



UNICUS  
OLYMPIADS

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## Sample Paper



**Class 5**

## Unicus Science Olympiad (USO)

Time: 60 minutes

Pattern and Marking Scheme			
Section	Total Questions	Marks per Question	Total Marks
Classic Section	30	1	30
Scholar Section	10	2	20
Grand Total	40		50

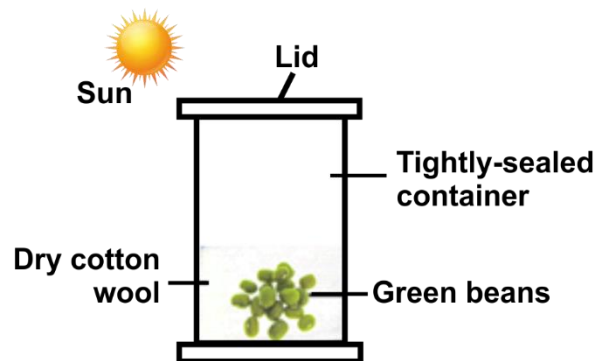
## Classic Section (Each Question is 1 Mark)

1. Four children were asked to think of an animal whose colour for its outer covering is the same among its species. Study the thought bubbles of each of the children below. Who has correctly identified the animal based on the criteria given?



- a. Jack  
b. Peter and Sam  
c. Fatima  
d. Peter, Sam and Jack

2. Arya placed some green beans in a tightly-sealed container as shown below. What will happen to the beans in a week's time?



- a. They will remain as they are because there is no water and insufficient air.  
b. They will move towards the sunlight as they need to make food.  
c. They will sprout and become seedlings.  
d. They will reproduce more green beans.

3. One evening Peter walked in the fields and his shoes brushed against the leaves of a plant. Immediately, its leaves folded. What had happened here?

- a. The plant got damaged.  
b. The plant was drying.  
c. There was less sunlight so the leaves of the plant folded.  
d. The leaves of the plant were responding to touch.

4. If Earth's mass is doubled without changing its size, what would happen to your weight?

- a. Your weight will increase because gravitational force increases.  
b. Your weight will decrease because gravitational force increases.  
c. Your weight will increase because gravitational force decreases.  
d. Your weight will not change because gravitational force does not change.

5. Which one of the following features is not true about the plants growing on mountains?
- These plants are usually flowerless.
  - Plants have a slopping shape to make the snowfall off easily.
  - These plants are short and bushy.
  - These plants have cones with seeds inside them.
- 

6. Three classmates were having a class discussion about three states of matter. This is what they said:

Student 1: All gases including perfumes have the property of spreading from one place to another.

Student 2: The incense stick smell does not spread from one place to another.

Student 3: Gases have a fixed shape and volume.

Which of the students spoke correctly?

- |                   |                       |
|-------------------|-----------------------|
| a. Student 3 only | b. Student 1 only     |
| c. Student 2 only | d. All three students |
- 

7. Look at the pictures of the food items shown below and identify the nutrient rich in these food items:



**Bread**



**Potato**



**Sugar**

- |             |                  |
|-------------|------------------|
| a. Proteins | b. Carbohydrates |
| c. Fats     | d. Calcium       |
- 

8. Read the clues given below and identify the fibre:

Clue 1 - I am a natural fibre obtained from plants.

Clue 2 - I am obtained from the stem of the plant.

Clue 3 - I am used for making baskets, ropes, handbags, gunny bags and mats.

- |           |         |
|-----------|---------|
| a. Cotton | b. Silk |
| c. Jute   | d. Wool |
- 

9. Which of the following pair is classified as water transport?

T: Yacht

U: Submarine

V: Metro rail

W: Fighter jet plane

- |            |            |
|------------|------------|
| a. T and U | b. U and V |
| c. T and W | d. V and W |
- 

10. Which of the following food items are rich in proteins?

- Eggs
- Bread
- Lentils
- Fish

- 5. Orange
- 6. Spinach

- a. 4, 5 and 6
- b. 1, 2 and 3
- c. 2, 4 and 6
- d. 1, 3 and 4

11. The following table shows the function of four human body systems:

	Body system	Function
(1)	Skeletal	Gives shape to the body
(2)	Circulatory	Protects vital organs
(3)	Digestive	Breaks down our food
(4)	Respiratory	Gets rid of carbon dioxide

Which body system has its function incorrectly stated?

