



CREST Science Olympiad (CSO)

Previous Year Paper (2022-23)

Class 6 (Set - A)

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 a total of **50 questions** in this booklet comprising **2 sections** 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 / Ball point pen (Blue / Black) 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, digital watches, etc. inside the examination hall.
- The use of unfair means may result in the cancellation of the exam. Any such instances must be reported at **+91-98182-94134** or **info@crestolympiads.com**

DO NOT OPEN THIS BOOKLET UNTIL ASKED TO DO SO

FILL IN THE DETAILS

Candidate Name: _____

Class: _____ Section: _____

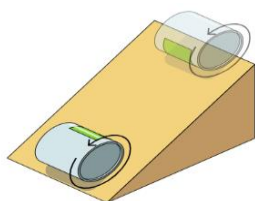
CREST ID: _____

Practical Science (Each Question is 1 Mark)

1. Milk turning sour is what kind of change?

a. Irreversible chemical change
b. Reversible physical change
c. Irreversible physical change
d. Reversible chemical change

2. A can rolls down a slope. Which of the following types of motion is the motion of the can an example of?



a. Periodic motion
b. Rolling motion
c. Circulatory motion
d. Translational motion

3. Which statement is not true about opaque substances?

a. Opaque substances transmit most of the light falling on them.
b. We cannot see objects through opaque substances.
c. A mirror is an opaque substance.
d. Opaque substances reflect most of the light falling on them.

4. Four students have the following mixtures:

Kate: Red chilli powder + water

Richard: Butter + water

Peter: Petrol + water

Tom: Honey + water

Whose mixture is in solution form?

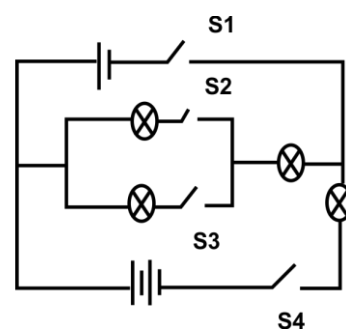
a. Kate b. Richard
c. Peter d. Tom

5. Choose the correct option:

A particle moved 20 m towards the east and then moved 20 m towards the north. The magnitude of the displacement and the total distance covered are _____ and _____, respectively.

a. $20\sqrt{2}$ m, 40 m
b. $\sqrt{20}$ m, 40 m
c. 40 m, $20\sqrt{2}$ m
d. 20 m, 40 m

6. In the circuit below, the bulbs and batteries are working properly. Which one of the following shows the correct number of bulbs lit when the respective switches are closed?



a. Switches closed: S1 and S4
No of bulbs lit: 4
b. Switches closed: S2 and S3
No of bulbs lit: 4
c. Switches closed: S2 and S4
No of bulbs lit: 4
d. Switches closed: S3 and S4
No of bulbs lit: 3

7. Harry went to his office from his house in his car with a uniform speed of 60 km/h and returns to his house at a different speed following the same route. If the average speed of the car for the whole journey is 50 km/h, find the speed of his car when it travelled from office to house:

a. 42.86 km/h b. 67.98 km/h
c. 29.89 km/h d. 23.89 km/h

8. Match the following:

	Column I		Column II
1.	Fish	a.	Stomata
2.	Whales	b.	Lungs
3.	Plants	c.	Skin
4.	Earthworm	d.	Gills

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

9. Identify the incorrect statement(s):

- The fur on the body of camels is also used as wool.
- The fleece of the sheep along with a thin layer of skin is removed from its body.
- Sheep are selectively bred with one parent being a sheep of a good breed.

- Only 1
- Only 2
- 1, 2 and 3
- None of these

10. The table shows the characteristics of a fibre 'X':

Test to identify fibres	Observation
On burning	Burn with a smell like burnt hair
Residue	Dull black hollow bead which crushes easily to black powder

Identify 'X':

- Polyester
- Cotton
- Wool
- Nylon

11. Choose the incorrect statement.

- The colour of the image formed by plane mirror is not the same as the object.
- Lateral inversion is when the right of the object appears left of the image.
- Air neither absorbs nor reflects light, hence not visible.
- A virtual image is obtained by a plane mirror.

12. Which of the following is the correct method of storing bar magnets?

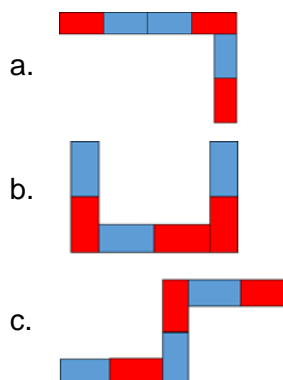
- A piece of wood is placed in between a pair of bar magnets.
- Bar magnets should be kept in pairs with their unlike poles on the same side.
- Iron pieces should be placed across the ends of a bar magnet.

