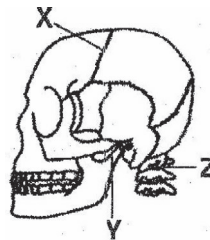
- (i) Forest fire
- (ii) Growth of plants
- (iii) Low and high tides
- (iv) Occurrence of a rainbow
- (v) Earthquakes
- (vi) Opening of a morning glory flower.

Which of the above events can be referred to as periodic changes?

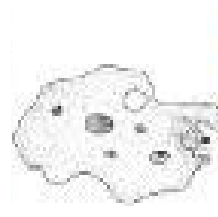
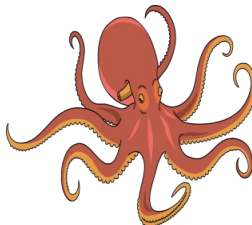
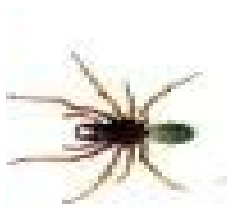
- A. (i), (ii) & (iii)
- B. (ii), (i) & (v)
- C. (iv), (v) & (vi)
- D. (iii) & (vi)

13. In the given figure, X, Y and Z represent _____, _____ & _____ joints respectively.

- A. Fixed, hinge and pivot
- B. Hinge, pivot and fixed
- C. Pivot, hinge and fixed
- D. None of the above



14. What is one thing common in the animals shown below?



- A. They all live in water
- B. They all lack backbone
- C. They all have scales on their body
- D. They all lay eggs to reproduce

15. In circular motion the_____?

- A. Direction of motion is fixed
 B. Direction of motion changes continuously
 C. Acceleration is zero
 D. Velocity is constant.

16. Match the following and select the correct option from the codes given below.

- A. (a) - (ii), (b) - (i), (c) - (iv), (d) - (iii)
 B. (a) - (iii), (b) - (ii), (c) - (i), (d) - (iv)
 C. (a) - (i), (b) - (iv), (c) - (iii), (d) - (ii)
 D. (a) - (iv), (b) - (iii), (c) - (ii), (d) - (i)

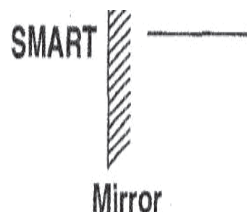
Quantity	Unit symbol
(a) Length	(i) m
(b) Mass	(ii) N
(c) Time	(iii) s
(d) Force	(iv) kg

17. Anjali placed a metre stick in the playground at 8.00 a.m. in the morning. How will the shadow of the stick at 12:00 noon be in comparison to the one at 8:00 a.m.?

- A. There will be no shadow.
 B. The shadow will be longer and on the opposite side of the stick.
 C. The shadow will be shorter and on the same side as the sun.
 D. The shadow will be shorter and on the opposite side of the sun.

18. The mirror Image of 'SMART' will be.

- A. TЯAMƆ
 B. TAMSЯ
 C. SMART
 D. SMRAT.



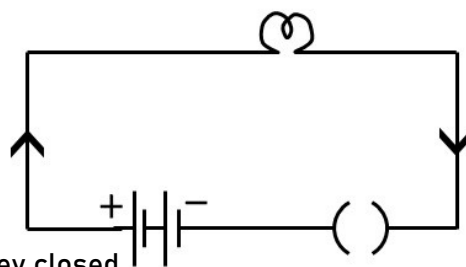
19. Read the given statements and select the correct option.

- Statement 1: A convex mirror always forms a virtual image.
 Statement 2: A diverging beam incident on a convex mirror is reflected as a diverging beam.
- 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. Statement 1 is false and statement 2 is true.

20. Study the circuit carefully and answer

What does the above circuit diagram shows?

- A. A closed circuit
 B. A circuit tester
 C. A circuit with key opened
 D. A circuit with key closed



ANSWER KEYS

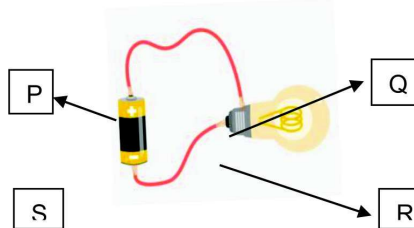
QUESTION NO	ANSWER	SOLUTION
QUESTION-1	C	The white structures observed are roots because the seeds have sprouted. These sprouted seeds can be washed and eaten raw as a protein rich snack.
QUESTION-2	C	Column 2 matches with 1 like beri -beri/pellagram/scurvy/night-blindness
QUESTION-3	B	The deficiency disease scurvy occurs due to lack of vitamin C in diet. In this disease, the gums become swollen and bleed, bones become fragile and there is delay in healing of wounds. The body stores very little vitamin C so it should be supplied daily in the diet. Citrus fruits such as lemon and orange are good sources of Vitamin C.
QUESTION-4	D	Eating too much of fats is not good for us. It gets deposited in the lining of our blood vessels and makes them narrower. Our heart then has to work harder to push the blood through the blood vessels. This can increase the risk of heart problems.
QUESTION-5	A	Jute is a long, soft, shiny plant fibre that can be spun into coarse strong threads. The jute is harvested during flowering stage. The stems are cut off close to the ground and are left to dry for sometime. Dried stems or stalks are tied into bundles and soaked in water for 20 days. This process is called retting. It softens the tissue and permits the fibres to be separated.
QUESTION-6	C	The boy in the b is taking natural mixture from the atmosphere
QUESTION-7	C	Sand, chalk powder and saw dust are insoluble in water. They settle down in the test tubes. Sugar, salt and washing powder are soluble in water.
QUESTION-8	A	Oil and water are immiscible liquids and form two distinct layers in which oil floats on top of water.
QUESTION-9	B	Lemon juice (acid) reacts with washing soda (base) and liberates carbon dioxide gas, a new substance. Thus, it is a chemical change. Whereas addition of salt in lemon juice is a physical change as chemical reaction does not take place.
QUESTION-10	C	Stitching a shirt is irreversible change because the cloth cannot be brought back to its original shape while lighting an electric bulb is a reversible change because it can be switched on and off as and when required.
QUESTION-11	C	The both the images are clearly saying that crackers and paper will gives the fast changes
QUESTION-12	D	Periodic changes are the changes which keep repeating themselves after a regular period of time. So, low and high tides and opening of morning glory flower are examples of periodic changes.
QUESTION-13	A	The skull is fully covered with fixed/hinge&pivot
QUESTION-14	B	The backbone or the vertebral column is a long, bony, rod-like structure, which extends from the base of the skull to the lower back. The animals which possess the backbone are called vertebrates and the ones which do not possess it are called invertebrates. Ant, spider, starfish, Amoeba and octopus are invertebrates.
QUESTION-15	B	When an object moves along a circular path, it is called circular motion. During such a motion, the direction of motion at any point is given by the tangent at that point which changes continuously.

QUESTION-16	C	The correct matches for the given quantity are mass,kilo grams,seconds,and newtons
QUESTION-17	D	The length of the shadow changes with the position of the sun. The shadow is longer in the morning and decrease to its shortest at noon. In the afternoon, it again grows and is very long at sunset.
QUESTION-18	A	The image formed by the plane mirror is laterally inverted and also front to back inversion. This means that the image and the object change sides. Left becomes right and right becomes left when seen in a mirror.
QUESTION-19	B	The image formed by a convex mirror is always virtual, whatever be the position of the object.
QUESTION-20	C	The circuit clearly says that the keys opened to the main switch.

Invigilator's Signature

1. Look at the given figure. It consists of a cell, a bulb with the two terminals X and V and wires with ends P and Q; and S and R. The direction of current will be_____?

- A. PQRS
B. SRQP
C. PRQS
D. SQR P



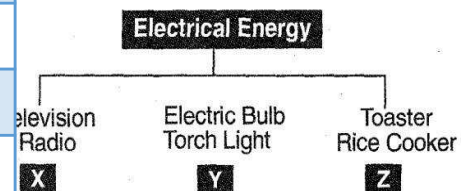
2. The age of the solar system is derived from the study of the oldest accessible material around like the meteorites. How old is our solar system?



- A. 4.6 billion years
B. 13.8 billion years
C. 6,000 years
D. 15,000 years

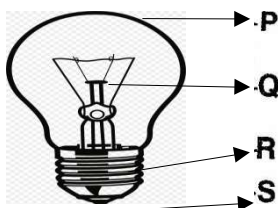
3. Study the classification carefully and choose the correct answer from the table____?

Option	Column-X	Column-Y	Column-Z
A	Refrigerator	Clock	Microwave
B	Music system	Washing Machine	Heater
C	Walkman	Table lamp	Electric kettle
D	Air conditioner	Heater	Hair drier



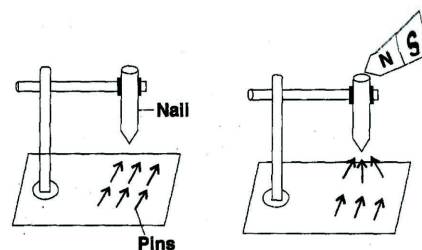
4. Which part of the bulb is an insulator?

- A. P
B. Q
C. R
D. S



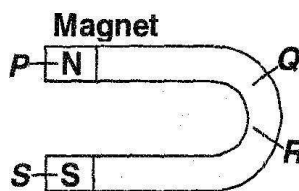
5. Study the given figure. Which phenomenon from the following is demonstrated by the experiment?

- A. Pin gets magnetised indirectly from the nail
B. The figures shows how pins can be demagnetised
C. The nail becomes magnetised when bar magnet is touched and so attracts the pins
D. None of these



6. Did an experiment to find out which part of the magnet attracts the most pins. Which of these readings is correct? Number of pins attracted by the magnet?

Option	P	Q	R	S
A	8	1	2	8
B	8	3	3	2
C	3	2	3	8
D	1	8	8	1



7. Shirisha puts two different objects in each of the following containers.

- Container (i) : copper coin and iron nail
Container (ii): steel nail and aluminium earring
Container (iii) : marble and gold coin
Container (iv) : nickel coin and steel nail

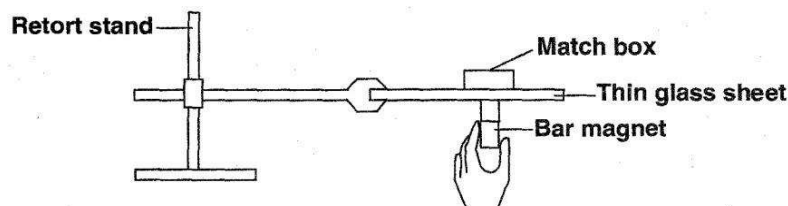
She can use a magnet to separate the objects in containers _____

- A. (i) & (ii) B. (i), (ii) & (iii)
C. (i), (ii) & (iv) D. (i), (ii), (iii) & (iv)

8. A matchbox containing an unknown object is placed on a thin sheet of glass in the experimental set-up shown below.

When the bar magnet moves, it is able to drag the matchbox along.
What is most likely to be found in the matchbox?

