



## CREST Science Olympiad (CSO)

# Sample Paper

## Pattern and Marking Scheme

Grade	Topic/Section	No. of Questions	Marks per Question	Total Marks
Grade 4	Practical Science	25	1	25
	Achiever's Section	10	2	20
<b>Grand Total</b>		<b>35</b>		<b>45</b>

The total duration of the exam is 60 minutes.

## Syllabus

**Section 1:** Plants, Animals, Food and Digestion, Clothing, Matter and Materials, Force, Work and Energy, Our Environment, Earth and Universe.

**Achievers Section:** Higher Order Thinking Questions - Syllabus as per Section 1

For more details, visit <https://www.crestolympiads.com/science-olympiad-cso>

## Practical Science (Each Question is 1 Mark)

1. What is common between the two animals shown below?



- a. They both are decomposers.  
b. They both migrate to a warmer place during winter.  
c. They both can blend with the surroundings.  
d. They both are herbivores.
2. Name the following:
1. The brightest planet in the solar system
  2. Dwarf planet
  3. Red planet
- a. 1-Mercury, 2-Pluto, 3-Mars      b. 1-Mars, 2-Neptune, 3-Mercury  
c. 1-Venus, 2-Pluto, 3-Mars      d. 1-Mercury, 2-Earth, 3-Mars

3. Fill in the blank with the correct option:

Jane loves to play outside in the sun all the time with her friends. Exposure to sunlight is a natural way of getting \_\_\_\_\_.

- a. vitamin D      b. vitamin A  
c. vitamin C      d. vitamin K
4. Fill in the blank:  
In a banyan tree, roots grow from the branches, reach the soil and continue growing below the soil. These are called \_\_\_\_\_ roots.



- a. buttress      b. fibrous  
c. aerial      d. water storage
5. Choose the correct option and complete the following sentence:  
When we heat or cool a matter, the movement of its particles gets affected. When we cool a substance, its particles \_\_\_\_\_.

- a. stop moving
- b. start moving slowly
- c. do not move at all
- d. start moving faster

6. Fill in the blank:

The digestion process starts in the mouth. From the mouth, the food reaches the stomach through the oesophagus. The stomach secretes acids and enzymes that digest food. The thick semifluid mass of partially digested food and digestive secretions that is formed in the stomach and intestine during digestion is called \_\_\_\_\_.

- a. stool
- b. chyme
- c. enzyme
- d. mucous

7. Two students were having a class discussion about friction. This is what they said:

Michael: The force of friction between the tyres of a vehicle and the road helps the vehicle to stop when the brake is applied.

Ron: It is possible to write on a glazed paper if there is no friction.

Who among the above students was wrong?

- a. Only Ron
- b. Only Michael
- c. Both were correct
- d. Both were wrong

8. Given below are a set of phenomena:

1. Tearing of paper
2. Souring of milk
3. Chopping of wood
4. Breaking a glass

Which of the above changes can be reversed?

- a. 1 only
- b. 1 and 4 only
- c. 1, 2, 3 and 4
- d. None of them

9. Choose the correct option and complete the following sentences:

1. To move the shopping cart in the forward direction, we will have to \_\_\_\_\_ the cart.
2. A book is suspended at one of the spring and the other end is on a hook fixed to a wall. The effect of this force will result in spring \_\_\_\_\_.

- a. 1-push, 2-expanding downwards
- b. 1-pull, 2-expanding upwards
- c. 1-push, 2-compressing downwards
- d. 1-pull, 2-compressing downwards

10. Consider the following table and choose the correct option:

Vitamin	Sources	Functions
X	Spinach, carrot, fish-liver oil	Keeping eyes, hair and skin healthy
Y	Citrus fruits, guava, amla and tomatoes	Keeping gums and joints healthy and building resistance to infections

- a. X-Vitamin A, Y-Vitamin C
- b. X-Vitamin D, Y-Vitamin A
- c. X-Vitamin K, Y-Vitamin C
- d. X-Vitamin K, Y-Vitamin D

11. Observe the food pyramid shown below and answer the following question:

1. Level 1 is rich in which nutrient?
2. Food items of which level should be consumed in very little quantity?



- 1-Carbohydrates, 2-Level 5
- 1-Proteins, 2-Level 1
- 1-Vitamins, 2-Level 4
- 1-Fats, 2-Level 3

12. We eat different types of food every day. Food gives us the energy to work, play and live. Which of the following food components are called bodybuilding foods?