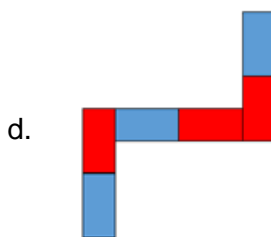
- Only 1
- Only 2
- Both 2 and 3
- 1, 2 and 3

13. Which of the following is a correct example of chemical change?

- Mixing of red and green marbles
- Chopping of wood
- Explosion of fireworks
- Sublimation of dry ice

14. Figures given below show the arrangement of three bar magnets. Which arrangement is possible?





15. Study the table given below and answer the question that follows:

P	Q	R	S	T
Mirror	Compact disk	Ice	Sun	Moon
Wood	Carbon paper	Fog	Lighted candle	Asteroids
Mirror	Optical cable	Smoke	Firefly	Earth

The column 'P' has-

- All translucent objects.
- All transparent objects.
- All opaque objects.
- Both luminous and non-luminous objects.

16. Match the following:

	Column I		Column II
A	The pattern of veins on the leaf	(i)	Pistil
B	The inner most part of the flower	(ii)	Lamina
C	The board green part of the leaf	(iii)	Venation
D	The tip of a leaf	(iv)	Apex

- A-iii, B-i, C-iv, D-ii
- A-iv, B-i, C-iii, D-ii
- A-iii, B-i, C-ii, D-iv
- A-i, B-ii, C-iv, D-iii

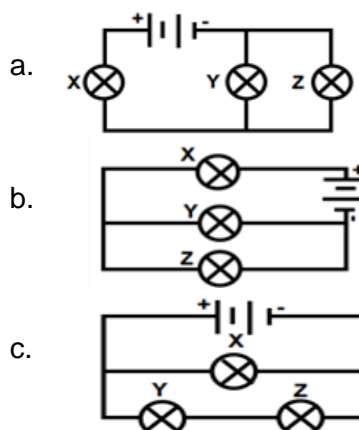
17. Analyze the cross-section of a flower given below to complete the incomplete sentences.

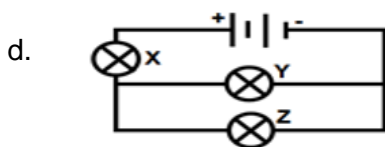
The swollen part of the pistil is the ___(i)___ which bears ___(ii)___. The stamen is made up of ___(iii)___ and ___(iv)___.

Select the correct words from the given option to fill in the blanks:

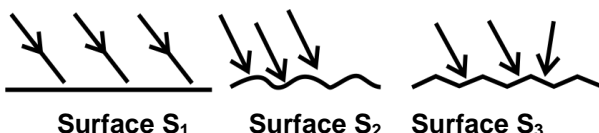


- i-anther, ii-ovary, iii-ovules, iv-filament
 - i-ovary, ii-ovules, iii-filament, iv-anther
 - i-filament, ii-anther, iii-ovary, iv-stigma
 - i-ovaries, ii-filament, iii-anther, iv-ovule
18. A student has a 15 cm long magnetised iron strip. He cuts it into three parts of 4 cm, 5 cm and 6 cm in length. He tested each part and observed that:
- All parts behave as a complete magnet.
 - 4 cm long part loses its magnetised and 6 cm long part behaves like a complete magnet.
 - Only 5 cm long part behaves like a magnet.
 - 4 cm long part behaves as the South pole while 6 cm long part behaves as the North pole.
19. Study the diagrams below carefully. In which circuit will at least one bulb remain lit if the bulb marked X blows?





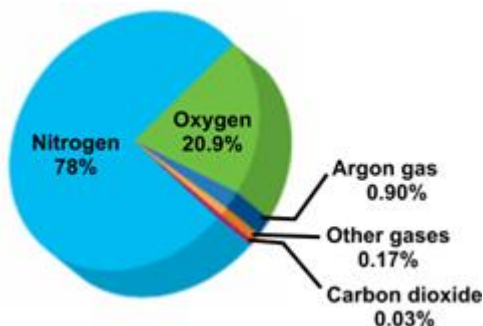
20. Light is falling on the surfaces S_1 , S_2 and S_3 as shown below:
The surface on which the angle of incidences is equal to the angle of reflection are:



- S_1 and S_2
 - S_2 and S_3
 - S_1 and S_3
 - All the three surfaces
21. There are many methods to measure the length of an object. How can you accurately measure the length of this object?



