



CREST Science Olympiad (CSO)

Previous Year Paper (2021-22)

Class 5

Time Allowed: 1 hour

Maximum Marks: 60

- Additional **10 minutes** will be allotted to fill up information on the OMR Sheet, before the start of the exam.
- Fill in all the mandatory fields clearly on the OMR Sheet.
- There are **2 sections** in the question paper namely the **Practical Science & Achievers' Section** consisting of **40 questions (1 mark each) & 10 questions (2 marks each)**, respectively.
- There is no negative marking. The use of a calculator is not permitted.
- There is **only ONE correct option** to a given question.
- Use **HB Pencil or Blue / Black ball point pen only** for marking the correct choice of answers on the OMR Sheet.
- Rough work is to be done in the space provided in the test booklet. Extra plain sheet may be provided by the school for the rough work.
- The OMR Sheet is to be handed over to the invigilator at the end of the exam.
- No candidate is allowed to carry any textual material, printed or written, bits of paper, any electronic device, etc. inside the examination hall.
- The use of unfair means may result in the cancellation of the exam. Any such instances may be reported at **+91-98182-94134** or **info@crestolympiads.com**

DO NOT OPEN THIS BOOKLET UNTIL ASKED TO DO SO

FILL IN THE DETAILS

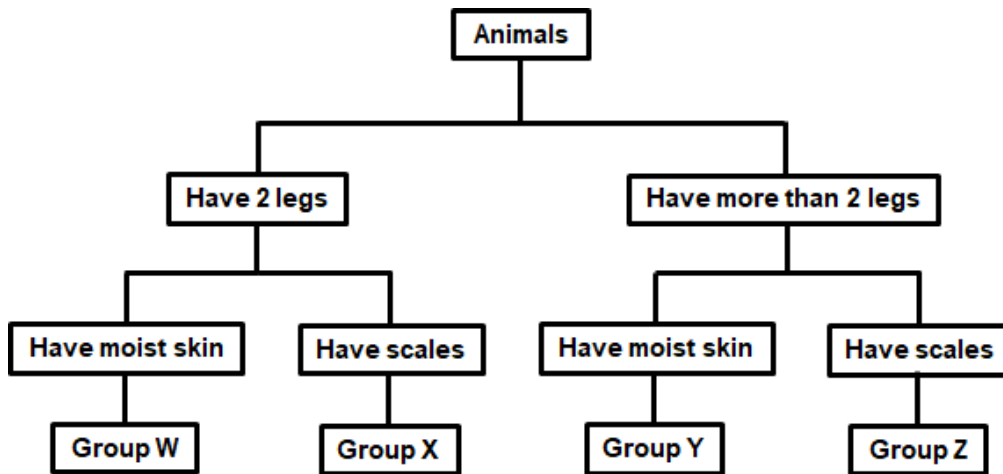
Student Name: _____

Class: _____ Section: _____

Enrollment No: _____

Practical Science (Each Question is 1 Mark)

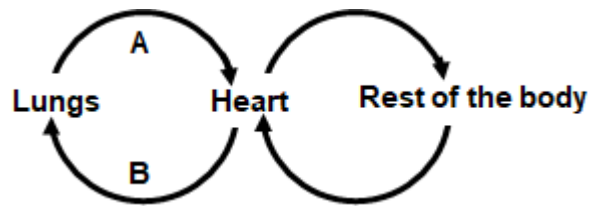
1. The diagram below shows how some animal groups are classified. Which of the following statements about the animal group below is definitely true?



