



OLYMPIAD Mock Test

1

Name : _____

Max. Marks : 50

Number of Questions : 50

Time : 2 Hours

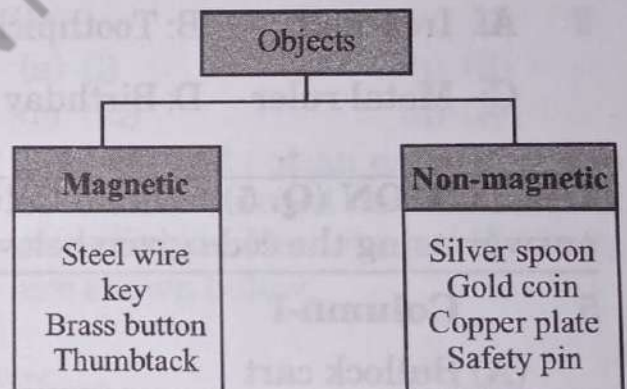
There is no negative marking in the test.

PHYSICS

1. A light bulb is connected in series with a battery, a switch and some wires. However, the light bulb does not light up. What is/are the possible reason(s)?

- A. The battery is weak.
 - B. The switch is closed.
 - C. The bulb has blown.
 - D. The wires are made of copper.
- (a) A only
(b) A and C only
(c) B and D only
(d) B, C and D only

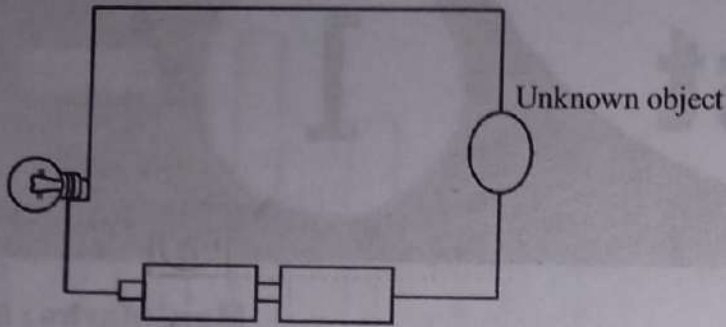
2. Study the classification chart below.



Which of the above have been wrongly classified?

- (a) Key and copper plate
- (b) Thumbtack and safety pin
- (c) Steel wire and silver spoon
- (d) Brass button and safety pin

3. Study the circuit given.

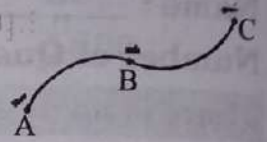


Which of the following objects when placed in the circuit at the position shown would result in the bulb lighting up ?

- A: Iron nail B: Toothpick
C: Metal ruler D: Birthday card

- (a) B only
(b) A and C only
(c) C and D only
(d) A, B and D only

4. An ant moves as shown in the diagram. Which of the following can be used to determine the distance covered by that ant?



- (a) A 15 cm scale and a meter scale
(b) A meter scale
(c) Hand span and a meter scale
(d) Thread and a meter scale

DIRECTION (Q. 5) : Match Column-I with Column-II and select the correct answer using the code given below the columns.

5. **Column-I**

Column-II

- | | |
|--------------------------------|-------------------------------------|
| (A) Bullock cart | (p) Modern means of transport |
| (B) Space craft | (q) Ancient unit of length |
| (C) Width of finger | (r) Ancient means of transport |
| (D) Metric system | (s) Developed in 1790 by the French |
| (a) A→(p); B→(q); C→(r); D→(s) | (b) A→(r); B→(p); C→(q); D→(s) |
| (c) A→(r); B→(p); C→(s); D→(q) | (d) A→(q); B→(r); C→(p); D→(s) |

Liquid	Light bulb
Pure water	Did not light up
Mercury	Bright light
Lemon Juice	Dim light
Tap water	Bright light

Which of the liquids is an insulator of electricity?

- (a) Pure water (b) Mercury
(c) Lemon juice (d) Tap water

DIRECTION (Q. 12) : *The questions in this segment consists of two statements, one labelled as "Assertion A" and the other labelled as "Reason R". You are to examine these two statements carefully and decide if the Assertion A and Reason R are individually true and if so, whether the reason is a correct explanation of the assertion. Select your answers to these questions using codes given below.*

- (a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is not the correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

12. **Assertion (A) :** Solar and lunar eclipses are results of shadow formation.