- A. Marble
B. Toothpick
C. Ten paisa coin
D. Steel ball bearing



9. Sugar will dissolve most easily in which of the following beakers?

- A. Water at 0°C B. Water at 30°C C. Water at 15°C D. Water at 60°C

10. Which of the following are true about acid rain?

- (i) Acid rain is very harmful to the environment
- (ii) Acid rain can harm aquatic organisms
- (iii) Acid rain helps fisherman to catch more fish
- (iv) Acid rain causes damage to building

- A. (i) & (ii) B. (i) & (iii)
C. (i), (iii) & (iv) D. (i), (ii) & (iv)

11. Study the classification chart below.

Select the suitable option for Group P and Group Q, and resources X and Y.



Option	Group-P	Group-Q	Group-X	Group-Y
(A)	Biodegradable	Non-biodegradable	Wood	Plastic
(B)	Biodegradable	Non-biodegradable	Non-metals	Alloys
(C)	Renewable	Non-renewable	Water	coal
(D)	Renewable	Non-renewable	Minerals	oxygen

- A. A B. B C. C D. D

12. Study the figures given below. Which of the following is/are protective food(s)?

- A. A
B. B
C. C
D. All of these



A.



B.



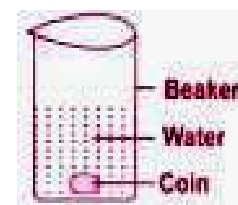
C.

13. If P represents the fibre and Q represents the fabric, find out the correct order in which Q is made from P.

- A. P, weaving, spinning, obtained from plant, yarn, Q
B. P, obtained from plant, spinning, weaving, yarn, Q
C. P, obtained from plant, spinning, yarn, weaving, Q
D. None of the above

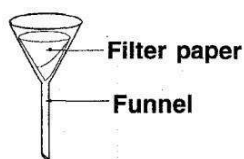
14. Annu took a glass beaker and filled it with clean water. She put a silver coin in it and looked the coin from the top of the beaker. What would be her observation?

- A. She could not see the coin properly because water is translucent.
B. She could see the coin clearly because water is opaque.
C. She could see the coin clearly because water is transparent.
D. She could not see the coin because the coin is transparent.



15. The equipment shown here can be used to separate_____?

- A. A mixture of salt and pepper
- B. A mixture of pepper and water
- C. A mixture of oxygen and water
- D. A solution of silver nitrate in water.



16. What are X, Y and Z in the figure?

- A. X = Mixture, Y = Residue, Z = Filtrate
- B. X = Mixture, Y = Filtrate, Z = Residue
- C. X = Residue, Y = Filtrate, Z = Mixture
- D. X = Filtrate, Y = Residue, Z = Mixture



17. Which picture shows a chemical change?

A.



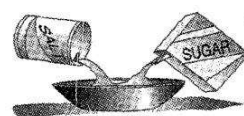
B.



C.



D.



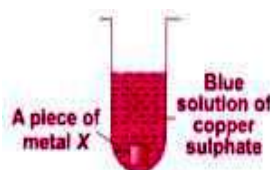
18. In burning of paper.____?

- A. PA. A new substance is formed
- B. Change is permanent
- C. Both (A) & (B)
- D. Physical change occurs

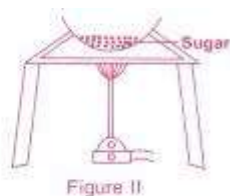
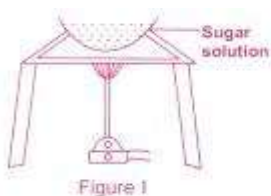


19. A metallic piece (X) is dropped into copper sulphate solution. After sometime, the blue colour of the solution changes to green. The change which has occurred is_____?

- A. Physical and reversible change
- B. Physical and irreversible change
- C. Chemical and reversible change
- D. Chemical and irreversible change.



20. Observe the two figures given below. In figure I, a solution of sugar in water is heated and in figure II, only sugar is being heated. What is the correct sequence of changes taking place?



- A. In figure I, physical change is taking place while in figure II a chemical change is taking place.
- B. In figure I, a chemical change is taking place while in figure II a physical change is taking place.
- C. In both figures, physical changes are taking place.
- D. In both figures, chemical changes are taking place.

ANSWER KEYS

QUESTION NO	ANSWER	SOLUTION
QUESTION-1	A	The direction of current will be <i>PQRS</i> because the current flows from positive terminal of the cell to the negative terminal.
QUESTION-2	A	The age of the solar system is 4.6 billion years.
QUESTION-3	C	Electrical energy for x-walk men,y-table lamp,z-electrical kettle.
QUESTION-4	C	<i>P</i> is the glass cover, <i>Q</i> is the filament, <i>R</i> is the supporting wires, while <i>S</i> is the positive terminal of the bulb.
QUESTION-5	C	It shows that the nail becomes magnetised when bar magnet is touched and so attracts the pins
QUESTION-6	A	<i>P</i> Number of pins.
QUESTION-7	A	In containers (i), iron nail is magnetic and copper coin is nonmagnetic. In container (iv), both nickel (ion) and steel nail are magnetic. So, Reeta can use a magnet to separate the object only in containers (i) and (ii).
QUESTION-8	D	=> Marbel, Tooth Pick and Ten Paise coin are non iron element. The match box must contain some magnetic material <i>i.e.</i> , steel ball bearing.
QUESTION-9	D	Sugar dissolves easily at high temperature because solubility increases with increase in temperature.
QUESTION-10	D	When pollutants like sulphur dioxide and nitrogen dioxide mix with the water vapour in the air, they form H_2SO_4 and HNO_3 . These acids mix with rain and fall on the ground as acid rain. Acid rain is very harmful as it can damage plants, buildings, aquatic life, soil and human health.
QUESTION-11	C	Natural resources are of two types: renewable resources and non-renewable resources. Renewable resources are those resources that can be restored in a short time. Non-renewable resources are those resources that take very long time for restoration. Water and wind are examples of renewable resources whereas coal and petroleum are non-renewable resources obtained from fossils.
QUESTION-12	C	Protective foods are those foods that protect our body from various types of diseases. Protective foods include fruits, green leafy vegetables, berries, whole grains, etc.
QUESTION-13	C	Material used to make clothes is called fabric. For the manufacturing of a fabric first of all fibres are obtained from plant or animals, then they are converted into yarns through spinning. The spun yarns are then weaved together to turn them into fabric.
QUESTION-14	C	Those substances or materials through which things can be seen, are called transparent e.g., water, glass and air.
QUESTION-15	B	A mixed partical of paper and water
QUESTION-16	A	The given figure shows the process of filtration. It is a method of separating a mixture (<i>X</i>) of an insoluble solid and a liquid. The liquid obtained after filtration (<i>Z</i>) is known as the filtrate. The insoluble solid left in the filter paper (<i>Y</i>) is called the residue.
QUESTION-17	C	The heat or burning can easily shows the chemical changes
QUESTION-18	C	In this process change is permanante and the new substance is formed
QUESTION-19	D	Metal (<i>X</i>) reacts with blue coloured solution of copper sulphate and forms a new substance (green coloured solution of iron sulphate) and cannot be converted back to the original solution. Thus, it is irreversible chemical change.
QUESTION-20	A	In figure I, evaporation of water from sugar solution is a physical change because there is only change in state of matter from liquid to solid state. In Figure II, when sugar is heated, it turns brown due to formation of a new substance and it cannot be reversed, therefore, it is a chemical change.

ANSWER SHEET
National Astronomy & Science Olympiad

Filling of all columns completely & accurately is important.

Candidate's Name

[illegible]

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5. Cutting and erasing on this sheet is not allowed.
6. Do not use any stray marks on the sheet.
7. Do not use marker or white fluid to hide the mark.

WRONG METHODS

CORRECT METHOD



Grade

Gender

2nd 3rd 4th 5th 6th 7th 8th 9th 10th

Male ☐

Female ☐

RollNo.

[illegible]

Father's Name

[illegible]

School Name

[illegible]

E-mail Id

[illegible]

City

[illegible]**School Code**

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MARK YOUR ANSWERS HERE

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A B C D

A B C D

A B C D

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Mobile No.[illegible][illegible]

Candidate's Signature

Invigilator's Signature

1. Which of the following are adaptations for animals that spend more time in or on water?

- (i) Thin membranous skin on their bodies.
- (ii) Dense waterproof feathers.
- (iii) Long eye lashes.
- (iv) Nostrils positioned near the top of head.
- (v) Thick layer of fat underneath the skin.

A. (i) and (iv) B. (ii) and (iii) C. (i), (iii) and (v) D. (ii), (iv) and (v)

2. Match Column-I with Column-II and select the correct option from the codes given below:

	Column-I		Column-II
(a)	Car moving on a straight road	(i)	Periodic Motion
(b)	Revolution of Moon around the earth	(ii)	Rectilinear Motion
(c)	Rotation of the Earth around its axis	(iii)	Circular Motion
(d)	Movement of a pendulum	(iv)	Rotational Motion

A.a - (ii), b - (iii), c - (iv), d - (i)

B.a - (iii), b - (ii), c - (i), d - (iv)

C.a - (iv), b - (iii), c - (ii), d - (i)

D.a - (i), b - (ii), c - (iii), d - (iv)

3. Which of the following would help us to reduce the amount of water brought from other Countries ?

- (i) Boiling water after use
- (ii) Recycling water
- (iii) Obtaining water from the sea
- (iv) Building more reservoirs to collect rainwater

A. (ii) only B. (i) & (iii) only C. (ii) & (iv) only. D. (ii), (iii) & (iv)

4. Hardness of water is due to the presence of?

- A. Chlorides and sulphates of calcium and potassium
- B. Bicarbonates, chlorides and sulphates of calcium and magnesium
- C. Bicarbonates and chlorides of potassium and magnesium
- D. Bicarbonates, chlorides and sulphates of calcium, potassium and magnesium

5. Four different nails, (i), (ii), (iii) and (iv), were stroked with a magnet. Which of them will become magnets?

- (i) Iron nail (ii) Steel nail
(iii) Copper nail (iv) Aluminium nail

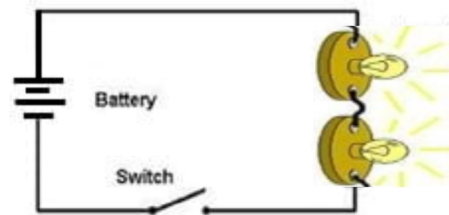
- A. (i) & (ii) B. (iii) & (iv) (i), C. (ii) & (iii) D. (i),(ii), (iii) & (iv)

6. You should not store a floppy disk near a magnet because _____.

- A. The magnet will rust
B. The magnet will become weaker
C. The information in the disk may be erased
D. The magnet will break the disk

7. Neelu has two bulbs connected across two cells in a simple circuit as shown. How can she make the bulbs glow dimmer?

- A. Replace one cell with a piece of chalk.
B. Replace one cell with a piece of wire.
C. Replace one bulb with a piece of wire.
D. Replace one bulb with another cell



8. When a drill bores a hole in a piece of wood, it describes_____?

- (i) Rotatory motion (ii) Translatory motion
(iii) Curvilinear motion (iv) Oscillatory motion

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

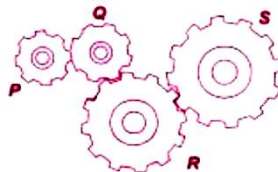
9. The smallest time measured by a wrist watch accurately is

- A. 1 milli second B. 60 seconds C. 1 second D. 1 hour

10. Raj applied a force to make the smallest gear P, rotate in a clockwise direction as shown. In which direction will gears Q, R and S rotate? The given diagram shows four gears.