- a. Animals in group W and group X can fly.
b. Animals in group Y and group Z can live on land and in water
c. Animals in group W and group Z have the same breathing method
d. Animals in group X and group Y have the same reproduction method.
2. Which is NOT an example of a symbiotic relationship?
- a. A caterpillar changing into a butterfly
b. A tick biting a white – tailed deer
c. A remora fish sticking to the shell of a sea turtle
d. A clownfish living within the parts of a sea anemone
3. Which of the following are precautions that one should take when an earthquake strikes?
1. If indoors, pick a safe place where things will not fall on you, away from windows, bookcases, or tall, heavy furniture.
 2. If outdoors, move away from buildings, trees, streetlights, and power lines.
 3. If you are in a vehicle, pull over to a clear location, stop and stay there until the shaking stops.
- a. Only 1
b. Only 2
c. Only 1 and 2
d. 1, 2 and 3

4. Which of the following pairs are wrongly classified?
P: Music player – Heat energy to mechanical energy
Q: Burning wood – Chemical energy to potential energy
R: Battery – Chemical energy to electrical energy
S: Moving wind mill – Mechanical energy to electrical energy
- a. Q and R
b. P and Q
c. R and S
d. P and S
5. Read the passage below carefully and identify X and Y correctly:
X is the portion of the Moon's shadow where the moon completely covers the sun whereas Y is the area of the shadow where only a portion of the moon is in the front of the sun.
- a. X – Umbra and Y – Penumbra
b. X – Penumbra and Y – Umbra
c. X – Solar Eclipse and Y – Lunar eclipse
d. X – Rotation and Y – Eclipse
6. George listed 4 statements about the life cycle of animals in his science journal:
A. All living things have similar stages in their cycles.
B. A life cycle shows the order of the different stages.
C. The life cycle of a bird consists of the egg, young and adult stage.
D. A life cycle is a pattern that repeats itself in the lives of living things.
- Which of the following statements about the life cycle are correct?
- a. B and C only
b. A and D only
c. B, C and D only
d. A, B, C and D
7. Consider the following statements:
Statement 1: When Emma pushes a notebook across the table, work is said to be done.
Statement 2: When Emma pulls the wall towards herself, work is said to be done.
Which one of the following is correct about the above two statements?
- a. Statement 1 is false but statement 2 is true
b. Statement 1 is true but statement 2 is false
c. Both the statements are true
d. Both the statements are false
8. Winona felt cold when she got out of the swimming pool. Why?
- a. The water on her body evaporated into the surrounding air.
b. The water in the swimming pool gained heat from her body.
c. The water vapour from the surrounding air condensed onto her body.
d. The water from the swimming pool evaporated into the surrounding air.

9. The diagram below shows the blood flow between the heart, the lungs and the rest of the body. Which one of the following best describe the blood at A and B?



- a. A – Rich in oxygen, poor in carbon dioxide
B – Rich in carbon dioxide and oxygen
- b. A – Rich in carbon dioxide, poor in oxygen
B – Poor in carbon dioxide and oxygen
- c. A – Rich in oxygen, poor in carbon dioxide
B – Rich in carbon dioxide, poor in oxygen
- d. A – Rich in carbon dioxide, poor in oxygen
B – Rich in carbon dioxide and oxygen
10. Which of the following statements about forces are correct?
- A. The further the object is from the Earth, the smaller is its mass.
- B. An object with a smaller mass has a smaller gravitational force acting on it.
- C. An object which is thrown upwards will eventually fall down due to the pull of gravity.
- D. The amount of force needed a lift an object depends on the size of the object.
- a. A and B only
- b. B and C only
- c. C and D only
- d. A, B and C only
11. What is the similarity seen between the two plants shown below?



- a. Both are plants that grow in marshy areas.
- b. Both are plants that are rooted and grow underwater.
- c. Both these plants trap insects.
- d. Both these plants are free – floating growing on the surface of the water.
12. Select the activity which is different from the other three based on the types of force involved.
- P – A table pushed along a floor
- Q – A vehicle stops when brakes are applied
- R – A stone thrown high up in the air, always comes down
- S – Drilling a nail into the wall
- a. P
- b. Q
- c. S
- d. R

13. Which of the following pairs of energy are non-renewable sources of energy?

1. Solar power
2. Wind
3. Petroleum
4. Water
5. Natural gas

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

14. Read the clues and identify the animal correctly:

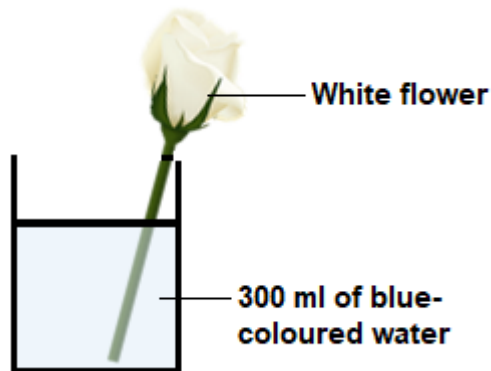
Clue 1: I am an arboreal animal.

