



CREST Science Olympiad (CSO)

Sample Paper

Pattern and Marking Scheme

Grade	Topic/Section	No. of Questions	Marks per Question	Total Marks
Grade 5	Practical Science	40	1	40
	Achiever's Section	10	2	20
Grand Total		50		60

The total duration of the exam is 60 minutes.

Syllabus

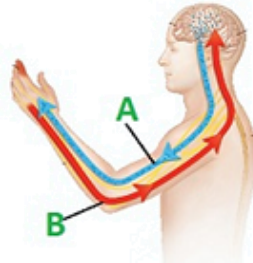
Section 1: Animals, Human Body and Health, Plants, Natural Resources, Pollution and Calamities, Earth and Universe, Matter, Force, Work and Energy.

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

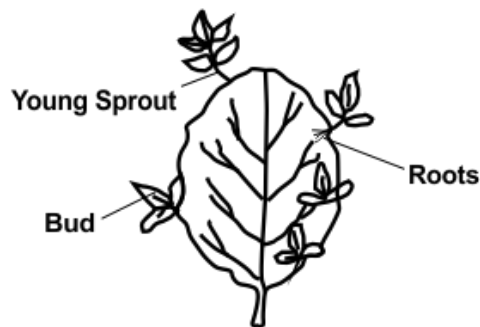
For more details, visit <https://www.crestolympiads.com/science-olympiad-cso>

Practical Science (Each Question is 1 Mark)

1. Observe the figure shown below carefully. Identify the nerves, A and B, carrying orders from and to the brain or the spinal cord, respectively:



- a. A - Sensory nerve, B - Motor nerve
b. A - Motor nerve, B - Sensory nerve
c. A - Autonomic nerve, B - Sensory nerve
d. A - Motor nerve, B - Autonomic nerve
2. Which of the following is the main function of the labelled part called buds in the picture shown below?



- a. They produce new plants.
b. They produce food for the plant.
c. They store water for the plant.
d. They produce flowers for the plant.
3. The name of which of the following CANNOT be obtained by using the letter in the wonder box below:

G	M	A	T	E	I	C
N	F	O	B	U	R	Y

- a. Attractive or repulsive force that arises between electrically charged particles because of their motion.
b. Upward force exerted by a fluid on a body.
c. Force by which the earth pulls an object towards it.
d. Force generated when two surfaces in contact slide against each other.
4. What do grasshoppers and chameleons have in common?



- a. Both are parasites.
- b. Both are nocturnal animals.
- c. Both hibernate.
- d. Both change their colour and are not easily seen or spotted by their enemies.

5. Natural resources are the materials we use from nature to make the things we need. The air we breathe and the light we get from the sun are available in unlimited quantity. But the stock of coal, forest and petroleum resources is limited and is depleting day by day. Which of the following statement is incorrect related to the natural resources?

- a. Black gold is another name of marble.
- b. Precious metals like gold and platinum are used for making jewellery.
- c. Dentists use powdered pumice for polishing our teeth.
- d. Shale is used for making tiles and bricks.

6. Which of the following effect cannot be produced by a force?

- a. Changing the mass of an object
- b. Changing the shape of an object
- c. Changing the position of an object
- d. All of the above

7. David wrote the following two statements on the blackboard about living and non-living things:



- a. Moon's shadow
- b. Sun's shadow
- c. Earth's shadow
- d. The Sun

8. Read the following statement carefully and identify X correctly:
X is the conversion of solid into gas without changing into liquid.

- a. Sublimation
- b. Evaporation
- c. Melting
- d. Decantation

9. Fill in the blanks with suitable terms and select the correct option:

When there is an earthquake, we should _____(i)_____ the house and go to an _____(ii)_____. Or else, lie down under a _____(iii)_____ thing like a table and hold on tightly so that it does not slip away. Wait until the _____(iv)_____ stops.