- a. Only 1
- b. Only 2
- c. Both 2 and 3
- d. Both 1 and 4

12. Which of the following pair is classified as a written form of communication?

- D: Magazines
- E: Radio
- F: Email
- G: Television

- a. D and E
- b. E and F
- c. D and F
- d. F and G

13. State whether the following statements are true or false:

- 1. Wood is a good insulator and helps to keep the house cool in the summer and warm in the winter.
- 2. Stilt houses are mostly found in regions with heavy rain and frequent floods.

- a. 1 – True, 2 – False
- b. 1 – True, 2 – True
- c. 1 – False 2 – False
- d. 1 – False, 2 – True

14. Waterlogged places are called swamps (marshes).

Why do plants that grow in marshy regions have breathing roots?

- a. The roots are very long.
- b. The roots are not well developed.
- c. Air cannot reach the roots of these plants so they grow out of the soil.
- d. Roots are spread deep under the soil.

15. Mary has bought an expensive silk saree. She does not know how it needs to be stored.

Advise Mary on how should she store her silk saree.

- a. Store in a box with mulberry leaves.
- b. Store in a box with moth balls.
- c. Store in a box with eucalyptus oil.
- d. Store in a box with tea leaves.

16. The picture given below shows a man wearing a linen shirt.  
Which of the following provides linen fibre to make this shirt?



a.



Flax plant

b.



Cotton plant

c.



Sheep

d.



Silkworm

- 
17. The picture shows some organisms living together.  
Which two organisms in this picture are producers?



- a. Giraffe and tree  
c. Tree and grass

- b. Bird and grass  
d. Zebra and giraffe

- 
18. What characteristic feature of the animal is shown in the picture that protects him from its predator?



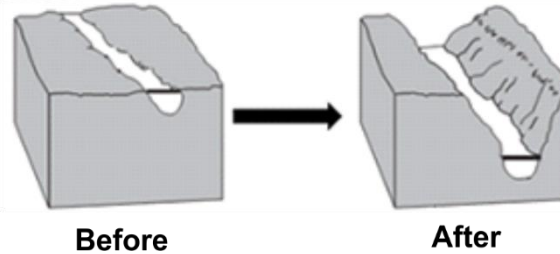


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- a. They can change their shape and size.
- b. They have feathers on their body.
- c. They can smell its predator from miles away.
- d. Their colour and body pattern help it to merge with the surroundings and become difficult to be seen.

19. The diagram below shows the land surface changes caused by a river flowing through an area for many years.

Which process caused the changes shown?



- a. Condensation
- b. Evaporation
- c. Erosion
- d. Rotation

20. State which of the following sentences are FALSE:

- 1. Oiled paper and ground glass are translucent objects.
- 2. Thick cloth and cardboard are transparent objects.
- 3. Air, water and glass are opaque objects.

- a. 1 and 2
- b. 2 and 3
- c. 1 and 3
- d. All 1, 2 and 3

21. If the temperature of the earth keeps increasing due to the burning of fossil fuels and all other reasons that cause Global Warming, then what can happen to the earth?

Statement A: Weather changes.

Statement B: Melting of all the glaciers into the water. This will cause an increase in the sea level and a widespread decrease in the snow and ice.

Statement C: Deforestation

- a. A and C
- b. A, B and C
- c. A and B
- d. B and C

22. Choose the correct option and complete the following sentence:

A girl signals her friend by shining a flashlight on a mirror. Her friend can see the signal because \_\_\_\_\_.

- a. heat energy can be transferred from one object to another
- b. mechanical energy can be transferred from one object to another
- c. sound energy can be reflected from one object to another
- d. light energy can be reflected from one object to another

23. Which of the following planets are very cold and are called ice giants?

- a. Uranus and Saturn
- b. Neptune and Mercury
- c. Uranus and Neptune
- d. Earth and Neptune

24. By which of the following ways can we reuse water?

- a. Use water that is drained out from the washing machine to wash the toilet.
- b. Use water that is drained out from the washing machine to water plants.
- c. Use water collected in utensils from rain to wash vegetables.
- d. Use water collected from tap leaks to cook and drink.

25. Henry wants to separate a mixture of salt-water-sand. Which of these separation methods should be used to separate all three components?





- a. Filtration-Distillation
- b. Filtration-Evaporation
- c. Flotation-Sedimentation
- d. Evaporation-Decantation

26. Read the statements carefully and choose the correct option:

- A. Amphibians live in water as well as in the sky.
- B. Birds have feathers and wings.
- C. Fish breathe through their nose.
- D. Mammals give birth to young.