Clue 2: My hair and scales prevent me from slipping from the trees.

Who am I?

- a. Bat
b. Camel
c. Crocodile
d. Flying squirrel

15. Lina set up the experiment shown below. She placed a white flower in a beaker with 300 ml of blue coloured water at the start of the experiment. What will she observe after 8 hours?



- a. Amount of water left in beaker – 300 ml
Colour of flower – White
- b. Amount of water left in beaker – 300 ml
Colour of flower – Blue
- c. Amount of water left in beaker – 280 ml
Colour of flower – White
- d. Amount of water left in beaker – 280 ml
Colour of flower – Blue

16. The Milky Way galaxy is described as a disk of stars orbiting a central point on the disk. Which of this best explains why people on Earth cannot see the entire shape of the Milky Way?

- a. Earth is a part of this galaxy.
- b. The stars in the centre of the galaxy are extremely small.
- c. Many more stars exist outside the galaxy.
- d. The centre of the galaxy consists of a dense cluster of stars.

17. What is common amongst the below – given substances?

Salt water, Air and Blood

- a. These substances are called colloids.
- b. These substances are called compounds.
- c. Substances are not evenly distributed throughout the mixture.
- d. Substances are evenly distributed throughout the mixture.

18. Rita wrote three statements in her notebook:

1. Some organisms such as millipedes and centipedes, living in the soil, are harmful as they destroy roots of plants.
2. Earthworms are called farmer's friends because they feed on dead remains of plants and animals.
3. Topsoil, subsoil and parent rock are different layers of soil.

Which of the above statement(s) is/are false?

- | | |
|---------------------|-------------------------|
| a. Statement 1 only | b. Statement 2 only |
| c. Statement 3 only | d. All three statements |

19. Which statement best describes the roles of snow and rain in the water cycle?

- a. They are both precipitations, but snow generally evaporates more quickly.
- b. They are both precipitations, but snow generally takes longer to run off and rejoin groundwater.
- c. Rain is precipitation but snow is a condensate, so they occupy different positions in the water cycle.
- d. Snow is precipitation but rain is a product of transpiration, so they occupy different positions in the water cycle.

20. If a helicopter loses engine power at a sufficient height and speed, it is able to auto rotate to the ground, extracting energy from the air and, sometimes, landing safely. In this case, gravitational potential energy is converted into what type of energy?

1. Kinetic energy
2. Rotational energy
3. Rotational kinetic energy
4. Potential energy

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

21. Consider the following clues and identify the joint:

Clue 1: These joints are present between the tarsals in the ankles and between the carpals in the wrists.

Clue 2: In the wrist, this type of joint allows the hand to bend upward at the wrist and also to wave from side to side while the lower arm is held steady.

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

22. Which of the following actions will help to reduce pollution?

1. Using sewers and treatment plants to remove human waste.
2. Restricting smoking in public to designated areas.
3. Spraying pesticides on plants to kill pests.

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

23. In the pictures given below we can see the seeds of martynia and xanthium. Identify the agent of seed dispersal from the given options:



- a. Wind
b. Animals/Birds
c. Water
d. Fruits burst with a sudden jerk

24. Select the incorrect pair(s) from the following:

1. Venus – Morning or evening star
2. Saturn – Coldest planet
3. Jupiter – Largest planet
4. Mercury – Smallest planet

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

25. Read the statement given below and identify X:

When the moon comes between the Sun and the Earth and casts the darkest part of its shadow on Earth, it is called 'X'.

- a. Partial solar eclipse
b. Total solar eclipse
c. Lunar eclipse
d. Constellation

26. Which of the following activities will help to reduce non-biodegradable wastes?

1. Use cloth napkins instead of disposable napkins.
2. Old worn-out clothes made into cushion covers.
3. Old mixer grinder given to maidservant for home purpose.
4. Old newspapers used for packaging.