- Using hand span
 - Using a metre scale
 - Using a thread and scale
 - Using a measuring tape
22. The pie chart represents the composition of various gases present in our atmosphere. One of the mentioned gases supports burning. Which is that gas?



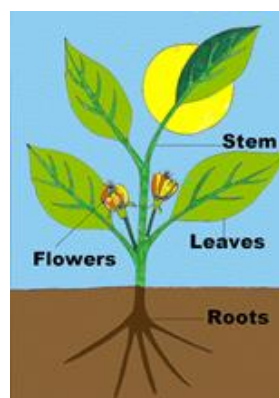
- Nitrogen
- Oxygen
- Argon
- Carbon dioxide

23. Which of the following is not in uniform motion?

- A bullet travelling with constant speed in a straight line.
- A swinging pendulum
- The rotation of the earth about its axis.

- Only 1
- Only 2
- Both 1 and 2
- Both 2 and 3

24. The four different parts of a plant are mentioned in the figure. Generally, the intake and transport of water and minerals throughout the plant take place by one or more parts of the plant. Which of the following part of the plant is not responsible for the transportation of water?



- Roots
- Flowers
- Leaves
- Stem

25. Arya prepared a fresh solution of sodium hydroxide in a test tube. She dropped a small piece of aluminium foil into it and then brought a burning matchstick near the mouth of the test tube. She hears a pop sound. The pop sound indicates the presence of which of the following gas?

- Water gas
- Oxygen gas
- Hydrogen gas
- Aluminium gas

26. Which of the following statements is true about image formation in a plane mirror?

- I. The image is larger in size than the object.
- II. The image is formed at the same distance as the object.
- III. The image is laterally inverted.
- IV. The image is virtual.

- a. I, II and III b. I, II, III and IV
- c. II, III and IV d. I, III and IV

27. When water was added to white coloured anhydrous copper sulphate, it turned blue. Is this a reversible change and if yes, how can you reverse it?

- a. Copper sulphate can be sublimed to bring back the white colour.
- b. Copper sulphate can be heated to bring back the white colour.
- c. The addition of more water can make the copper sulphate white again.
- d. The process is irreversible.

28. The electric bulb works on the heating effect of electric current. Which among the following could be used to make a filament?

- a. The metal with high resistance.
- b. The metal with low resistance.
- c. The non-metal with high resistance.
- d. The non-metal with low resistance.

29. The heating effect, magnetic effect and chemical effect are some of the properties of electric current. Which among the following appliances do not work on the heating effect of electric current?

- a. Electric bulb b. Electric heater
- c. Electric bell d. All of the above

30. A potter was using clay to make pots. In the following situations, identify the type of change:

- 1. The potter shapes the wet clay into a pot.
- 2. The pot is then baked or heated to harden the clay.

- a. 1 and 2 are reversible changes.
- b. 1 is a reversible change, 2 is an irreversible change.
- c. 1 is an irreversible change, 2 is a reversible change.
- d. 1 and 2 are irreversible changes.

31. Iron rim is made slightly smaller than the wooden wheel. The rim is usually heated before fixing into the wooden wheel, because on heating the iron rim:

- 1. expands and fits onto the wooden wheel
- 2. contracts and fits onto the wooden wheel
- 3. no change in the size takes place
- 4. expands first, then on cooling contracts and fits onto the wooden wheel

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

32. Many changes occur repeatedly at a particular time interval and hence can be classified as reversible changes. Which among the following can be classified as an irreversible change?

- a. Dissolution of sugar
- b. Changing phases of water
- c. Changing of seasons
- d. Growth of a tree

33. An electrician wears plastic gloves while he is repairing a transformer. What is the reason behind it?

- a. Plastic is good conductor of electricity.

- b. Plastic does not get damage easily.
- c. Plastic is poor conductor of electricity.
- d. Plastic does not get wet easily.

34. Robert took some powdered pulse in a test tube. He added 10 drops of water and shook well. Then he added 2 drops of copper sulphate solution and 10 drops of caustic soda. He again shook the test tube well and left it undisturbed.

What colour will he observe in the test tube? Which component of food is identified by this activity?

- a. Blue black colour and starch
- b. Red colour and vitamins
- c. Violet colour and protein
- d. Oily patches and fats

35. A gas X is an active component of air. It reacts with carbon to form a gas Y. Y is one of the product of two major processes _____ and _____.

- a. respiration and combustion
- b. photosynthesis and respiration
- c. combustion and photosynthesis
- d. photosynthesis and transpiration

36. Olivia tries to pull out a grass plant and a rose plant from the soil. She could easily pull the grass but she needed more effort to pull the rose plant. What is the reason behind this?