- a. A: True; B: False; C: True; D: False;
- b. A: False; B: True; C: False; D: True;
- c. A: True; B: True; C: False; D: False;
- d. A: False; B: False; C: True; D: True;

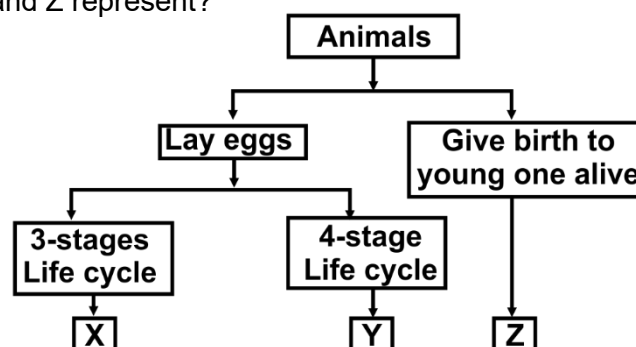
27. Nora wants to go to his brother's place who lives in Nepal. Which of the following transport should he take to reach Nepal from his residence in Delhi in the shortest possible time?

- a. 
- b. 
- c. 
- d. 

28. Lilly and Jane were having a nice time in the park. Jane met a person and was calling him as dad. The same person called Lilly as his daughter. What is the relationship between the two girls?

- a. 1 and 3
- b. 3 and 4
- c. 2 and 4
- d. 1, 3 and 4

29. Study the classification table shows below.  
What could X, Y and Z represent?



- a. X - Platypus, Y - Mosquito, Z - Chicken
- b. X – Mosquito, Y – Cockroach, Z – Rabbit
- c. X - Grasshopper, Y - Butterfly, Z - Rabbit
- d. X - Silkworm, Y - Mosquito, Z - Spiny anteater

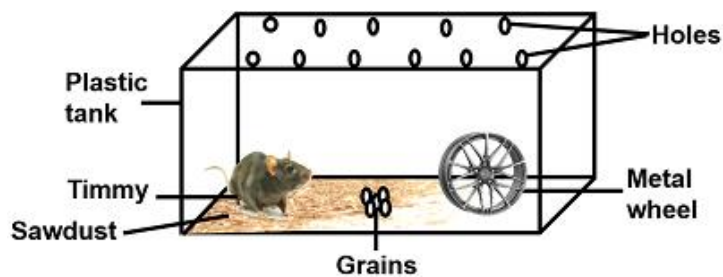
30. Jack, the only son, is living with his father and mother in New York, then his family has how many members?

- a. Two
- b. Three
- c. Four
- d. Five

### Scholar Section (Each Question is 2 Marks)

31. Sophie wishes to keep a family of hamsters. She has a male hamster named Timmy and she keeps him in a tank as shown below.

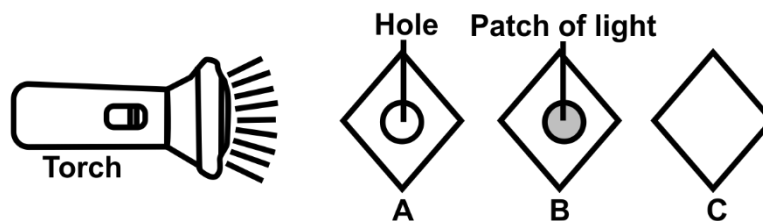
Two things are missing from the set-up below. They are critical in order for Timmy to survive and have a family of hamsters. What are they?



- a. Air and water
- b. Water and female hamster
- c. Air and a female hamster
- d. Sunlight and water

32. In an experiment shown below, the sheets A, B and C are arranged in a straight line in a dark room. When the torch is switched on, a bright circular patch of light is seen on the sheet B only.

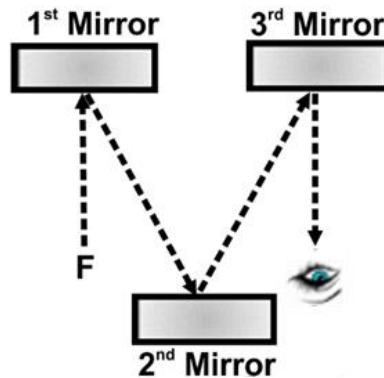
Which of the following materials constitute sheets A, B and C respectively?