Option	Column-Q	Column-R	Column-S
(A)	Anti-clockwise	Anti-clockwise	Clockwise
(B)	Anti-clockwise	Clockwise	Anti-Clockwise
(C)	Clockwise	Anti-clockwise	Clockwise
(D)	Clockwise	Anti-clockwise	Anti-clockwise

- A . A B . B
C . C D . D



11. Sub multiple micro is equal to_____?

- A. 1/1000000 B. 1/100000 C. 1/100000000 D. 1/1000

12. Two identical metal balls A and B moving in opposite directions hit each other at point X as shown in the figure. Changes are most likely to be appear in their?

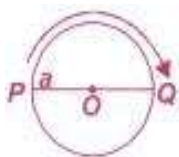


1. Shapes 2. Speeds
3. Directions 4. Volumes

- A. 1 and 3 only B. 2 and 3 only C. 2 and 4 only D. 1, 2 and 3 only

13. A cyclist moves from a certain point P and goes round a circle of radius a and reaches Q, exactly at the other side of the point P as shown in figure. The displacement of the would be cyclist?

- A. πa
B. $2\pi a$
C. $2a$
D. $2\pi / a$



14. Cinchona, is abgol, neem, Rauwolfia are?

- A. Oil yielding plants B. Medicinal plants
C. Fibre yielding plants D. Food plants.

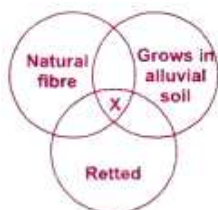
15. In humans, deficiency of which of the following vitamins show the symptoms given below?

- A. Vitamin C B. Vitamin D
C. Vitamin A D. Vitamin B

The bones become soft and bend

16. Identify X in the given Venn diagram.

- A. Silk
B. Wool
C. Nylon
D. Jute



17. The process of rearing of silkworms for the production of silk is known as_____?

- A. Sericulture B. Silviculture
C. Horticulture D. All of these.

18. Which of the following is a correct difference between weaving and knitting?

- A. Weaving is done with machine while knitting is done with hand only.
- B. Weaving uses two sets of yarn while knitting involves only one yarn.
- C. Weaving is done for silk only while knitting is done for wool only.
- D. All of these.

19. Read the following activity and answer.

Take 5 g of solid camphor in a china dish and cover it with inverted funnel. Plug the stem of the funnel with cotton. Heat the dish.



What is true about the above activity?

- (A) Heat changes the camphor to vapour
- (B) Crystals of camphor get deposited on the inner walls of the funnel
- (C) Both (A) & (B)
- (D) None of the above

20. Methods of separation depend on the nature of the constituents in a mixture. Study the methods of separation as given below.

Which of these is incorrect method of separation?

	Types of mixture	Methods of separation
1.	Solid-Solid	Handpicking, Sieving
2.	Solid-Liquid (immiscible)	Sedimentation, Decantation, Filtration
3.	Liquid-Liquid (immiscible)	Decantation, Separating funnel
4.	Solid-Liquid (miscible)	Filtration, Decantation
5.	Liquid-Liquid (miscible)	Distillation

A. 1 and 2

B. 5

C. 1 and 5

D. 4

ANSWER KEYS

QUESTION NO	ANSWER	SOLUTION
QUESTION-1	D	Living Organisms & Surroundings
QUESTION-2	A	- Rectilinear Motion after Circular Motion then Rotational Motion and Periodic Motion
QUESTION-3	D	Air and water
QUESTION-4	B	Presence of bicarbonates, chlorides and sulphates of calcium and magnesium causes hardness of water. Hard water does not produce lather with soaps and detergents.
QUESTION-5	A	Only magnetic materials stroked with a magnet can become magnets.
QUESTION-6	C	A floppy disk should not be stored near a magnet as a magnet can distort the alignment inside the floppy disk and hence the information stored in the disk may get erased.
QUESTION-7	B	Replacing one cell with a piece of wire reduces the current in the circuit. Hence, the bulbs glow dimmer.
QUESTION-8	B	Movement of drill is a combination of two types of motion, rotatory and translatory motion.
QUESTION-9	C	The least count of a wrist watch is 1 second.
QUESTION-10	B	If gear <i>P</i> rotates in a clockwise direction, then gear <i>Q</i> will rotate in anticlockwise direction, gear <i>R</i> in clockwise direction and gear <i>S</i> in anticlockwise direction.
		
QUESTION-11	A	1 Micron means $10^{-6} = 1/1000000$ Submultiple micro (<i>m</i>) is equal to 10^{-6} or $1/1000000$
QUESTION-12	B	In case of collision, changes are most likely to be appear in the speed and direction of both the balls.
QUESTION-13	C	Displacement of the cyclist = Shortest distance between <i>P</i> and <i>Q</i> = $PO + OQ$ = $a + a$ = $2a$.
QUESTION-14	D	The plants that are used as natural medicines are called medicinal plants. They may be used directly or in extracted forms or they may be used as agents in the synthesis of drugs. The plants of <i>Cinchona</i> , isabgol, neem and <i>Rauwolfia</i> are used as medicinal plants since prehistoric times.
QUESTION-15	B	Vitamine -D helps us to grow our bone and makes soft
QUESTION-16	D	Jute is a natural fibre obtained from stems of plants of genus <i>Corchorus</i> . It is grown in alluvial soil in delta regions of rivers Ganges and Brahmaputra. The processing of jute involves retting.
QUESTION-17	A	Silk is obtained from the cocoon of the silkworms which feed on leaves of the mulberry plant. Rearing of silkworms is known as sericulture.
QUESTION-18	B	Weaving uses two types of yarns and arrange them together whereas knitting uses a single long yarn. Both of these processes can be done either by hand or machine.

QUESTION-19	C	-Heat changes the camphor to vapour -Crystals of camphor get deposited on the inner walls of the funnel
QUESTION-20	D	Miscible solid liquid mixture cannot be separated by filtration and decantation. It can be separated by evaporation.

ANSWER SHEET
National Astronomy & Science Olympiad

Filling of all columns completely & accurately is important.

Candidate's Name

[illegible]

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WRONG METHODS

CORRECT METHOD



Grade

Gender

2nd 3rd 4th 5th 6th 7th 8th 9th 10th

Male ☐

Female ☐

RollNo.

[illegible]

Father's Name

[illegible]

School Name

[illegible]

E-mail Id

[illegible]

City

[illegible]**School Code**

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MARK YOUR ANSWERS HERE

A B C D

A B C D

A B C D

A B C D

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Mobile No.[illegible][illegible]

Candidate's Signature

Invigilator's Signature

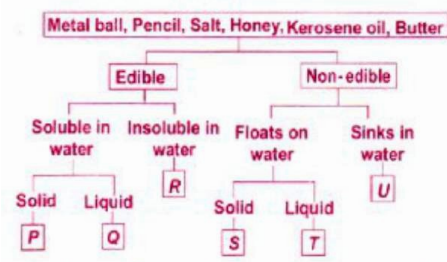
1. Figure shows that_____?

- A. Paper is transparent.
- B. Paper is translucent.
- C. Paper is opaque.
- D. Torch is made up of non-conducting materials.



2. Following flowchart was prepared by Anjali for sorting materials into different groups. She handed over the chart to her teacher with few blanks. Fill in the blanks from the given options.

Option	P	Q	R	S	T	U
A.	Butter	Honey	Salt	Metal ball	Kerosene oil	Pencil
B.	Salt	Honey	Butter	Pencil	Kerosene oil	Metal ball
C.	Salt	Butter	Honey	Metal ball	Pencil	Kerosene oil
D.	Pencil	Honey	Salt	Salt	Kerosene oil	Pencil



- A. A
- B. B
- C. C
- D. D

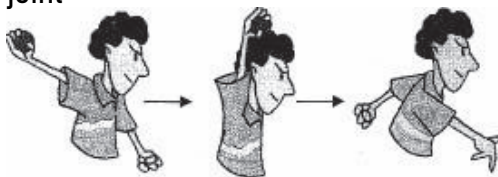
3. Given process is_____?

- A. Condensation
- B. Boiling
- C. Freezing
- D. None of these



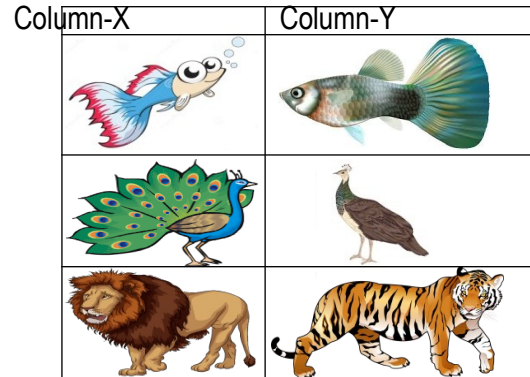
4. Motion in the given figures is performed with the help of_____?

- A. Ball and socket joint
- B. Hinge joint
- C. Pivot joint
- D. Fixed joint



5. The figures show some animals in two columns X and Y. Which of the following headings is? the most suitable for the two groups?

Option	Column-X	Column-Y
A	Males	Females
B	Colourful	Colourless
C	Adult	Young
D	No camouflage	Camouflaged.



6. What is the function of the component shown above?

- A. It is used to connect the bulb to the other components in the circuit
 B. It provides the energy for the bulb to glow
 C. It controls the flow of current in a circuit
 D. It measures the current in a circuit.