- Proteins
- Fats
- Vitamins and minerals
- Carbohydrates

13. In reference to the different types of forces acting on various objects, which of these is INCORRECTLY paired?

- Picking up a suitcase - Muscular force
- People are able to walk on earth - Gravitational force
- Paper clips get attracted to the magnet - Frictional force
- None of the above

14. Choose the correct option and complete the sentence given below:

When harmful substances mix with air and make it dirty, it is called air pollution. Air pollution does not cause \_\_\_\_\_.

- diseases like bronchitis and asthma
- destruction of the ozone layer
- irritation in eyes and skin
- forest fire

15. A group of liquids are given in the box below:

What is the similarity seen in such a pair of liquids?

- |  |
|--|
| <ol style="list-style-type: none"><li>1. Oil and water</li><li>2. Water and petrol</li></ol> |
|--|

- They all evaporate on heating.
- They are miscible liquids.
- They are immiscible liquids.
- They are all universal solvents.

16. Matter exists in three states. Which of the following figures shows the arrangement of particles in a solid state?



17. Which of the following pairs of animals are arboreal?

P: Garden Lizard  
 Q: Turtle  
 R: Newts  
 S: Flying Squirrel

- a. P and Q  
 b. Q and R  
 c. R and S  
 d. P and S

18. The given picture shows a football without air and the other one filled with air. What conclusion can we draw from this?



- a. Air has no weight.  
 b. Air exerts pressure.  
 c. Air is everywhere.  
 d. Air occupies space.

19. Two classmates were having a class discussion about the energy required to do work. This is what they said:

Student 1: Riding a bicycle up a hill requires more energy as compared to the man cooking food in the kitchen.

Student 2: A running boy has more kinetic energy than a moving bus.

Who among them spoke correctly?

- a. Student 1 only  
 b. Student 2 only  
 c. Both the students were correct  
 d. Both the students were incorrect

20. Which of the following statements hold true regarding the given plants X and Y?

- A. Plant X grows in a place where there is very little rainfall, whereas plant Y grows in cold mountainous region.  
 B. In plant X, leaves are flat and thin whereas leaves in plant Y are broad.  
 C. In plant X, roots have tiny openings at their tips whereas in plant Y roots are long.  
 D. In plant X, leaves are modified into spines whereas in plant Y leaves are thin and needle-like.



X



Y

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

21. Observe the group of food items shown below carefully.  
Which group of foods do they belong to based on their function?

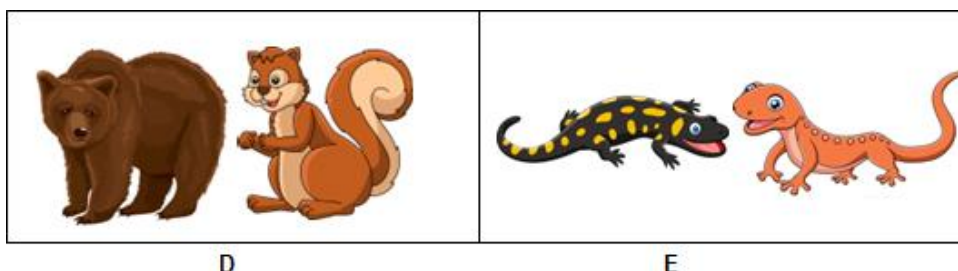


- a. Foods for fighting diseases in the body.
- b. Foods required for proper mechanism of the digestive system.
- c. Food required for growth
- d. Food required for energy to do work.

22. Choose the correct option and complete the following sentence:  
Rayon is different from truly synthetic fibres because \_\_\_\_\_.

- a. it has silk-like appearance
- b. its fibres can be woven like those of natural fibres
- c. it is obtained from wood pulp
- d. it can be dyed in wide variety of colours

23. The figure below shows two groups of animals namely 'D' and 'E'. Select the correct option regarding the categorization of the given groups of animals:



- a. D: They are amphibians.  
E: They hibernate.
- b. D: They hibernate.  
E: They are amphibians.