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

- 27.** Consider the following clues and identify the celestial body:
Clue 1: A rocky space object that can be a few feet wide to several hundred miles wide.
Clue 2: These are small, rocky objects that orbit the Sun.
Clue 3: Most of these in our solar system orbit in a belt between Mars and Jupiter.

- a. Asteroid
- b. Comet
- c. Planet
- d. Star

- 28.** Communicable diseases pass from one person to another through different modes of transmission. Which of the following disease cannot spread through the mode of transmission as shown in the figure below?



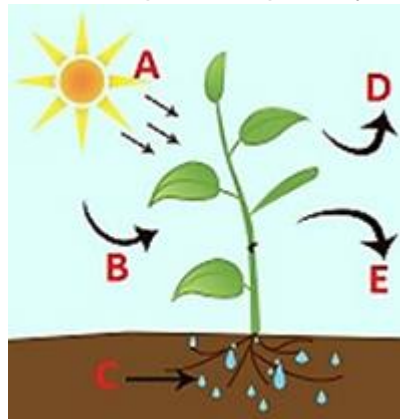
- a. Scurvy
- b. Influenza
- c. Diphtheria
- d. Chicken-pox

- 29.** Given below are two plants namely pitcher plant and Venus fly trap. What is the similarity between these two plants?



- a. Both these plants are decomposers.
 - b. Both these plants grow underwater.
 - c. Both these plants eat insects to get nutrition.
 - d. Both these plants grow in the marshy areas.
- 30.** When a volcano erupts, a lot of ash can enter the air. The ash in the air may block sunlight for a long time. Which organisms would most likely be affected first when this happens?
- a. Parasite
 - b. Consumer
 - c. Decomposer
 - d. Producer

31. Observe the figure given below carefully.
Identify A, B and D, which are required for photosynthesis:

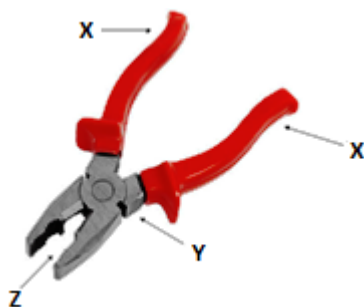


- a. A – Sunlight, B – Carbon dioxide, D – Oxygen
 b. A – Water, B – Carbon dioxide, D – Sunlight
 c. A – Sunlight, B – Oxygen, D – Minerals
 d. A – Sunlight, B – Oxygen, D – Soil
32. Which of the following statements is/are true about what takes place in the small intestine?
- A. Digested food is carried by the blood to all parts of the body.
 B. Digestion is completed here.
 C. Water is removed from the undigested food.
- a. A only
 b. B only
 c. A and B only
 d. A, B and C
33. Which of the following characteristic feature is not that of a frog?
1. They use their lungs to breathe when on land.
 2. They move in water with the help of their paddle – like limbs.
 3. They swim with the help of their webbed feet.
 4. They have a long and sticky tongue used to catch insects.
 5. They absorb oxygen from the water through their moist skin.
- a. 3 only
 b. 2 only
 c. Both 1 and 3
 d. Both 4 and 5
34. Read the clues given below and identify the planet correctly:
 Clue 1: It was first observed by Galileo.
 Clue 2: It is the brightest and hottest planet, because it has atmosphere to trap the sun's light making it hottest and it is called as the morning and evening star.
 Clue 3: It rotates on its axis very slowly but it revolves around the sun fast.
- a. Mars
 b. Earth
 c. Saturn
 d. Venus

35. Which of the following force does an archer apply to stretch the bow, while aiming at the target?

- a. Magnetic force
- b. Gravitational force
- c. Frictional force
- d. Muscular force

36. Clearly observe the placement of X, Y and Z in the example of pliers as shown in the image below. Label X, Y and Z correctly:



- a. X – Effort, Y – Load, Z – Fulcrum
- b. X – Effort, Y – Fulcrum, Z – Load
- c. X – Load, Y – Effort, Z – Fulcrum
- d. X – Fulcrum, Y – Effort, Z – Load

37. A place X has drought for a long period of time. Which statement is true with context to drought?

- a. The water table gets higher because of continuous evaporation.
- b. The water table gets lower because of continuous evaporation and flow.
- c. The place gets replenished continuously.
- d. The water table remains the same.