7. Study the classification carefully and choose the correct answer from the table.

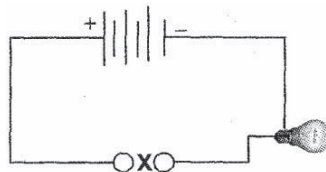
Option	Column-X	Column-Y	Column-Z
(A)	Refrigerator	Clock	Microwave
(B)	Music system	Washing Machine	Heater
(C)	Walkman	Table lamp	Electric kettle
(D)	Air-conditioner	Heater	Hair drier



- A. A B. B C. C D. D

8. Study the circuit carefully and answer?
 What can be placed between the open ends to light up the bulb?

- (i) Needle
 (ii) Iron nail
 (iii) Copper coin
 (iv) Wooden piece



- A. (i) & (iii) B. (ii) & (iii) (i), C. (ii) & (iii) All D. All of these.

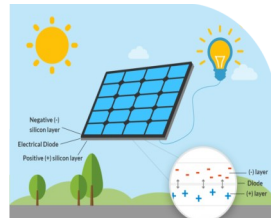
9. There is a mistake in the following classification. Which of the following is placed incorrectly in the groups?

Non conductor of electricity	Conductor of electricity
Wool	Copper
Cotton	Brass
Plastic	Iron
Cork	Steel
Carbon	Silver

- A .Wool B. Carbon C. Iron D. Silver

10. Which of the following energy changes take place in the figure show?

- A. Light → Solar → Electrical energy
- B. Solar → Potential → Light Energy
- C. Solar → Electrical → Light Energy
- D. Light → Electrical → Solar Energy



11. Which of the following statements is/are wrong?

- (i) Human body is a bad conductor of electricity.
- (ii) The air gap surrounding an electric circuit acts as an insulator.
- (iii) A battery always has two terminals.
- (iv) When electricity lights up a bulb, no heat is produced

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

12. Few changes are given below. Mark the correct option from the given codes.

- (i) Milk is set to form curd.
- (ii) Batter is steamed to form idlis.
- (iii) Water is boiled to form steam.
- (iv) Salt is dissolved in water to form solution.

Option	Column-1	Column-2	Column-3	Column-4
(A)	Physical	Physical	Chemical	Chemical
(B)	Physical	Chemical	Physical	Chemical
(C)	Chemical	Chemical	Physical	Physical
(D)	Physical	Chemical	Chemical	Physical

- A. A
- B. B
- C. C
- D. D

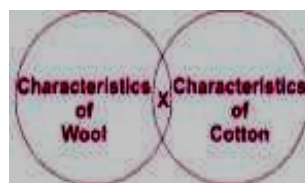
13. Match both the columns and select the correct option from the codes given below.

Column I	Column II
(a) Removal of larger particles from smaller ones	(i) Sieving
(b) Separation of cream from milk	(ii) Filtration
(c) Separation of a mixture of mud and water	(iii) Churning
(d) The process of making mud particles heavy	(iv) Loading

- A. (a) - (i), (b) - (ii), (c) - (iii), (d) - (iv)
- B. (a) - (ii), (b) - (iii), (c) - (iv), (d) - (i)
- C. (a) - (i), (b) - (iii), (c) - (ii), (d) - (iv)
- D. (a) - (iv), (b) - (ii), (c) - (iii), (d) - (i)

14. Refer the given Venn diagram. Which of these characteristics can be represented as X?

- A. Ability to trap and retain air.
- B. Fluffy texture.
- C. Comfortable to wear in hot and humid weather.
- D. None of these.



15. Wool is obtained from the fleece of sheep or goat. It is also obtained from the hair of_____?



A.



B.



C.

D. All of these

16. Bleeding gums and wounds taking longer time to heal are the symptoms of a particular disease. Identify the disease and the deficiency of vitamin/mineral causing it.

Option	Disease	Deficiency of vitamin/mineral
A	Scurvy	Vitamin -A
B	Rickets	Iodine
C	Goitre	Calcium
D	Scurvy	Vitamin C

17. Select an incorrect match?

Option	Minerals	Deficiency disease
(A)	Iron	Anaemia
(B)	Calcium	Rickets
(C)	Iodine	Goiter
(D)	Phosphorus	marasmus

A. A

B. B

C. C

D. D

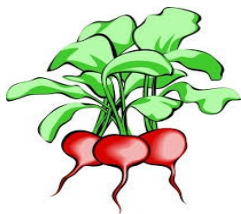
18. Some changes are classified as given below:

S. No	Change	Reverdible change	Physical change
I	Melting of butter	✓	✓
II	Burning of diesel	✓	✗
III	Wool knitted to sweater	✓	✓
IV	Dissolving 'eno' in water	✓	✓
V	Cooking of food	✗	✗
VI	Squaring of milk	✗	✓

Which of the above change are correctly matched?

- A. I, II, III and V only
 B. II, IV and VI only
 C. I, III and V only
 D. All are correct

19. Identify the figures (A-D) and select the incorrect statement.



A.



B.



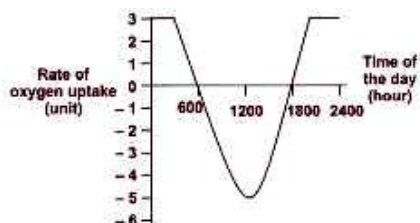
C.



D.

- A. It is a modified tuberous root which serves as a storage organ.
- B. Edible part of B is same as edible part of potato.
- C. C is a fruit which is eaten as a vegetable.
- D. Edible part of D is same as in broccoli.

20. The graph below shows the rate of oxygen uptake of a plant in 24 hours.



Which of the following holds true regarding the plant at 1200 hour?

- A. It carried out respiration, but not photosynthesis.
- B. It carried out photosynthesis at the maximum rate.
- C. The rate of photosynthesis was equal to the rate of respiration.
- D. The rate of photosynthesis was lower than the rate of respiration.

ANSWER KEYS

QUESTION NO	ANSWER	SOLUTION
QUESTION-1	B	Paper is an translucent metal if stops the light focus a little.
QUESTION-2	B	The table shows that the solids and liquids should be separated like (P)Salt(Q).butter(R).honey(S).pencil(T).kerosene oil(U)metal ball
QUESTION-3	B	Boiling process to check the report the leaf
QUESTION-4	A	Socket joint will helps to spin the ball
QUESTION-5	A	It will be helpful for both the male and female group
QUESTION-6	A	It is used to connect the bulb to the other components in the circuit
QUESTION-7	C	In X, the electrical energy is converted into sound energy. In Y, the Electrical Energy gets converted into light energy. In Z, the electrical energy is converted into heat energy. So, (C) is the correct option.
QUESTION-8	B	We can use any of a metal like iron, needle, or copper which flows current through it
QUESTION-9	B	Carbon is a conductor of electricity.
QUESTION-10	C	It will take the heat of energy form the sun and then it will converts to the electricity
QUESTION-11	C	Human body is a good conductor of electricity. When electricity lights up a bulb, heat is produced.
QUESTION-12	C	A change in which a substance undergoes a change in its physical properties is called a physical change. It is generally reversible and in such a change no new substance is formed. For example, boiling of water, dissolving of salt in water, melting an ice cube, crumpling a sheet of paper, breaking a bottle etc. A change in which one or more new substances are formed by means of a chemical reaction is called a chemical change. It is generally irreversible. For example, setting of milk into curd, making idlis, rusting of iron, cooking of food etc.
QUESTION-13	C	Sieving: It is a process by which fine particles are separated from bigger particles by using sieve. Filtration: It is a process in which a solid liquid mixture is separated by using a filter paper. Churning: Causes rotation of milk/curd at a high speed. Cream being lighter collects towards the centre. Threshing: The process of separating grains from husk or chaff or stalks. In this process, the stalks are beaten to free the grain seeds.
QUESTION-14	D	Wool is obtained from hair of certain animals. It is fluffy and hence retains air. Clothes made from wool are worn in cold weather. Cotton clothes do not trap and retain air and are not fluffy. They are worn in hot and humid weather
QUESTION-15	D	Bulls and camel and rabbit hair will also be collected to make and wool
QUESTION-16	D	Problem with teeth will cause this Scurvy disease
QUESTION-17	D	All the nutrients are required by the body in specific quantities. People who do not get a balanced diet suffer from deficiency diseases. Protein deficiency causes Marasmus and Kwashiorkor which leads to slow physical and mental development. Deficiency of phosphorus causes weakness, bad teeth and bones.
QUESTION-18	C	There will be some difference when those three dissolved are mixed with some other particles
QUESTION-19	D	Edible part of food grains is same as in broccoli.
QUESTION-20	B	The graph shows that It carried out photosynthesis at the maximum rate.

Filling of all columns completely & accurately is important.

Candidate's Name

[illegible][illegible]

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1. This sheet should not be folded or crushed.
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6. Do not use any stray marks on the sheet.
7. Do not use marker or white fluid to hide the mark.

WRONG METHODS

CORRECT METHOD



Grade

Gender

2nd 3rd 4th 5th 6th 7th 8th 9th 10th

Male ☐

Female ☐

RollNo.

[illegible][illegible]

Father's Name

[illegible]

School Name

[illegible]

E-mail Id

[illegible]

City

[illegible]**School Code**

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9	9	9	9	9	9	9
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MARK YOUR ANSWERS HERE

A B C D

A B C D

A B C D

A B C D

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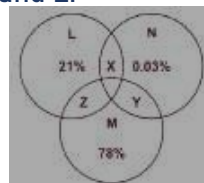
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Candidate's Signature

Invigilator's Signature

1. Study the given figure and identify the gases (L, M and N) present in our atmosphere? Select the incorrect option regarding characteristics of X, Y and Z.

- A. X - support life on earth
B. Y - inhibit combustion
C. Z - form compounds that are components of acid rain
D. None of these.

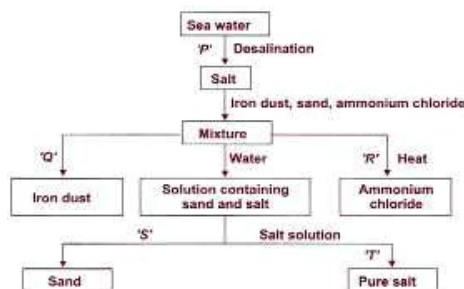


2. Observe the given flowchart carefully.

Identify the methods of separation involved at each step to get pure salt.