- c. D: They migrate.  
E: They camouflage.
- d. D: They are amphibians.  
E: They are arboreal.

24. Read the clues given below and identify the animal from the given options:

Clue 1: I can close my nostrils while diving into the water.

Clue 2: I can smell my prey from miles away.

Clue 3: I have two layers of fur and a thick layer of fat below my skin.

- a. Camel
- b. Koala bear
- c. Tiger
- d. Polar bear

25. Money plant is an example of group M and watermelon is an example of group N. What is the common feature of the plants of groups M and N?

- a. All of them have soft but woody stems.
- b. All of them have very weak stems.
- c. None of them have roots.
- d. None of them need support to grow.

## Achiever's Section (Each Question is 2 Marks)

26. Consider the following statements and choose the correct option:

Statement 1: A man cuts down the trees and modifies his environment to make life comfortable. By deforestation, he clears the land for agriculture, industries and habitat.

Statement 2: Plants and animals are interdependent. The decay of dead plants and animals provides nutrition to the soil which in turn helps in the growth of plants and trees.

- a. Statement 1 is correct and statement 2 is incorrect
- b. Statement 1 is incorrect and statement 2 is correct
- c. Both the statements are correct
- d. Both the statements are wrong

27. Different bird species have differently shaped beaks because each species has evolved a beak design that suits its diet and lifestyle.

Observe the beaks of these birds below. Which of these birds cannot eat flesh?



- a. Only D
- b. Only E
- c. Only F
- d. Both D and F

28. The given picture shows the fruit of a plant called cocklebur.

Choose the method by which the seeds in the fruit are dispersed:



- a. Seeds are carried on an animal's fur.
- b. Seeds are carried by water.
- c. Seeds are eaten by an animal.
- d. Seeds are blown away by the wind.

29. What common characteristic feature is observed between roundworm and tapeworm?



- a. They feed on the dead remains of animals.
- b. They depend on parasites for food.
- c. They live on the body of the host.
- d. They live inside the body of the host.

30. State which of the following statements are true or false:

- 1. The painting uses the separation process of evaporation.
- 2. The separation process of winnowing is used to separate salt from water.
- 3. Water droplets are seen on the outer surface of a glass when cold water is poured in it. This is due to the condensation of water vapour present in the atmosphere.

- a. 1-True, 2-True, 3-False
- b. 1-False, 2-False, 3-False
- c. 1-False, 2-True, 3-False
- d. 1-True, 2-False, 3-True

31. Choose the correct option which answers the following question:

Waterlogged places are called swamps or marshes. Marshy regions have sticky and clayey soil. Which of the following have breathing roots since air cannot reach the roots of these plants?

- a. Mango trees
- b. Coconut trees
- c. Mangroves
- d. Spruce trees

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

The bile is secreted by \_\_\_\_\_. It is stored in \_\_\_\_\_. It helps in breaks down of \_\_\_\_\_.

- a. liver, gall bladder, fats
- b. pancreas, large intestine, proteins
- c. kidneys, gall bladder, carbohydrates
- d. liver, small intestine, simple sugars

33. State the effect of the force in each of the following cases:

- 1. James blows the air from his mouth on the smoke rising up from a burning stick.
- 2. When we sit on a sofa with springs, then the springs of the sofa get compressed.



- a. 1- Force can change the speed of a moving object  
2- Force can move a stationary object
- b. 1- Force can change the direction of a moving object  
2- Force can stop a moving object
- c. 1- Force can stop a moving object  
2- Force can change the direction of a moving object
- d. 1- Force can change the direction of a moving object  
2- Force can change the shape and size of an object

34. Match column I with column II and select the correct option:

	Column I		Column II
1.	Conifer	a.	Orchids
2.	Deciduous	b.	Lianas
3.	Climbers in rainforests	c.	Cedar
4.	Epiphytes	d.	Sal

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

35. Match column I with column II and select the correct option:

	Column I		Column II
1.	Nylon	a.	fibre obtained from plant
2.	Wool	b.	animal skin
3.	Jute	c.	fibre obtained from animal fur
4.	Leather	d.	fibre not obtained from plant/animal

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

## Answer Key

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