38. Match the following:

Planets	Moons
1. Saturn	(i) Titania
2. Neptune	(ii) Phobos
3. Uranus	(iii) Titan
4. Mars	(iv) Ganymede
5. Jupiter	(v) Triton

- a. 1 – iv, 2 – iii, 3 – ii, 4 – i, 5 – v
- b. 1 – iv, 2 – i, 3 – ii, 4 – v, 5 – iii
- c. 1 – iii, 2 – v, 3 – i, 4 – ii, 5 – iv
- d. 1 – v, 2 – iii, 3 – ii, 4 – i, 5 – iv

39. In a water treatment plant, chlorination is done. What could be the reason for the chlorination?

- a. To remove larger particles of solid impurities
- b. To remove smaller particles of solid impurities
- c. To kill germs
- d. To remove sand particles

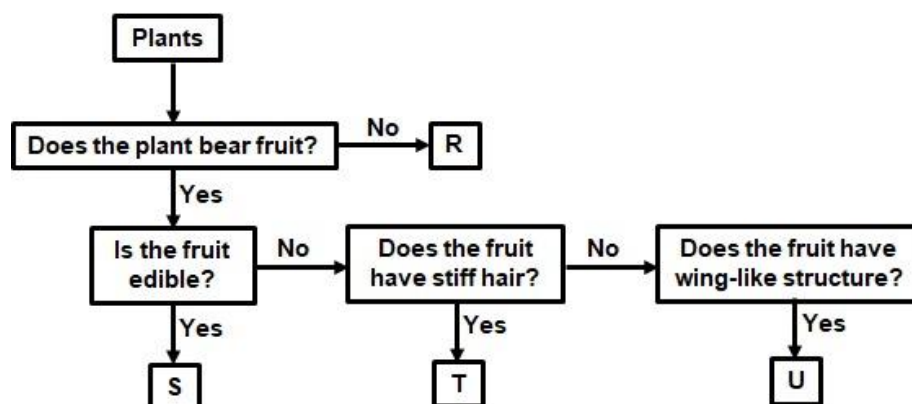
40. Read the following statements and choose the correct option:
1. Over-grazing promotes soil erosion.
 2. Sun is the origin of energy that drives the water cycle.
- a. Statement 1 is correct and statement 2 is incorrect
 - b. Statement 1 is incorrect and statement 2 is correct
 - c. Both the statements are correct
 - d. Both the statements are incorrect

Achiever's Section (Each Question is 2 Marks)

41. Which of the following diseases are caused by bacteria?
1. Ringworm
 2. Plague
 3. Malaria
 4. Typhoid
 5. Athlete's foot
 6. Chickenpox
- a. 2 and 4
 - b. 1 and 3
 - c. 5 and 6
 - d. 3 and 6

42. Read the statements given below and correctly identify P and Q:
 P is the process of heating a solution containing soluble solids to form vapours of the liquid and then cooling the vapours to get the liquid back.
 Q is the process by which the insoluble solids can be removed from a liquid by using a filter paper.
- a. P – Decantation, Q – Filtration
 - b. P – Distillation, Q – Filtration
 - c. P – Sedimentation, Q – Evaporation
 - d. P – Filtration, Q – Evaporation