- a. Rose plant has fibrous root whereas grass has a taproot.
- b. Grass and rose plants have taproot systems.
- c. Rose plant has a taproot whereas grass has a fibrous root.
- d. Grass and rose plants have fibrous root systems.

37. David dipped a bar magnet in a bowl of iron filings. Which of the following will he observe?

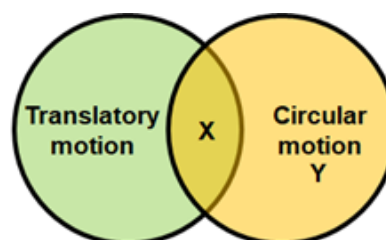
- a. The iron fillings attracted to the north pole of the bar magnet is much more than that attracted by the south pole.
- b. The iron fillings attracted by the bar magnet will be the same all along its length.
- c. The iron fillings attracted to the north pole of the bar magnet are equal to that attracted by the south pole.
- d. The iron fillings attracted to the north pole of the bar magnet are much less than that attracted by the south pole.

38. The diagram below shows a compass. Which of the following statements about the compass is false?



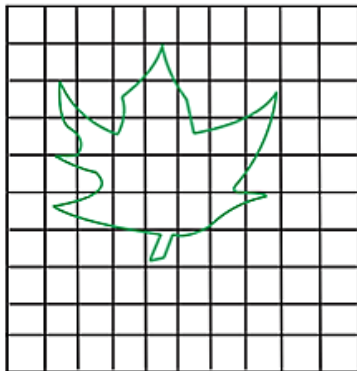
- a. The north pole of the needle points to the geographic south pole of the earth.
- b. The needle is actually a freely-suspended magnet.
- c. The north pole of the needle points to the south pole of the earth's magnet.
- d. The south pole of the needle points to the north pole of the earth's magnet.

39. Identify X and Y in the given Venn diagram and select the correct option:



- a. X - Drilling a hole in a piece of wood
- b. Y - Motion of a pendulum
- c. X - Motion of a fan blade
- d. Y - March-past of the soldier in a parade

40. John took a 2 cm grid of graph paper to measure the area of a leaf as shown above. Which of the following is the correct formula to calculate the area of leaf?



- a. Area of leaf = $\frac{1}{2}$ Number of complete squares + $\frac{1}{2}$ Number of incomplete squares.
- b. Area of leaf = Number of complete squares + Number of incomplete squares.
- c. Area of leaf = Number of complete squares + $\frac{1}{2}$ Number of incomplete squares.
- d. Area of leaf = $\frac{1}{2}$ Number of complete squares + Number of incomplete squares.

Achievers' Section (Each Question is 2 Marks)

41. Which of the following statement about autotrophs is incorrect?
- a. They synthesize carbohydrates from carbon dioxide and water.
 - b. They store carbohydrates in the form of starch.
 - c. They convert water and CO₂ into carbohydrate only in the absence of light.
 - d. They constitute the first trophic level in the food chain.

42. The table below shows sources and functions caused by some vitamins and minerals.

Vitamin/ Mineral	Source	Function
Vitamin-C	Oranges, lemons and grapes	Makes skin and gums healthy and heal wounds quickly

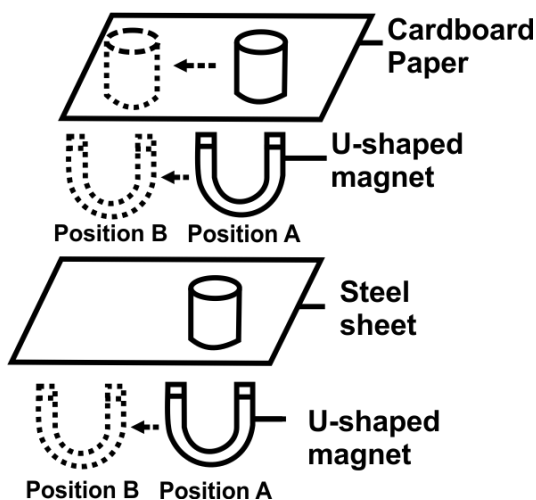
Vitamin-D	Milk, butter, eggs, fish and liver	Makes bones and teeth strong
Calcium	Milk and eggs	Makes bones and teeth strong
Phosphorus	Milk, apples, beans, dry fruits and pulses	Helps in the body development and makes children strong, helps in the digestion of food

Which one of the following statements is correct?

- a. Vitamin-C is needed for strong bones.
- b. Scurvy is caused due to deficiency of phosphorus.

- c. Deficiency of vitamin-C and phosphorus causes Beri-beri.
- d. Deficiency of vitamin-D and calcium causes rickets.