Reason (R) : Sun is essential for shadow formation.

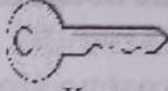



13. Choose the incorrect statement.

- (a) A switch is the source of electric current in a circuit.
(b) A switch help to complete or break the circuit.
(c) A switch helps us to use electricity as per our requirement.
(d) When the switch is open there is an air gap between its terminals.

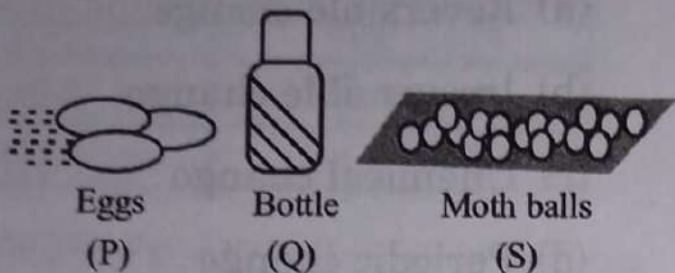
14. A bar magnet is immersed in a heap of iron filings and pulled out. The amount of iron filling clinging to the

- (a) North pole is almost equal to the south pole.
(b) North pole is much more than the south pole.
(c) North pole is much less than the south pole.
(d) Magnet will be same all along its length.

CHEMISTRY

15. Select the fibre that is obtained from a plant source.
- Wool
 - Silk
 - Cotton
 - Both silk and cotton
16. What name has been given to the solution in which no more substance can be dissolved at the given temperature?
- Saturated solution
 - Unsaturated solution
 - Diluted solution
 - All of these
17. Pliers used by electrician usually have plastic cover on the handle. Why?
- Plastic is a bad conductor of heat
 - Plastic is a water resistant
 - Plastic is a bad conductor of electricity
 - All of these
18. Melting of coal tar on heating is an example of :
- Reversible change
 - Irreversible change
 - Chemical change
 - Periodic change
19. Observe the picture of objects given below carefully. Which one of the following objects will float in water?
- (a)  Key
- (b)  Coin
- (c)  Stone
- (d)  Disposable cups
20. In which one of the following kind of changes, molecules of substance undergo changes?
- Physical changes
 - Chemical changes
 - Reversible changes
 - All of these

21. Three substances given below were kept in the open for a few days and some changes were observed.



Which of the substances will show chemical changes?

- (a) Eggs.
- (b) Plastic bottle.
- (c) Both eggs & moth balls.
- (d) All eggs, plastic bottle and moth balls.

22. In a pressure-kerosene stove—

- (i) We pump kerosene and convert it into vapours.
- (ii) The vapours are then ignited.

Which of the following option is correct about the above statements?

- (a) (i) is a chemical change;
(ii) is a physical change.
- (b) (i) is a physical change;
(ii) is a chemical change.
- (c) (i) and (ii) both are physical changes.
- (d) (i) and (ii) both are chemical changes.

23. Which of the following statement is correct for nitrogen gas?

- (a) It supports combustion.
- (b) It burns itself.
- (c) It regulates burning in atmosphere.
- (d) It is harmful.

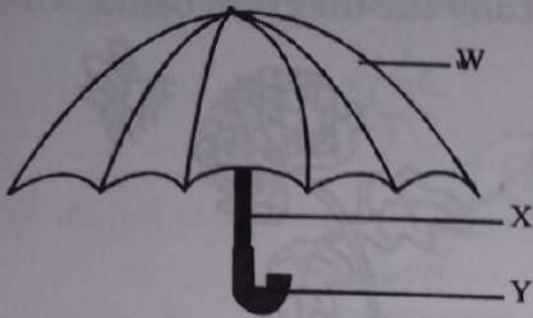
24. What happens as one goes up in the atmosphere?

- (a) The amount of nitrogen in air increases.
- (b) The amount of oxygen in air decreases.
- (c) Air becomes denser.
- (d) One feels lighter.

25. Which of the following statements is correct for aquatic plants and animals?

- (a) They use the oxygen dissolved in water to breathe.
- (b) They have to come out of water to breathe.
- (c) They breathe through the water.
- (d) They use carbon dioxide dissolved in water to breathe.