- a. i-stay inside, ii-open well, iii-tree, iv-rain
- b. i-leave, ii-open ground, iii-strong, iv-shaking
- c. i-dance, ii-open door, iii-weak, iv-eclipse
- d. i-sleep, ii-open field, iii-wooden, iv-storm

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

1. Titan is a satellite of the planet named _____.
2. The planet _____ is referred to as the brightest star in the sky.

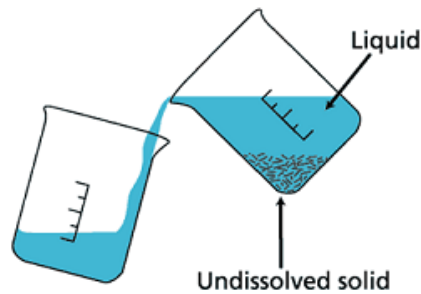
- a. 1-Earth, 2. Jupiter
b. 1-Mars, 2-Earth
c. 1-Saturn, 2-Venus
d. 1-Jupiter, 2-Mars

11. Identify the rock shown below which when powdered is used to polish teeth:



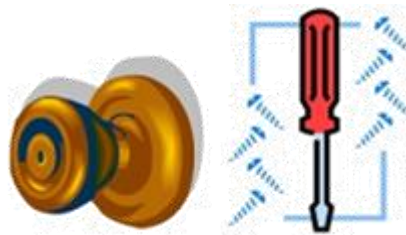
- a. Gneiss
b. Pumice
c. Limestone
d. Granite

12. Look at the figure below and identify the process it represents correctly:



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

13. Which of the following is a solid form of water?



- a. Pulley
b. Wedge
c. Inclined plane
d. Wheel and axle

14. Two students were having a classroom discussion on earth and universe and this is what they said:

Ana: An imaginary line about which earth rotates is called its pole.

Sara: Earth takes 365 days to complete one rotation.

Who among them was/were wrong?

- a. Ana only
- b. Sara only
- c. Both the students were wrong
- d. Both the students were correct

15. Fill in the blank:

_____ is the plant that disperses its seed by the same agency as the plant shown below.



- a. Drumstick
- b. Coconut
- c. Xanthium
- d. Castor

16. State which of the following statements are TRUE:

1. Boiling of a liquid occurs at one temperature only, while evaporation may occur at different temperatures.
2. Gases consist of particles that are packed close together.
3. Statues are solid. They are made up of solid materials.

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

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

	Column I		Column II
1.	Dolphin	a.	Mammal with a beak like a duck
2.	Platypus	b.	A fish-like mammal that lives in water
3.	Ostrich	c.	Lays the smallest egg
4.	Hummingbird	d.	Lays the largest egg

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

18. Unscramble the words to find the name of the type of simple machine that is made with a rope or chain wrapped around a wheel as shown in the picture below:



- a. REEVL
- b. EGWDE
- c. WECSR
- d. YEPLUL

19. Observe the picture given below carefully.

Which system(s) of the boy's body are most likely involved in performing the high jump at the Olympics?

- A. Skeletal system
- B. Respiratory system
- C. Digestive system
- D. Muscular system
- E. Excretory system



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

20. Given below is a wrong statement. Change the words that are quoted and choose the correct option:

The earth's 'mantle' is made of several plates whose sudden movement causes earthquakes.

- a. The earth's inner core is made of several plates whose sudden movement causes earthquakes.
- b. The earth's upper core is made of several plates whose sudden movement causes earthquakes.
- c. The earth's crust is made of several plates whose sudden movement causes earthquakes.
- d. The earth's lower core is made of several plates whose sudden movement causes earthquakes.

21. Read the sentences given below. State whether the following sentences are true or false:

- 1. We apply oil on the hinges of the doors to increase the friction.
- 2. Friction can be reduced by making the surface smooth.

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

22. The given diagram shows two animals namely X and Y. Select the correct option regarding the difference between the two:

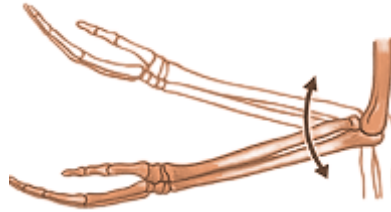


X

Y

- a. X is an amphibian whereas Y is an aquatic animal.
- b. X has flippers that help them to swim in water whereas Y has webbed feet to help them swim in water.
- c. X waded in water whereas Y jump and hop in the water.
- d. X camouflage themselves whereas Y cannot camouflage themselves.