43. Study the flow chart below. Based on the information above, which plant most likely disperses its fruit by animals?

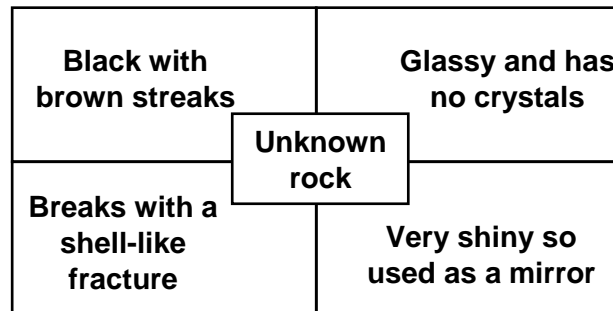


- a. R only
- b. S only
- c. S and T only
- d. T and U only

- 44.** Read the statements and select the correct ones:
- Frogs and fishes lay their eggs on land in a safe place and take care of their babies.
 - The eggs of frog hatch into tailed larvae called nymph.
 - The tadpole grows and slowly changes into an adult frog.
- Only ii
 - Only iii
 - Both i and iii
 - Both i, ii and iii

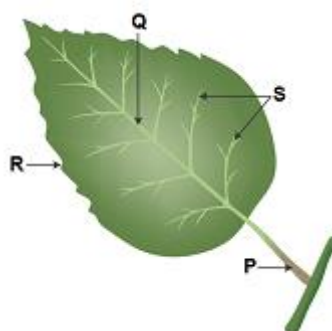
- 45.** Read the passage below and identify X correctly:
 The life cycle of 'X' is divided into four stages: (1) egg, (2) larva, (3) pupa and (4) adult. At each stage, the 'X' appearance changes completely. The young one that hatches from the egg is called a larva. The larva of 'X' is called a maggot.
- Cockroach
 - Butterfly
 - Grasshopper
 - Housefly

- 46.** Based on the given data about an unknown igneous rock, which of the following can be the unknown rock?



- Marble
 - Obsidian
 - Shale
 - Limestone
- 47.** Samarth kept a bottle filled with water in the freezer. After a few hours, he was thirsty and he took out the bottle to drink water. He found that water has changed into ice (Process 1). He left aside the bottle and after some time, he noticed that the ice in the bottle has changed to water again (Process 2). Identify the change that has taken place in the above two processes:
- 1 – Chemical change, 2 – Physical change
 - 1 – Physical change, 2 – Chemical change
 - 1 – Permanent change, 2 – Physical change
 - 1 – Physical change, 2 – Physical change

48. Study the given figure and select the correct option for labels P, Q, R and S:



- a. P – Lamina, Q – Petiole, R – Midrib, S – Veins
- b. P – Lamina, Q – Veins, R – Petiole, S – Midrib
- c. P – Petiole, Q – Midrib, R – Lamina, S – Veins
- d. P – Petiole, Q – Midrib, R – Veins, S – Lamina

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

- 1. A shooting star is a star.
 - 2. The four planets in the outer solar system are made of rock and metal.
 - 3. Ursa Major constellation appears to revolve around the pole star in the night sky.
- a. 2 only
 - b. 3 only
 - c. 1 and 3 only
 - d. 2 and 3 only

50. Choose the option that correctly represents the energy changes taking place in the following cases:

- 1. Television
 - 2. Electric blender
 - 3. Toy car moving down a ramp
- a. 1: Electrical energy into light energy, sound energy
2: Electrical energy into kinetic energy, sound energy
3: Potential energy to kinetic energy
 - b. 1: Potential energy into electrical energy, sound energy and heat energy
2: Kinetic energy into electrical energy, heat energy and sound energy
3: Potential energy to heat energy and sound energy
 - c. 1: Sound energy into electrical energy, sound energy and heat energy
2: Potential energy into electrical energy, heat energy and sound energy
3: Potential energy to heat energy and sound energy
 - d. 1: Sound energy into mechanical energy, potential energy and heat energy
2: Potential energy into electrical energy, heat energy and light energy
3: Mechanical energy to heat energy and sound energy

Answer Key

1. c 2. a 3. d 4. b 5. a 6. a 7. b 8. a 9. c 10.b
11. d 12. d 13.a 14. d 15. d 16. a 17.d 18.c 19. b 20.c
21. a 22. c 23.b 24. d 25. b 26. d 27.a 28.a 29. c 30.d
31. a 32. c 33.b 34. d 35. d 36. b 37.b 38.c 39. c 40.c
41. a 42. b 43.c 44. b 45. d 46. b 47.d 48.c 49. b 50.a