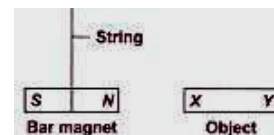
Option	Column-P	Column-Q	Column-R	Column-S	Column-T
(A)	Sublimation	Magnetic separation	Evaporation	Filtration	Evaporation
(B)	Filtration	Hand picking	Sublimation	Evaporation	Sublimation
(C)	Evaporation	Magnetic separation	Sublimation	Sedimentation & decantation	Filtration
(D)	Condensation	Magnetic separation	Sublimation	Distillation	Separating funnel

- A. A
B. B
C. C
D. D



3. Arun suspended a bar magnet on a string as shown in the diagram below. He brought 3 bar-shaped objects P, Q and R towards the bar magnet. He placed the ends of each object, X and Y, near the north pole of the bar magnet and recorded his observations in the table below.

Object	X brought near to N pole	Y brought near to N pole
P	N pole repelled	N pole attracted
Q	N pole attracted	N pole attracted
R	N pole remains stationary	N pole remains stationary



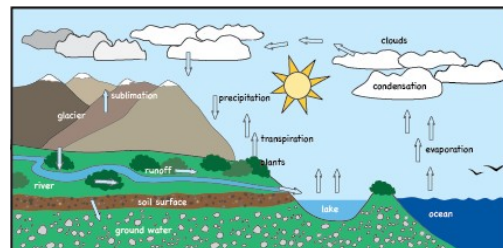
Which of the object(s) is/are a magnet?

- A. P only B. Q only C. R only D. P and R only

4. Read the given paragraph.

Heat of the sun causes

- (i) Of water from the surface of the earth, oceans, lakes, rivers and other water bodies. Water vapour is also Continuously added to the atmosphere through
- (ii) From the surface of the leaves. These vapours
- (iii) To form tiny droplets of water. These droplets floating in the air along with the dust particles form
- (iv) Warm air carrying clouds rises up, where the temperature is low. The water droplets come together to form
- (v) These are heavy and the air cannot hold them, therefore they fall down as
- (vi) However, if the temperature is very low, they freeze in the atmosphere and fall as
- (vii) Select the option that correctly fills the blanks in the above paragraph.



A. A

B. B

C. C

D. D

Option	Column-1	Column-2	Column-3	Column-4	Column-5	Column-6	Column-7
(A)	Transpiration	Condense	Clouds	Larger droplets	Rain	Snow	Evaporation
(B)	Transpiration	Evaporation	Condense	Clouds	Larger droplets	Rain	Snow
(C)	Evaporation	Transpiration	Condense	Clouds	Larger droplets	Rain	Snow
(D)	Condense	Transpiration	Evaporation	Clouds	Larger droplets	Rain	Snow

5. Read the following statements.

1. I am present in air.
2. I enter your lungs when you breathe in.
3. Your body needs me to produce energy.

Which of the following gases is being described by the above statements?

A. Carbon dioxide

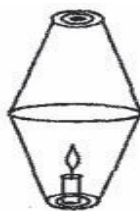
B. Nitrogen

C. Hydrogen

D. Oxygen

6. What is observed in the experiment?

- A. Flame of the candle extinguishes
- B. Flame colour changes to blue
- C. Flame colour changes to yellow
- D. The glass tumbler is blown out



7. Consider such a plant, which has dominance of hairy leaves over smooth leaves, and dominance of blue flowers to white. A pure breeding hairy-leaved, blue-flowered strain is crossed with a pure breeding smooth-leaved, white-flowered strain. The offspring is allowed to self-fertilize. It is observed that the offspring are

hairy-leaved and blue-flowered	69%
smooth-leaved and white-flowered	19%
hairy-leaved and white-flowered	6%
smooth-leaved and blue-flowered	6%

Based on these observations, what can be concluded about the two genes?

- A. The same biochemical pathway of both the genes is same.
 B. The two genes segregate independently.
 C. The two genes exhibit typical Mendelian ratios.
 D. Chromosome of the two genes are the same.
8. The four items are all filled with equal amounts of air. What is likely to happen when similar amounts of air are Pumped into each of the objects?



Ball ones



Tyre



Cylinder



Oxygen tank

- (i) The two balloons will be bigger in size as more air gets in
 (ii) The air filled ball and tyre will also be bigger in size as more air gets in
 (iii) The gas cylinder and oxygen tank will not change their size but the air in them will be compressed

- A. (ii) Only B. (i) & (iii) only C. (iii) Only D. (i) & (ii) only

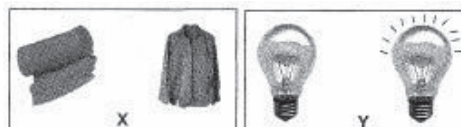
9. The needle of the compass is made of a magnet because it _____.

- (i) Attracts metal
 (ii) Gets deflected when a magnet is brought near
 (iii) Comes to rest in East-West direction
 (iv) Comes to rest in a North-South direction

- A. (i) & (ii) B. (i), (ii) & (iii) C. (ii) & (iv) D. (ii) Only

10. The given figures are examples of _____?

- A. Both Irreversible changes
 B. Both Reversible changes
 C. X-Irreversible change (Y)-Reversible change
 D. None of these



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

Statement 1: Some changes that result in the formation of new substances are called chemical changes.

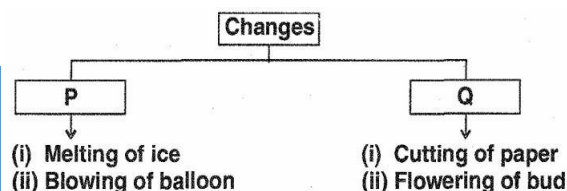
Statement 2: Chemical changes are permanent changes..

- 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. Statement 1 is false and statement 2 is true.

12. Study the flow chart carefully____?

Which of the following is correct?

Option	Column-P	Column-Q
A.	Reversible change	Reversible change
B.	Irreversible change	Reversible change
C.	Irreversible change	Irreversible change
D.	Reversible change	Irreversible change



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

Statement 1: Breaking of a glass tumbler is an irreversible physical change.

Statement 2: When a glass tumbler breaks, the chemical composition of glass does not change but the pieces cannot be joined back to get original tumbler.

- 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 false and statement 2 is true.
 D. Both statements 1 and 2 are false.

14. A mixture contains three different substances X, Y and Z. They are of same size and colour. X particles are heavy and non-magnetic; Y particles are light and non-magnetic while Z particles are magnetic. Which of the following methods can be used to separate these particles?

- A. Handpicking followed by filtration.
 B. Winnowing followed by magnetic separation.
 C. Magnetic separation followed by sieving.
 D. Sublimation followed by distillation.

15. Read the following activity and answer.

Take 5 g of solid camphor in a china dish and cover it with inverted funnel. Plug the stem of the funnel with cotton. Heat the dish.

What is this process known as?

- A. Sublimation
 B. Crystallization
 C. Evaporation
 D. Sedimentation



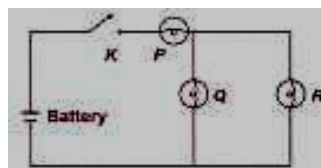
16. Mohini classified the following changes into two groups as follows:

Group A	Group B
Moving of clock hands	Boiling of milk
Beating of heart	Falling of trees
Sunrise and Sunset	Occurrence of rainbow
Low and high tides	Growth of plants

Which of the following properties is the basis of her classification?

- A. Fast and slow changes
 B. Periodic and non-periodic changes
 C. Reversible and irreversible changes
 D. Physical and chemical changes
17. Three identical bulbs are connected to a battery as shown in figure, when the circuit is Closed?

- A. R will be bright but Q and P dim
 B. P, Q and P all will be equally bright
 C. Q and P will immediately burnout
 D. P will be bright, but q and R dim.



18. Following substances are classified on the basis of different properties of matter.

- I. Frosted glass Transparent, brittle and insulator
 II. Sponge Soft, opaque and conductor
 III. Wood Hard, opaque and insulator
 IV. Copper: Metal, hard, conductor and translucent.

Mark the incorrect one.

- A. I only
 B. I, II and IV only
 C. I, II and III only
 D. All of these
19. The motion of the arms of a soldier marching along the road is_____?
- A. Circular
 B. Oscillatory
 C. Rotatory
 D. No periodic
20. What causes a moving body to resist a change in its state of motion?
- A. Its acceleration
 B. Its speed
 C. Its inertia
 D. Its weight

ANSWER KEYS

QUESTION NO	ANSWER	SOLUTION
QUESTION-1	D	All of the above options were incorrect when comparing with our atmosphere.
QUESTION-2	C	That contains and process like evaporating, sublimation, sedimentation & dissemination and then evaporating.
QUESTION-3	A	N pole will not be repelled when it touches north-north it will be attached when north-south attached
QUESTION-4	C	It is the process of evaporating, transpiration, condense, clouds, large drop lets, rain & snow.
QUESTION-5	D	Oxygen will be present in air it will help us to breathe in and it will give us energy levels.
QUESTION-6	A	Candle extinguishing in the glass with flames.
QUESTION-7	D	
QUESTION-8	B	The balloons, football and tyre (made up of flexible material) swell up and become bigger in size as more air is filled because air occupies space inside them. While size of gas cylinder and oxygen tank (made up of inflexible material) remains the same but the gas inside them gets compressed.
QUESTION-9	C	N pole will not be repelled when it touches north-north it will be attached when north-south attached
QUESTION-10	D	None of the above answer has clear
QUESTION-11	C	A chemical change occurs when there is a chemical reaction between the substances as a result of which a new substance with different properties is formed. Since new substances with different molecules are formed during chemical reactions, it is not easy to get back the original substances. Most chemical changes are, therefore, permanent and irreversible.
QUESTION-12	B	The water formed after melting of ice can be freezed again to form ice. If the air inside the blown balloon is allowed to escape, then the balloon regains its original shape. So both these changes are reversible changes. While changes like cutting of paper and flowering of bud cannot be reversed and hence are irreversible.
QUESTION-13	A	Both were correct Breaking of a glass tumbler is an irreversible physical change. When a glass tumbler breaks, the chemical composition of glass does not change but the pieces
QUESTION-14	B	Heavy X particles and light Y particles are first separated by winnowing and then magnetic Z particles are separated from the remaining mixture by magnetic separation.
QUESTION-15	A	When a chemical is burning in a funnel is known as Sublimation.
QUESTION-16	B	Periodic and non-periodic changes according to the time
QUESTION-17	D	P will be brighter because it will takes the complete power when comparing with Q& R.
QUESTION-18	B	Different parts of properties will make a substance.
QUESTION-19	B	Since the arms of a soldier during marching move back and forth about his body, such a motion is referred as oscillatory motion.
QUESTION-20	C	The property of a body by virtue of which it resists any change in its state of rest or of uniform motion in a straight line on its own is called its inertia.

ANSWER SHEET
National Astronomy & Science Olympiad

Filling of all columns completely & accurately is important.

Candidate's Name

[illegible]

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7. Do not use marker or white fluid to hide the mark.