23. Identify the type of joint shown in the picture:



- a. Hinge joint
- b. Ball and socket joint
- c. Gliding joint
- d. Pivot joint

24. The rock shown below is a metamorphic rock formed from limestone. Name the rock:



- a. Slate
- b. Granite
- c. Marble
- d. Gneiss

25. Complete the following sentences and select the correct option:

1. The spines protect the plant from _____.
 2. Coconut trees are generally found in _____.
- a. 1-grazing animals, 2-hot and damp areas
 - b. 1-itching, 2-rainy areas
 - c. 1-floating, 2-desert regions
 - d. 1-pricking, 2-hilly areas

26. Which of the following are not the characteristic properties of liquids?

1. They expand on heating.
 2. They can be compressed easily.
 3. There is a lot of intermolecular space between the molecules.
 4. They do not have a definite shape.
 5. They flow to take the shape of the container.
- a. 2 and 3
 - b. 1 and 4
 - c. 4 and 5
 - d. 3 and 4

27. What is the difference between a plant and an electric heater in terms of the energy they are associated with?



- a. A plant is associated with heat energy whereas an electric heater is associated with solar energy.
- b. A plant is associated with solar energy whereas an electric heater is associated with both heat energy and electrical energy.
- c. A plant is associated with magnetic energy whereas electric heater is associated with only heat energy.
- d. A plant is associated with light energy whereas an electric heater is associated with chemical energy.
28. Which of the following pair of activities are considered as involuntary movements in human beings?
- P: Beating of the heart
Q: Digestion of food
R: Playing table tennis
S: Swimming
- a. P and Q
b. Q and R
c. P and R
d. R and S

29. Read the clues given below and identify the planet:
- Clue 1: It is the coldest planet of our solar system.
Clue 2: It is one of the outer planets.
Clue 3: It is covered with a thick layer of beautiful blue-green gas.
- a. Mars
b. Uranus
c. Saturn
d. Neptune

30. Look at the pictures of the animals given below and spot the similarity between them correctly:



Alligator



Turtle



Snake

- a. They are herbivores.
b. They are reptiles.
c. They are omnivores.
d. They are scavengers.

31. Read the passage below and correctly identify X:

The X is in charge of thinking and memory. X is the largest part of the brain. Its dome-shaped surface is covered with deep ridges and grooves.

- a. Cerebrum
- b. Medulla
- c. Spinal cord
- d. Cerebellum

32. Four children made the following statements:

Richard - Natural resources are very useful and they are both exhaustible and inexhaustible.

Sara - Resources that we get from soil are called unnatural resources.

Bob - Some of the natural resources are very harmful to us.

Tom - Non-mineral resources include air and water which are not obtained from the soil.

Which of the above children made the correct statements?

- a. Richard and Sara
- b. Sara and Bob
- c. Richard and Tom
- d. Sara and Tom

33. Fill in the blank and select the correct option:

When oxides of _____ and _____ react with water vapour present in the atmosphere they form acids of nitrogen and sulphur. These acids fall down with rain drops. This is called acid rain and harms plants, animals and buildings etc.

- a. sulphur, nitrogen
- b. carbon dioxide, oxygen
- c. helium, nitrogen
- d. sulphur, hydrogen

34. The picture shown below is that of Pupalia seeds. Identify the agent of its seed dispersal:



- a. Wind
- b. Water
- c. Animals
- d. Explosion of fruits

35. Unscramble the words given below and select the option that is the cause for soil erosion:

1. TFFSRONAEIAO
2. MMBNTNAEEK
3. ZGORVERIANG
4. GTRCMNFEEAIRR

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

36. What is incorrect about Whales, Dolphins and Porpoises?

- a. They live in water.
- b. They come to surface for breathing, as they have nostril on their head.
- c. They have a layer of adipose tissues under their skin to keep them warm.
- d. They have fur to keep them warm.

37. Which one of the following is an example of ball and socket joint?



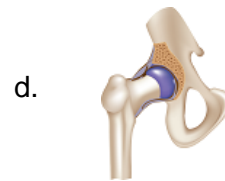
Wrist



Ankle



Vertebrae



Hip

38. In which of the following groups, matter does not share the same properties?

- a. Stone, brick, pebble
- b. Air, hydrogen, helium
- c. Apple juice, salt, soda
- d. Coke, orange juice, tomato juice

39. In which of the following situations evaporation does not cause cooling?

- a. We sweat to cool our bodies
- b. Occurrence of snowfall
- c. Stretching out of tongues by dogs during summer
- d. Usage of earthen pots

40. Leo pushed a box across the floor. He noticed that it came to stop shortly after. Which of the following could be the reason for the above-given statement?