26. Study the diagram below.



Which of the following combinations is the best choice for making the object above?

	W	X	Y
(a)	Cloth	Rubber	Metal
(b)	Paper	Rubber	Metal
(c)	Plastics	Metal	Wood
(d)	Plastics	Wood	Cloth

27. Divya accidentally dropped a glass plate on the floor and it broke into many smaller pieces. She replaced the glass plate with a plastic plate which does not break when dropped. Which of the following properties is shown by the glass?

- (a) Flexibility
- (b) Brittleness
- (c) Hardness
- (d) Degree of transparency

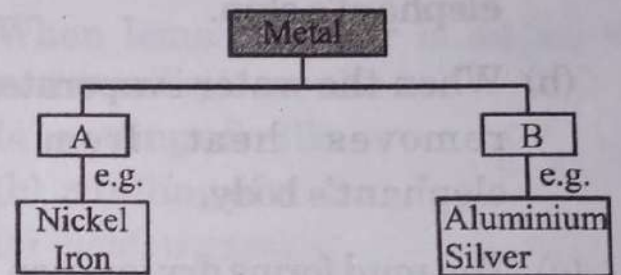
28. The properties of different types of materials were tested and the results are shown in the table below.

Property	Material P	Material Q	Material R	Material S
Strong	✓	✓	✗	✗
Flexible	✗	✗	✓	✗
Lightweight	✗	✓	✓	✗
Waterproof	✗	✓	✓	✓

Ravi needs to choose a suitable material to make a container that can hold 10L of water. Which material should he choose?

- (a) Material P
- (b) Material Q
- (c) Material R
- (d) Material S

29. Study the classification chart below.



Which of the following shows the property by which the metals are classified in the above chart?

- (a) Heat conductivity
- (b) Magnetic property
- (c) Electrical conductivity
- (d) Ability to float or sink in water

30. The separation of substances is done to

- (a) remove the non-useful or harmful component.
- (b) obtain the useful component.
- (c) improve the quality of the substance.
- (d) all of these.

31. Elephants spray muddy water on their bodies to keep cool. Which of the following statements explains how this happens?

- (a) The muddy water allows water vapour to condense on the elephant's skin.
- (b) When the water evaporates, it removes heat from the elephant's body.
- (c) The mud forms dry layer on the body of elephant and protects them from the heat of sun.
- (d) None of these

BIOLOGY

32. Study the diagram below.



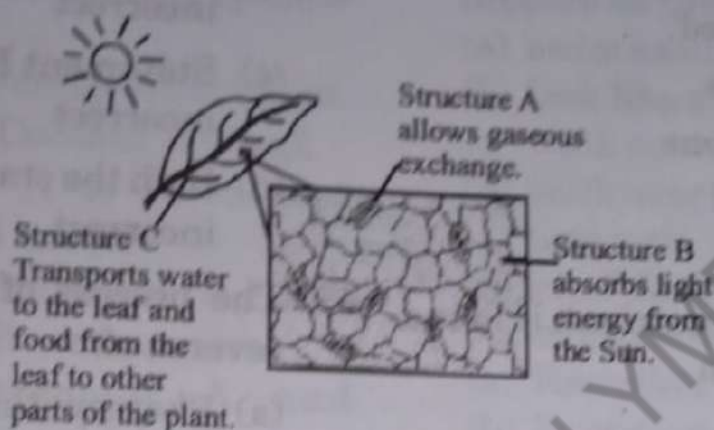
Which of the following processes does the insect help to carry out?

- (a) Seed dispersal
- (b) Pollination
- (c) Fertilisation
- (d) Germination

33. Objects made from plastics are commonly used. How does the use of plastics add to environmental pollution?

- A: They take a very long time to decompose.
 - B: They are produced from natural resources.
 - C: They produce harmful gases when burnt.
 - D: They are waterproof.
- (a) A and B only
 - (b) A and C only
 - (c) B and C only
 - (d) B and D only

34. Study the diagram below.



Which of the following represents the structures, A, B and C correctly?

- | A | B | C |
|-----------------|-------------|-------------|
| (a) Stoma | Leaf stalk | Chlorophyll |
| (b) Vein | Stoma | Leaf stalk |
| (c) Chlorophyll | Carotenoids | Stoma |
| (d) Stoma | Chlorophyll | Vein |

35. Which of the following reasons explain why the bird shown below cannot fly?



- It does not have wings.
- It does not have feathers.
- It is too heavy for its flight muscles.
- It is so light that the wind can blow it away easily.