WRONG METHODS

CORRECT METHOD



Grade

Gender

2nd 3rd 4th 5th 6th 7th 8th 9th 10th

Male ☐

Female ☐

RollNo.

[illegible]

Father's Name

[illegible]

School Name

[illegible]

E-mail Id

[illegible]

City

[illegible]

School Code

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MARK YOUR ANSWERS HERE

A B C D

A B C D

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Candidate's Signature

Invigilator's Signature

1. The food items shown in the figure are sources of mainly_____?



- A. Fats.
C. Proteins.
B. Carbohydrates.
D. Vitamins.

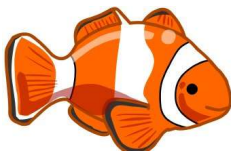
2. Match the two columns and select the correct option.

option s	Column-1	Column-2
A	Waste from farms, yards and food courts	Domestic waste
B	Pesticides pharmaceuticals and heavy metal sludge	Industrial waste
C	Peels of fruits and vegetables, tea leaves	Organic waste
D	Mineral waste from Mining and rubber waste	Kitchen waste

3. Sheela is eating a healthy diet, but she is missing a food with any fibre in it. Choose one of the following food items that she needs?



A .



B.



C.



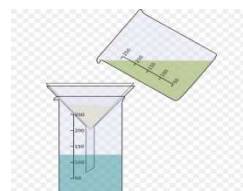
D.

4. Fibres are separated from the seeds of cotton boils by the process known as_____?

- A. Winnowing
C. Ginning
B. Threading
D. Spinning.

5. The given figures show which of the following processes?

- A. Sedimentation
C. Filtration
B. Decantation
D. Both (A) & (C)



6. Renu wants to recover large quantity of salt mixed with sand. She added water and stirred well but some salt remained undissolved. The undissolved salt remained mixed with the sand and could not be recovered. Her problem can be solved by___?

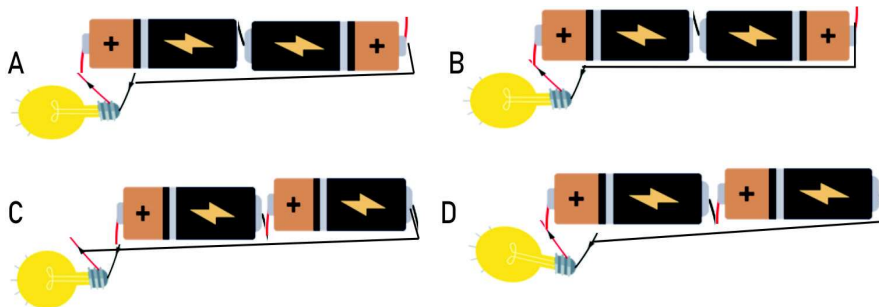
- A. Adding a large quantity of water. B. Heating the solution.
C. Filtering the solution. D. Both (A) and (B).

7. Which of the following statements is/are correct ?

- (i) Electricity like heat and light is a form of energy.
(ii) Electric current can flow through the brick walls of a house.
(iii) The metal electric wires can be replaced with plastic ones to allow flow of current
(iv) Electrical energy can be converted to chemical energy

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

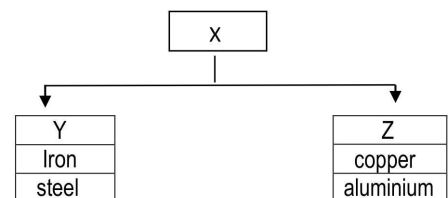
8. Which of the following is the correct method of setting a circuit?



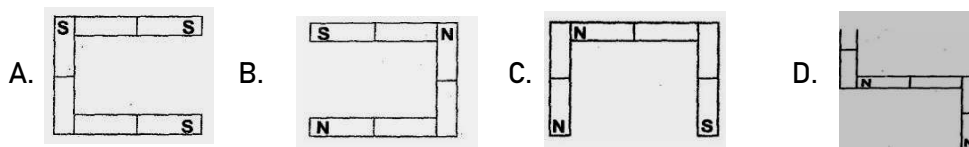
9. Look at the classification table below.

Which of the following correctly describes X, Y and Z?

Option A	X	Metals	Option B	X	Metals
	Y	Can sink		Y	Can be magnetised
	Z	Can float		Z	Can be magnetised
Option C			Option D		
	X	Metals		X	Metals
	Y	Cannot be attached by magnet		Y	Can allow electricity to pass through
	Z	Can be attached by magnet		Z	Cannot allow electricity to pass through



10. Study the arrangement of three bar magnets as shown below. Which arrangement is the possible one?



11. Read the following statements.

- (i) Air dissolved in water cannot be removed from it.
- (ii) Density of air decreases with increasing altitude.
- (iii) Air is an element that surrounds the earth and makes earth hospitable for living organisms
- (iv) Air helps in pollination of several flowers and in the dispersal of seeds.

Which of the above statements are correct?

- A. (i) and (ii) B. (ii) and (iv) C. (i) and (iii) D. (iii) and (iv)
12. Air pollution on the road can be reduced by.....?

- A. Reducing the number of vehicles on the road
- B. Widening the roads
- C. Having more traffic lights
- D. Having less traffic lights

13. Fill in the blanks with most appropriate options.

Although a number of objects, such as kites, birds, aeroplanes move in space, but their shadow is not seen on the earth. This is due to the reason that the ___(i)___ the region of complete ___(ii)___ is not able to reach the earth The region of partial ___(iii)___, that is the ___(iv)___ reaching the earth is too large and too faint to be visible to us.

	(i)	(ii)	(iii)	(iv)
(A)	Penumbra	Darkness	Brightness	Umbra
(B)	Penumbra	Brightness	Darkness	Umbra
(C)	Umbra	Darkness	Brightness	Penumbra
(D)	Umbra	Brightness	Darkness	Penumbra

- A. B. C. D.

14. The air that we breathe in is a.....of gases like carbon dioxide, oxygen, nitrogen, argon, water vapours and other gases.

- A. Mixture B. Compound C. Element D. None of these

15. A pure substance is one which_____?

- A. Has a uniform texture throughout (homogeneous)
- B. Has a fixed boiling point or melting point
- C. Is made up of only one type of particles
- D. All of the above

16. If a seed is inserted upside down into soil, in which direction will its stem and roots grow?

Options	Stem	Roots
A	Away from the Earth	Towards the Earth
B	Towards the Earth	Away from the Earth
C	Towards the Earth	Towards the Earth
D	Away from the Earth	Away from the Earth

- A. B. C. D.

17. The given figure shows an example of _____?

- A. Phototropism
- B. Geotropism
- C. Autotrophism
- D. Photosynthesis.



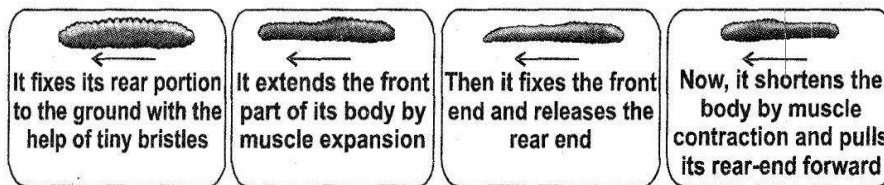
18. Which of the following statements hold true for the root system shown in the given figure?

- (i) It is a fibrous root system.
- (ii) The branches that arise from the main root are called fibrous roots.
- (iii) It is a tap root system.
- (iv) Examples of this type of root system are pea, tulsi, radish, carrot and turnip.



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

19. The movement represented by the given figure is the characteristic of_____?



- A. Snake B. Cockroach C. Earthworm D. Snail

20. Part X in the given figure of cucumber plant represents_____?

- A. Prop root
- B. Tendril
- C. Climber
- D. Petiole



ANSWER KEYS

QUESTION NO	ANSWER	SOLUTION
QUESTION-1	B	Carbohydrates are the class of nutrients that we require in our daily diet. They are good sources of energy. Carbohydrates can be sugarcane, maize, potato, etc.
QUESTION-2	C	Organic waste is the waste that is of biological origin such as peels of fruits and vegetables, tea leaves, etc. They can be used in the form of organic fertilizers. Waste from farms and yards constitutes farm waste and that from mining constitutes industrial wastes. Pesticides and heavy metal sludge constitute non biodegradable wastes.
QUESTION-3	D	Fruits are fibre rich food which provide bulk to the diet and promote normal bowel function.
QUESTION-4	C	Cotton bolls burst open after maturing. The seeds are covered with cotton fibres. Fibres are then separated from the seeds by combing. This process is called ginning.
QUESTION-5	A	The process of settling or being deposited as sediment.
QUESTION-6	D	By heating the saturated solution and by adding a large quantity of water, salt gets completely dissolved. Sand is then separated from the mixture by sedimentation and decantation. After that by evaporation, salt can be recovered from the salt solution.
QUESTION-7	C	Electricity like heat and light is a form of energy and also because the electrical energy can be converted to chemical energy
QUESTION-8	D	When cells are kept in series in a circuit, they should be placed in such a way that positive end of one touches the negative end of the other cell. Fig. (D) is the correct method of setting a circuit? In fig. (A) The positive and negative ends of the battery both are connected to the same end to the bulb, which is incorrect.
QUESTION-9	B	Iron and steel are magnetic materials, so they can be magnetised while aluminium and copper are nonmagnetic materials, so they cannot be magnetised.
QUESTION-10	C S N	Arrangement C is possible as unlike poles attract each other and hence can be held as above.
QUESTION-11	B	Air dissolved in water can be removed from it by boiling. Air is a mixture of gases that surrounds the Earth and makes it hospitable for living organisms
QUESTION-12	A	Cars, scooters, buses, etc. release a lot of smoke from their exhaust pipes, contributing to the increasing air pollution. Reducing number of vehicles on road, planting trees (as they take in CO ₂) on roadsides and encouraging the use of CNG in vehicles will help in curbing the air pollution.
QUESTION-13	C	The blanks answer is Umber, darkness, brightness, penumbra
QUESTION-14	A	Mixtures contain more than one type of substances. Air is a mixture of several gases, such as oxygen, carbon dioxide, nitrogen, water vapour, etc.

QUESTION-15	D	All the constituents of a pure substance have similar properties <i>e.g.</i> , copper, iron, common salt, etc.
QUESTION-16	A	Root is usually an underground part of the plant and it grows towards the earth. Stem is the part of shoot system; it keeps the plant upright and grows away from earth.
QUESTION-17	A	The figure depicts phototropism. The tip of the plant bends towards the direction from where the light is coming in. This response of a plant to light is known as phototropism.
QUESTION-18	C	The given figure is showing tap root system. Tap root is the main root and many lateral roots arise from it. Pea, tulsi, radish, carrot and turnip are examples of plants that have tap root system.
QUESTION-19	C	The earth worm has the rare portion and it will move the head towards to move complete body like in waves manner
QUESTION-20	B	A slender threadlike appendage of a climbing plant, often growing in a spiral form, that stretches out and twines round any suitable support.