- a. Gravity is acting on the box in the direction opposite to the box's movement.
- b. Friction is acting on the box in the same direction to the box's movement.
- c. Friction is acting on the box in the direction opposite to the box's movement.
- d. The heat produced by the box's movement slows down the box.

Achiever's Section (Each Question is 2 Marks)

41. Consider the statements given below:

1. Reusing materials after they have been changed into another form is called reusing.
2. Glass items are non-biodegradable wastes.
3. Wet waste such as fruit and vegetable waste, used coffee powder and tea leaves, flowers, eggshells and so on, can be composted and converted into manure.

4. Machines that are used to burn hospital waste at low temperatures are called incinerators. However, this causes noise and soil pollution.

Which of the above statements are correct?

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

42. Complete the following sentences correctly

1. When a stronger magnet is used to attract materials, the magnetic force of attraction _____.
 2. An iron nail can be permanently magnetized by _____.
- a. 1-may change
2-rubbing a bar magnet along its length in all directions
- b. 1-never change
2-rubbing a bar magnet at its ends
- c. 1-is stronger
2-rubbing a bar magnet along its length in one direction
- d. 1-is weaker
2-rubbing a bar magnet at its centre

43. Which among the following is not an adaptive feature of the plant shown below?



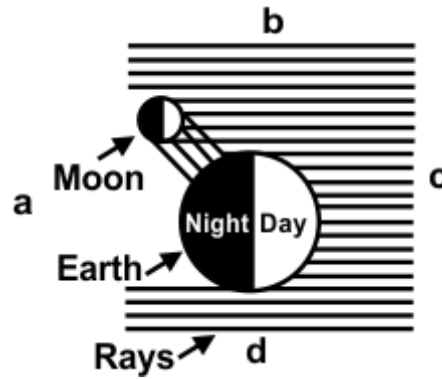
- a. The leaves are narrow, thin and ribbon-like.
b. The leaves can bend and move easily.
c. The leaves have few stomata.
d. The leaves have a waxy coating.

44. Observe the two animals shown below. Spot the similarity between them correctly:



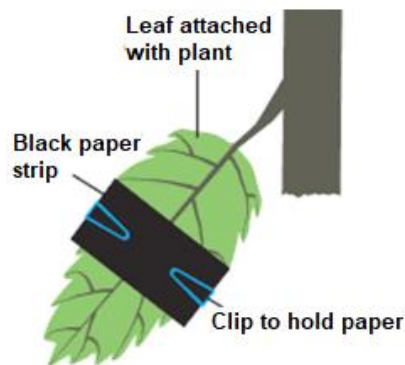
- a. Both these animals are aerial.
b. Both these animals are amphibians.
c. Both these animals live in the desert regions.
d. Both these animals are arboreal.

45. Observe the figure given below carefully and identify the position of the Sun:



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

46. A plant leaf was taken as shown in the picture below and a strip of black chart paper was placed in the middle of a big leaf at the centre. The plant was kept outdoors for 24 hours after which the black strip was removed and tested for starch presence by adding iodine solution. Which of the following statement is correct related to the below-shown experiment?



- Iodine solution added on the place, where black strip was put, turned blue-black which proved that plants make food or starch without sunlight.
- Iodine solution added on the place, where black strip was put, did not turn blue-black which proved that plants cannot make food or starch without sunlight.
- Iodine solution added on the place, where black strip was put, did not turn blue-black which proved that plants can make food or starch without sunlight.
- Iodine solution added on the place, where black strip was put, turned blue-black which proved that plants make food or starch with sunlight.

47. Read the passage below and identify X correctly:

X passes through three stages of the life cycle. Its baby comes out of the egg and looks much like grown insect except that it has no wings and is called nymph. X undergoes moulting as well.

- | | |
|--------------|--------------|
| a. Butterfly | b. Cockroach |
| c. Mosquito | d. Frog |