43. Kevin placed a metal cylinder on a piece of cardboard paper. He then held a U-shaped magnet under the cardboard paper as shown below. He moved the magnet from position A to B. He observed that the cylinder moved in the same direction when the magnet was moved. Kevin removed the cardboard paper and replaced it with a steel sheet. Once again, he brought the magnet under the sheet and moved it from position A to B. This time, the metal cylinder did not move along with the magnet. Which of the following correctly explains what happened in Kevin's second experiment?



- a. One of the poles of the U-shaped magnet repelled the steel sheet.
- b. The cylinder was not made of a magnetic material.
- c. The steel sheet repelled the cylinder.
- d. The steel sheet prevented magnetic attraction.

44. A student experimented on a burning candle by placing a glass slide above the flame of the candle. After some time, the portion of the glass slide that

the flame touched turns black. What does this signify?



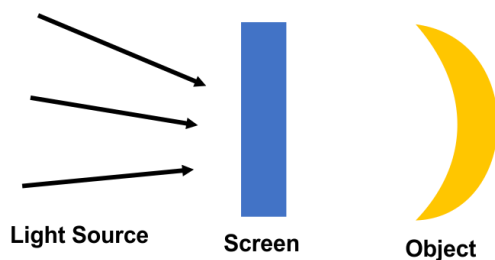
- a. The deposition of unburnt carbon particles present in the luminous zone of the flame.
- b. The deposition of unburnt carbon particles present in the non-luminous zone of the flame.
- c. The deposition of burnt oxygen particles present in the non-luminous zone of the flame.
- d. The deposition of unburnt nitrogen particles present in the luminous zone of the flame.

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

1. During centrifugation, denser particles settle down to the bottom of the container and lighter particles stay at the top when they are agitated.
2. A mixture of wheat, sugar and stalk are separated by winnowing and followed by sieving.
3. Camphor can be separated from a mixture of sand and camphor by cooling.

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

46. Look carefully at the given picture. Choose the correct option regarding the shadow formed by the object:



- The shadow formed will be crescent-shaped.
- The shadow formed will be straight line.
- The shadow formed will have a single spot.
- No shadow will be formed.

47. Consider the following groups:
 Group A (Fibres): Jute, Nylon, Leather, Wool
 Group B (Properties of nylon): Lightweight, strong, absorb water, wrinkle-free
 In the above-mentioned groups, which of the following member is an exception to it?

- Group A: Wool, Group B: Light weight
- Group A: Leather, Group B: Absorb water
- Group A: Nylon, Group B: Strong
- Group A: Jute, Group B: Wrinkle-free

48. Following are the steps taken to perform an experiment;

- Two test tubes were taken and labelled A and B.
- In test tube A, one teaspoon full of boiled rice was kept.
- In test tube B, one teaspoon full of boiled rice which was chewed for 3-5 minutes was kept.
- 3-4 ml of water was added to both tubes.
- Then 2-3 drops of iodine solution were added to both test tubes A and B.

Which of the following observation is most likely to be correct?

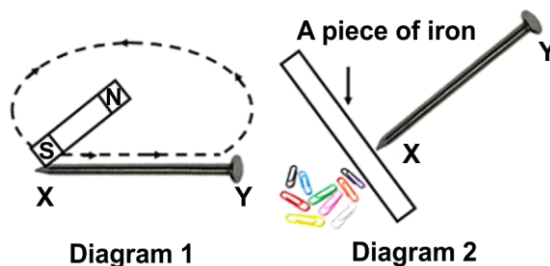
- Test tube B shows blue-black colour whereas test tube A does not show this colour.
- Test tube A shows a blue-black colour whereas test tube B does not show this colour.
- Test tube A and B both show a blue-black colour.
- Test tube A and B both show a red-orange colour.

49. A student had a ball, a screen and a torch in working condition. He tried to form a shadow of the ball on the screen by placing them at different positions. Sometimes the shadow was not obtained. Which of the following can be the reason for the same?

- The screen is far away from the ball.
- The beam of light from the torch is falling parallel to the screen on the ball.
- The torch is kept away from the ball.

- Only 1
- Only 2
- Only 3
- 1, 2 and 3

50. Pauline stroked the entire length of iron with a bar magnet in the same direction as shown in diagram 1. After, she held the iron nail above a piece of iron and some paperclips as shown in diagram 2. What will happen to the paper clips in diagram 2?



- a. The paperclips will move away from the iron nail
- b. The paperclips will be attracted to the iron nail
- c. The paperclips will slide along the piece of iron
- d. The paperclips will remain in the same place

Answer Key

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