ANSWER SHEET
National Astronomy & Science Olympiad

Filling of all columns completely & accurately is important.

Candidate's Name

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6. Do not use any stray marks on the sheet.
7. Do not use marker or white fluid to hide the mark.

WRONG METHODS



CORRECT METHOD



Grade

2nd 3rd 4th 5th 6th 7th 8th 9th 10th

Gender

Male ☐

Female ☐

RollNo.

[illegible]

Father's Name

[illegible]

School Name

[illegible]

E-mail Id

[illegible]

City

[illegible]

School Code

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5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9
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MARK YOUR ANSWERS HERE

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3	☐	☐	☐	☐	8	☐	☐	☐	☐	13	☐	☐	☐	☐	18	☐	☐	☐	☐
4	☐	☐	☐	☐	9	☐	☐	☐	☐	14	☐	☐	☐	☐	19	☐	☐	☐	☐
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Invigilator's Signature

1. The given figure shows_____?

- A. Rhythmic movement of the abdomen
- B. Mechanism of plant respiration
- C. Response to stimulus
- D. All of these



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

Option	Column-1	Option	Column-2
(a)	Hinge joint	(i)	Neck joint
(b)	Gliding joint	(ii)	Hip joint
(c)	Pivot joint	(iii)	Knee joint
(d)	Ball and socket joint	(iv)	Wrist joint

- A. (a) - (iii), (b) - (iv), (c) - (i), (d) - (ii)
- C. (a) - (i), (b) - (ii), (c) - (iv), (d) - (iii)

- B. (a) - (iv), (b) - (i), (c) - (iii), (d) - (ii)
- D. (a) - (ii), (b) - (iii), (c) - (i), (d) - (iv)

3. Read the features of a plant as given below.

- (i) Roots are much reduced in size
- (ii) Stems are generally long and narrow
- (iii) Stems possess air spaces
- (iv) Leaves are large and flat
- (v) They have waxy upper surfaces.

To which of these habitats does this plant belong?

- A. Desert
- B. Tropical rainforest
- C. Water
- D. Polar region

4. Study the set-up below_____?



Which of the following shows what the shadow will look like?



5. The essential condition for the formation of shadow is_____?
- A. There should be an opaque material
 - B. There should be a source of light and screen
 - C. The object must be placed in the path of light
 - D. All of these
6. The terminals of a battery are joined by a length of resistance wire. Which change current in the battery?
- A. Connecting an identical wire in increases the 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 the same length.
7. A magnet can be made weaker by
- A. Keeping it wrapped in cotton wool
 - B. Using it as a hammer
 - C. Keeping it in a cool room
 - D. Playing with it
8. Which of the following actions will help in reducing pollution?
- (i) Using sewers to remove human waste
 - (ii) Using unleaded petrol in cars
 - (iii) Spraying pesticides on plants to kill pests
 - (iv) Restricting smoking in public to designated areas
- A. (i) & (ii) B. (iii) & (iv) C. (i), (ii) & (iii) D. (i), (ii) & (iv)
9. Read the following characteristics of a fibre and identify it.
- It can be worn close to skin because static electricity does not build up readily.
 - Each fibre is made up of 2030 layers of coiled cellulose springs.
 - It has moisture absorbing quality.
 - It has natural twist that makes it suitable for spinning.
- A. Jute B. Cotton C. Wool D. Nylon
10. Consider the motion of the tip of the minute hand of a clock. In one hour
- A. The displacement is zero
 - B. The distance covered is zero
 - C. Both (A) and (B)
 - D. None of these.

11. Mosquitoes live on blood that they suck from humans and other animals. A mosquito has a long, sharp pipe instead of teeth, which is used to pierce the skin and suck the blood. To which of the following categories does the mosquito belong?

- A. Omnivore
B. Herbivore
C. External parasite
D. Internal parasite

12. Jute is a long, soft, plant fibre that can be spun into coarse, strong threads. Jute is a rainy season crop, which grows best in warm and humid climate. in which part of India jute is grown .

- A. Assam. B. West Bengal C. Bihar D. All of these

13. Which of the following statements is incorrect?

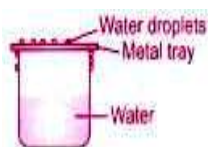
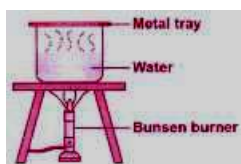
- A. Fibres obtained from plants and animals are termed natural fibres.
B. Coir is a coarse fibre extracted from the cotton plant.
C. Plant fibres when burnt give smell of burning paper.
D. Clothes made from cotton fibres can easily absorb sweat.

14. In which following cases the heat energy is given of the out?

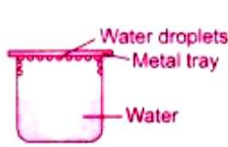
- (i) When water boils
(ii) When ice melts
(iii) When water freezes to ice
(iv) When water vapour condenses to water

- A. In (i), (ii) & (iii) B. In (iii) only C. In (iv) only D. In both (iii) & (iv)

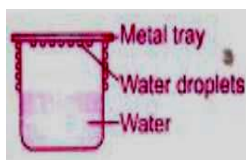
15. A metal tray was used to cover a beaker of boiled water as shown in the diagram. The beaker and metal tray were then removed from the tripod stand and left on the table. After two minutes, which of the following can be observed?



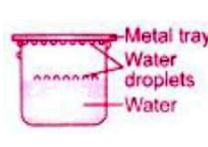
A.



B.



C.



D.

16. The structures marked X shown in the figure are present in more number on

- A. Upper surface of leaf
- B. Lower surface of leaf
- C. Both (A) & (B)
- D. The midrib



17. Which among these children made an incorrect statement?

A.  A banana plant has a green soft stem. It is a herb

B.  Strawberry is a climber plant with the weak stems tht cannot stand upright

C.  Maize, wheate and barley are with fibrous roots

D.  

18. The table below gives some characteristics of herbs, shrubs and trees.

Option	Features	Herbs	Shrubs	Trees
(i)	Size	Very small, usually less than 1m high	Medium sized, usually 1-3 high	Tall, generally more than 3m high
(ii)	Nature of stem	Green and tender with few branches	Hard ,brown, thick stem with branches on the Upper part of stem	Hard stem but not very thick ,branches arise near the base of the stem
(iii)	Examples	Grass ,tomato, wheat, mint	Hibiscus, lemon, rose, pomegranate	Gulmohar, neem, peepal mango

Which of the above given points is/are incorrect?

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

19. The given figure helps in the protection of _____?

- A. Lungs
- B. Wind pipe
- C. Heart
- D. All of the above



20. Which of the following statements is/are correct?

- (i) The soft substance present inside the bones is called bone marrow.
- (ii) Floating ribs are the last three pairs of the ribs that are not joined to the breastbone.
- (iii) The only movable bone in skull is the upper jaw bone.
- (iv) The longest bone in the body is humerus.

ANSWER KEYS

A. (iii) only

B. (i) only

C. (i) and (ii)

D. (iii) and (iv)

QUESTION NO	ANSWER	SOLUTION
QUESTION-1	C	He is telling that how the plant has been grown.
QUESTION-2	A	The joints has been arranged according to column-1(knew joint), (wrist joint)(neck joint)(hip joint)
QUESTION-3	C	Aquatic plants have to adapt themselves to several factors for water habitats. Their roots are reduced. Their stem is long and narrow to withstand water currents and also have air spaces to enable plant to float. The leaves are large and flat and have waxy upper surfaces to make them waterproof.
QUESTION-4	C	That shadow is of tv because if the torch light focused on tv display it shadow back light option C in rectangular shape
QUESTION-5	D	All of the given conditions are essential for the formation of shadows.
QUESTION-6	C	To increase the current in the battery, resistance should be decreased. Resistance of a conducting wire can be decreased by decreasing its length.
QUESTION-7	B	If a magnet is used as hammer the alignment of the elementary magnets inside it gets disturbed. Hence the magnet loses its power of attraction and gets weakened.
QUESTION-8	D	Reduces pollution from making Using sewers to remove human waste, Restricting smoking in public to designated areas, using unleaded petrol in cars.
QUESTION-9	B	These all are of cotton. It can be worn close to skin because static electricity does not build up readily. Each fibre is made up of 2030 layers of coiled cellulose springs. It has moisture absorbing quality. It has natural twist that makes it suitable for spinning.
QUESTION-10	A	The motion has the displacement of zero
QUESTION-11	C	Parasites are small animals that depend and survive on other living organisms. There are two types of parasites: external and internal. External parasites are those parasites that live on the body of an organism. Internal parasites are those that live inside the body of an organism. Mosquito is an external parasite as it feeds on the blood of humans and other animals.
QUESTION-12	D	The jute fibre is obtained from the stem of the jute plant. In India, jute is mainly grown in West Bengal, Bihar and Assam. It grows best in warm and humid climate with a moderate rainfall, preferably in alluvial soil.
QUESTION-13	B	Coir is the fibre obtained from the outer covering of the coconut plant. Coconuts are soaked in water and then their husk is separated. The husk is then beaten to get the fibre, called coir. Coir is spun, dried and woven and is used to make a number of household products such as ropes, mats, floor coverings, etc.

QUESTION-14	D	The processes in which heat is given out are : freezing, condensation.
QUESTION-15	B	When the water vapours strike the cooler walls of container, they condense and form water droplets on the inner surfaces of metal tray and at the top of the beaker. This process is called condensation.
QUESTION-16	B	The figure shows that inner layers of leaves.
QUESTION-17	B	Strawberry is not a climber, it is a creeper which has a weak stem and cannot stand upright. It spreads out on ground.
QUESTION-18	B	The stem of herbs is green and tender and have few branches. Shrubs have hard stem which is not very thick and the branches arise near the base of the stem. Trees, on the other hand, have hard, brown and thick stem and the branches arise on the upper part of the stem.
QUESTION-19	D	Human ribs will covers the lungs , heart ,wind pipes ,
QUESTION-20	B	Bone marrow is a soft substance present inside the bones and blood cells are made here. Floating ribs are the last two pairs of ribs that are not joined to the breast bone. The only movable bone in skull is the lower jaw bone. Femur or the thigh bone is the longest bone in the body.

ANSWER SHEET
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WRONG METHODS

CORRECT METHOD



Grade

Gender

2nd 3rd 4th 5th 6th 7th 8th 9th 10th

Male ☐

Female ☐

RollNo.