- a. A-Wood, B-Clear plastic, C-Rubber
- b. A-Rubber, B-Wood, C-Clear plastic
- c. A-Clear plastic, B-Rubber, C-Wood
- d. A-Clear plastic, B-Wood, C-Rubber



- 33.** In order to verify the phenomenon taught in school that an object in the mirror appears reversed left and right side, Susan arranged the following setup shown in the figure below. She kept a letter 'F' made up of cardboard in front of 1<sup>st</sup> mirror. The correct image of the letter F as appeared in the 3<sup>rd</sup> mirror will be:



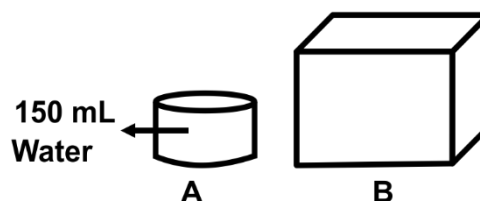
- a. F                      b. F
- c. E                      d. E

- 34.** The following materials were taken to observe and learn the functioning of the lungs and diaphragm during the process of inhalation and exhalation.  
A two-litre soft drink bottle with a cap, a large balloon and two small balloons and a Y-shaped glass tube or a hose connector.  
Match the following things in column I with the organs they represent in a respiratory system in column II.

Column I		Column II	
1.	A Y-shaped glass tube or a hose connector	a.	Chest activity or ribcage
2.	A large balloon that covers the bottom of the bottle	b.	Lungs
3.	A two-litre empty soft drink bottle	c.	Diaphragm
4.	Two small balloons attached to the glass tube	d.	Windpipe

- a. 1 - d, 2 - c, 3 - a, 4 - b                      b. 1 - a, 2 - b, 3 - c, 4 - d  
c. 1 - d, 2 - a, 3 - c, 4 - b                      d. 1 - b, 2 - a, 3 - d, 4 - c

- 35.** The diagram shows two containers, A and B. Container A contains 150 millilitres of water and Container B is empty.  
If all of the water from container A is poured into container B, what will happen to the volume of the water?



- a. It will decrease.
  - b. It will increase.
  - c. It will remain the same.
  - d. Increase or decrease according to the shape of the container.
- 

**36.** Match the birds in column I with the type of food they eat in column II and select the correct option:

Column I (Birds)		Column II (Food eaten by them)	
1.	Swallow	a.	Grains and seeds
2.	Sparrow	b.	Tiny insects
3.	Parrot	c.	Nectar from flowers
4.	Sunbird	d.	Seeds, nuts and fruits

- a. 1 - d, 2 - c, 3 - a, 4 - b
  - b. 1 - b, 2 - c, 3 - d, 4 - a
  - c. 1 - b, 2 - a, 3 - d, 4 - c
  - d. 1 - c, 2 - d, 3 - b, 4 - a
- 

**37.** Four students made the following statement:

Jack: Linen is obtained from plants and absorbs well.

Arya: Plastics are good conductors of electricity.

John: When the surface area is large, evaporation takes place quickly.

Joseph: Copper vessels lose their shine with time due to the action of air and moisture.

Who among them made the incorrect statement?

- a. Jack
  - b. Arya
  - c. John
  - d. Joseph
- 

**38.** Consider the following statements and choose the correct option:

Statement 1: If an object is attracted to a magnet, the object is most likely made of cardboard.

Statement 2: Heat energy causes an ice cube to melt.

Statement 3: A gravity force causes a marble to sink to the bottom of a glass of water.

- a. Only statement 1 is correct.
  - b. Only statement 2 is correct.
  - c. Statement 2 is correct but statements 1 and 3 are incorrect.
  - d. Statement 1 is incorrect but statements 2 and 3 are correct
- 

**39.** Read the passage below and answer the following question.

Michael went to a science museum with his elder brother who is an astronaut. From the museum, he saw the sky using a telescope and was able to see a big bright object. His brother told him that this bright object in the sky is a planet that was unique as it had rings and the greatest number of moons. Moving further he also saw groups of stars forming the shape of the bear.

Which of the following group of stars Michael must have seen?

a.



b.



c.



d.



40. A young plant wilts when it is dug up, even if it is later re-planted at the same place. What can be the reason for this?

- The leaves lose more water when the plant is replanted.
- The roots cannot take up mineral salts because digging of the soil decreases mineral content.
- The stem cannot transport water because digging always causes it to break.
- The surface area of the roots gets reduced on digging up.

## Answer Key

1.	a	2.	a	3.	d	4.	a	5.	c	6.	b	7.	a
8.	c	9.	a	10.	d	11.	b	12.	c	13.	b	14.	c
15.	b	16.	a	17.	c	18.	d	19.	c	20.	b	21.	c
22.	d	23.	c	24.	a	25.	a	26.	b	27.	d	28.	c
29.	c	30.	b	31.	b	32.	b	33.	b	34.	a	35.	c
36.	c	37.	b	38.	d	39.	b	40.	d				