36. When lemon/vinegar is added to warm milk, it results in

- setting of milk.
- curdling of milk.
- pasteurization.
- creaming.

37. Which one of the following is a parasitic plant?

- Rose plant
- Jasmine plant
- Mango tree
- Cuscuta

38. The microscopic animals which live in water are called:
- Zooplanktons
 - Phytoplanktons
 - Hydrophytes
 - All of these
39. Iron, a biological nutrient, is found in human body in
- bones.
 - blood.
 - hair.
 - All of these.
40. Which one of the following is an annual plant?
- Paddy
 - Rose
 - Lemon
 - Neem
41. Which one of the following statements is correct about the soil?
- Statement A:** It provides a medium for the growth of plants.
- Statement B:** It provides sunlight to the root of the plant.
- Both the statement A and B are correct
 - Statement A is correct and B is incorrect
 - Statement B is correct and A is incorrect
 - Both the statement A and B are incorrect
42. The process of respiration is the reverse of:
- Photosynthesis
 - Transpiration
 - Diffusion
 - All of these
43. Which one of the following statement is true?
- Statement A:** Ozone layer is not necessary for the living organisms.
- Statement B:** In the food chain plants are called producers and animals are called consumers.
- Only Statement A is correct
 - Only Statement B is correct
 - Both Statement A and Statement B are correct
 - Both Statement A and Statement B are incorrect

44. Based on the following statements, which one of the following options is correct?
- Statement A:** Fenugreek is a seed.
Statement B: Coconut is a leaf.
- (a) Statement A is false and Statement B is true
(b) Both, Statement A and Statement B are true
(c) Both, Statement A and Statement B are false
(d) Statement B is false and Statement A is true
45. Given below the two Statements:
- Statement A:** Matter and energy flows between organisms and physical environment.
Statement B: Living organisms, such as producers and consumers are abiotic factors present in the environment.
- Which one of the following is correct with regard to above statements?
- (a) Only Statement A is correct
(b) Only Statement B is correct
(c) Both Statement A and Statement B are correct
(d) Both Statement A and Statement B are incorrect
46. Underwater divers wear fin-like flippers on their feet to
- (a) swim easily in water.
(b) look like a fish.
(c) walk on water surface.
(d) walk over the bottom of the sea (sea bed).
47. Which of the following is an incorrect statement about excretion?
- (a) Excretion takes place in plants.
(b) Excretion takes place both in plants and animals.
(c) Excretion is the process of getting rid of excess water only.
(d) Secretion is one method of excretion.
48. A camel is a desert animal. It shows many adaptations. Which of the following statements (P, Q, R & S) is incorrect?
- P - It has a hump where fat is stored.
Q - It can stay without water for long time.
R - It sweats a lot.
S - It excretes large amount of urine.
- (a) P only (b) Q only
(c) P & Q (d) R & S

Which pair of plants have two or more edible parts?

- (a) (i) and (ii)
- (b) (ii) and (iii)
- (c) (iii) and (iv)
- (d) (i) and (iv)

49. Read the following sentences about photosynthesis:

- (i) Sunlight, carbon dioxide, chlorophyll and water are necessary.
- (ii) Oxygen is absorbed.
- (iii) Leaves carry out photosynthesis.
- (iv) Proteins are made during photosynthesis.

Choose the correct pair of sentences that are true to photosynthesis

- Mock Test-1
- (a) (iii) and (iv)
 - (b) (i) and (iii)
 - (c) (ii) and (iv)
 - (d) (i) and (iv)

50. Ritu gave the following ill effects of the practice of burning dried leaves and other plant parts:

- (i) Burning degrades the soil.
- (ii) Burning produces harmful gases/fumes.
- (iii) Precious raw materials to obtain manure at low cost is lost.
- (iv) Lot of heat is generated unnecessarily.