[illegible]

Father's Name

[illegible]

School Name

[illegible]

E-mail Id

[illegible]

City

[illegible]**School Code**

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MARK YOUR ANSWERS HERE

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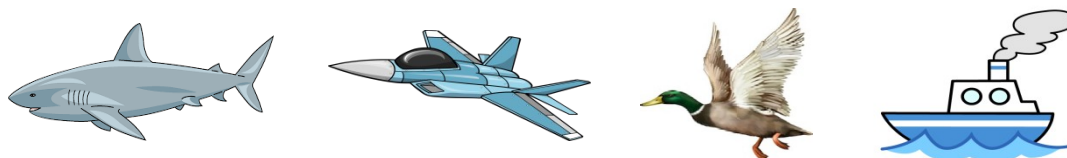
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Candidate's Signature

Invigilator's Signature

- 1 What is one thing common in all these given figures?



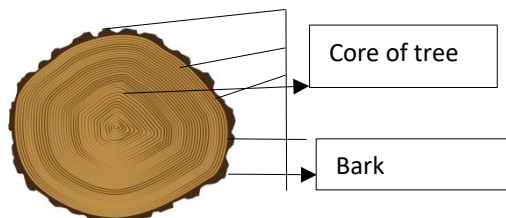
- A. They all are flying objects
B. They all utilize fuels to move
C. They all have streamlined body
D. Their movement is commonly called slithering
2. The given figure shows an experiment. What do you think you would see after some hours?

- A. The flower will remain white.
B. It will turn blue.
C. One half will turn pink, the other half blue.
D. It will turn pink.



3. The given figure represents a section of a tree trunk. Find out how old this tree was?

- A. Three years old
B. Five years old
C. Six years old.
D. Seven years old



4. Plants do not move around in search of food and shelter. However, you can observe movement in a plant when you touch the leaves of the Mimosa (touch-me-not) plant or in sunflower as it turns to face the sun. Which conclusion can be best drawn from the above paragraph?
- A. Plants show locomotion
B. Plants respond to the stimulus
C. Plants can move their body parts
D. Both (B) and (C)

5. What adaptations does the given organism show?

- A. Strong hind leg muscles
- B. Bones are hollow
- C. Feet are webbed
- D. Both (B) & (C)



6. Cactus plants grow in the desert where there is scarcity of water. To prevent loss of water from the surfaces, leaves are modified to become spines. Then, which part of the cactus plant performs photosynthesis?

- A. Spines
- B. Stem
- C. Flowers
- D. Roots

7. Camel shows many adaptations to survive in the desert. Which of the following statements (P, Q, R & S) does not hold true regarding this?

- P. It has a hump where fat is stored.
- Q. It can stay without water for a long time.
- R. It excretes large amount of water in the form of urine.
- S. It sweats a lot.

- A. P only
- B. Q only
- C. Q and S
- D. R and S

8. What characteristics does the given plant adapt to survive in desert?

- A. The leaves are modified into spines
- B. Stem is covered with thick waxy layer
- C. Roots penetrate deep into the ground
- D. All of the above

9. Which of the following statements is false?

- A. Shadows cannot be formed when an object allows some light to pass through it.
- B. Shadows are always formed on the opposite side of the light source.
- C. A shadow has a similar shape to the object that forms the shadow.
- D. An object can form as many shadows as there are light sources around it.

10. Which of the following is correct for air is not visible?

- A. It is nearly a perfect transparent substance.
- B. It neither absorbs nor reflects light.
- C. It transmits whole of light.
- D. All of these.

11. Mark the incorrect statement.

- A. Melting of wax is a physical change while burning of wax in a candle is a chemical change.
- B. Metals expand on heating while contract on cooling. Both are physical changes.
- C. Composition of matter changes during a chemical change while it remains same during a physical change.
- D. High and low tides in sea are the examples of non-periodic changes while growth of a tree is a periodic change.

12. When ice melts it forms water. When water boils it forms steam. Ice, water and steam have very different properties, still it is considered as a physical change. The possible reason for this is

- A. A physical change involves the formation of substances with different properties
- B. There is no difference in the chemical composition of ice, water and steam, only physical state is Different.
- C. There is no difference in the taste of steam, ice and water hence it is a physical change
- D. There is no difference in colour of steam, ice and water hence it is a physical change.

13. What is common among the following phenomena?

- 1. Blinking of traffic lights.
- 2. Rotation of blades of a fan.
- 3. Swinging of pendulum of a clock.

- A. All are chemical changes.
- B. All are periodic changes.
- C. All are undesirable changes.
- D. All are irreversible change

14. Which of the following items can be recycled?



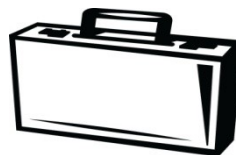
A.



B.



C.



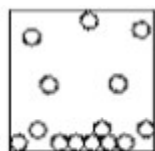
D.

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

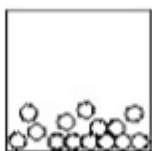
15. In order to determine the degree of hydration of a salt, a student was asked to conduct an experiment by finding the mass of a clean dried crucible and lid. Also the mass of the crucible and lid containing a sample of the salt. In a Bunsen burner flame, the crucible, lid and salt are heated. Later, these are cooled, and weighed. What will be the effect on the degree of hydration compared with the actual value if the crucible, lid and salt are heated only?

- A. Too high.
- B. Too low.
- C. Unaffected.
- D. Impossible to predict.

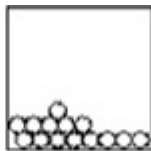
16. The circles in the given diagram represent molecules. In the process of melting, which of the following diagram provides the best molecular level representation of a pure solid?



A.



B.



C.

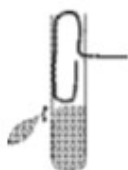


D.

17. Identify the correct way to heat a liquid in a test tube?



A.



B.



C.

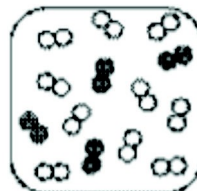


D.

18. If nitrogen atoms are represented as filled circles and oxygen atoms as open circles, how much NO_2 can be prepared from the mixture shown?

A. 10 molecules
C. 16 molecules

B. 4 molecules
D. 8 molecules



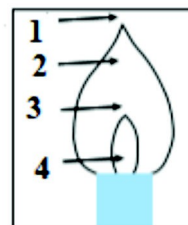
19. Which letter in the diagram depicts the hottest portion of a Bunsen burner flame?

A. 1

B. 2

C. 3

D. 4



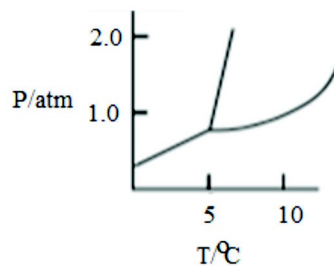
20. According to the phase diagram shown, at 1.0 atm and 0.0 °C, in which state the substance exist?

A. Solid only

B. Liquid only

C. Gas only

D. Solid and liquid only



ANSWER KEYS

QUESTION NO	ANSWER	
QUESTION-1	C	A streamlined body is a shape that lowers the friction drag between a fluid, like air and water, and an object moving through that fluid. ... It occurs when the fluid closest to the object sticks to its surface, exerting a force that opposes the object's motion.
QUESTION-2	C	When we place a twig containing a flower in two glasses of different coloured water (red and blue) such that one half of the split stem is dipped in red coloured water glass and other half in the blue coloured water glass, then half part of the flower dipped in red colour will become red and the other half dipped in blue colour will become blue. The reason for this is that the red and blue inks got dissolved in the water, moved up the stem and reached the leaves and flower
QUESTION-3	C	Core of a tree explains that how many years old it is
QUESTION-4	D	Touch is a stimulus and <i>Mimosa</i> plant responds to it by folding its leaves. Similarly, sunflower shows movement as it turns to face the sun. Hence, we can conclude that plants respond to the stimulus and can move their parts accordingly.
QUESTION-5	D	The duck has an adoption of bones have hollow and feet are webbed
QUESTION-6	B	The stem of cactus is fleshy and can store water for long periods. It performs all the functions performed by leaves including preparation of food.
QUESTION-7	D	Camel has several adaptations to help it survive in a desert. It excretes very little water in the form of urine. Besides, its dung is dry and it does not sweat.
QUESTION-8	D	The leaves are modified into spines Stem is covered with thick waxy layer Roots penetrate deep into the ground
QUESTION-9	A	Shadows can be formed if a translucent object is placed in the path of light source and screen, although the image formed will be faint.
QUESTION-10	B	An object is visible, when it either absorbs light or reflects light. Air is not visible because it neither absorbs nor reflects light.
QUESTION-11	D	Changes which occur again and again after fixed intervals of time are known as periodic changes. For example, change of day and night, occurrence of full moon, heart beat, oscillation of pendulum of clock, high and low tides in sea etc. There are some changes which do not repeat themselves at regular intervals are called non periodic changes. You cannot predict when they will reoccur. For example, occurrence of earthquake, train accidents, sneezing, rusting of iron, growing of a tree, etc.
QUESTION-12	B	Chemical composition of ice, water and steam is same <i>i.e.</i> , H ₂ O. The physical state of ice is solid, water is liquid and that of steam is gas.
QUESTION-13	B	All these changes occur again and again after fixed intervals of time, hence are periodic changes
QUESTION-14	D	They can be recycled because they can be recollected items
QUESTION-15	B	
QUESTION-16	B	
QUESTION-17	D	
QUESTION-18	D	
QUESTION-19	A	
QUESTION-20	A	



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ANSWER SHEET
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Candidate's Name

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WRONG METHODS



CORRECT METHOD



Grade

2nd 3rd 4th 5th 6th 7th 8th 9th 10th

Gender

Male ☐

Female ☐

RollNo.

[illegible]

Father's Name

[illegible]

School Name

[illegible]

E-mail Id

[illegible]

City

[illegible]

School Code

1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9
0	0	0	0	0	0	0	0

MARK YOUR ANSWERS HERE

A B C D				A B C D				A B C D				A B C D							
1	☐	☐	☐	☐	6	☐	☐	☐	☐	11	☐	☐	☐	☐	16	☐	☐	☐	☐
2	☐	☐	☐	☐	7	☐	☐	☐	☐	12	☐	☐	☐	☐	17	☐	☐	☐	☐
3	☐	☐	☐	☐	8	☐	☐	☐	☐	13	☐	☐	☐	☐	18	☐	☐	☐	☐
4	☐	☐	☐	☐	9	☐	☐	☐	☐	14	☐	☐	☐	☐	19	☐	☐	☐	☐
5	☐	☐	☐	☐	10	☐	☐	☐	☐	15	☐	☐	☐	☐	20	☐	☐	☐	☐

Mobile No.[illegible]

Candidate's Signature

Invigilator's Signature