According to you the correct reasons why we should not burn leaves are:

- (a) i, ii and iv only
- (b) i, ii, iii, and iv
- (c) ii and iii only
- (d) ii, iii, and iv only

SCIENCE

MOCK TEST-1

ANSWERS KEY

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

PHYSICS

- (b) Bulb will not light up if sufficient current is not provided
- (d) The table classifies objects according to whether they are made of magnetic materials. Materials that can be attracted by a magnet are known as magnetic materials. Iron, nickel, cobalt and steel are magnetic materials. Brass button is made of non-magnetic material and it is the object that has been wrongly classified. Steel wire is made of magnetic material and is correctly classified. Thumbtack and key are usually made of magnetic material such as iron or steel and are correctly classified. Silver spoon, gold coin and copper plate are made of non-magnetic material and are correctly classified. Safety pin is usually made of magnetic material and has been wrongly classified. Therefore the answer is option (d).
- (b) Objects made of a material that is a good conductor of electricity will light up the bulb when connected to the circuit. Thus, (A) and (C) are good electrical conductors. (B) and (D) are electrical insulators. An insulator does not allow electricity to flow through. Therefore, there is an open circuit and the bulb will not light up.
- (d) Length of a curved line can be measured with the help of a thread and a meter scale.
- (b) A → (r); B → (p); C → (q); D → (s)
- (d) Muscular force is the example of Contact force.
- (d) A shadow is an area of darkness and it is formed when an object blocks the path of light. For this question, the apple does not allow light to pass through it, which results in the formation of its shadow on the screen. It also demonstrates that light travels in a straight line.
- (b) The speed of light (3×10^8 m/s) is more than speed of sound 332 m/s in air. So, we can see lightning before we hear thunder.

9. (a) The swinging pendulum of a wall clock performs both oscillatory and periodic motion.
10. (a) The attraction is maximum near magnetic poles.
11. (a) When pure water was used, the bulb did not light up. This shows that pure water does not allow electricity to pass through it.
12. (c) A source of light, an opaque obstacle and screen behind the obstacle are necessary for shadow formation.
13. (a) Switch completes the circuit but does not act as a source of current
14. (a) Magnetic strength is equal at both the poles.

CHEMISTRY

15. (c) Cotton is obtained from plant.
16. (a) Saturated solution
17. (c) Plastic is water resistant and bad conductor of heat and electricity. Pliers have plastic handles so that they do not conduct electricity and are safe to use.
18. (a) No new substance is formed on melting of coaltar.
19. (d) Disposable cup has lower density than water therefore it floats on water.
20. (b) In chemical change molecules of substance undergo change and new substances are formed.
21. (a) Eggs will rotten to give foul smell. Bottle will remain the same whereas moth balls will sublime which is a physical change.
22. (b) In statement (i) state is changed whereas in statement (ii) new products are formed as a result of ignition.
23. (c) Nitrogen neither burns nor supports combustion. The gas controls burning in atmosphere.
24. (b) As one goes up in the atmosphere, the amount of oxygen in air decreases.
25. (a) Aquatic plants and animals use the oxygen dissolved in water to breathe.
26. (c) The part labelled W has to be made of waterproof material so as to keep water away when the umbrella is used in the rain. Plastic will be an ideal choice for making W. The part labelled X should be made of a strong material. Wood can absorb water and get wet, causing it to rot. Metal will be a better choice for making X. For making Y, wood will be a better choice than metal as metal is a good conductor of electricity and it can be dangerous during thunderstorms.
27. (b) A brittle material is one that can break easily upon impact. In this question, the property of brittleness is shown by the glass as it broke into smaller pieces when dropped on the floor.
28. (b) To hold 10L of water, the material must be strong. Materials P and Q satisfy this requirement. However, the material has to be waterproof also so that it can hold water. Thus, Ravi should choose material Q and not material P.

29. (b) Iron and nickel are magnetic while aluminium and silver are non-magnetic. Thus the property by which they are classified is the magnetic property.
30. (d) Separation of substances help in obtaining the useful component and improving the quality of substance by discarding harmful component
31. (b) Heat is required to change the state of water from liquid to gas. When water evaporates from the elephant's skin, heat from the elephant's body is used to change water into water vapour. This cools down the body of the elephant as heat is removed during this process.
- BIOLOGY**
32. (b) As the bee lands on the petal to drink the nectar from within the flower or to collect pollen, the stamen which hangs down from the top transfers pollen onto the bee's body. This pollen would be transferred to the stigma of another flower when the bee visits it. This process is pollination, the transfer of pollen grains from the anther to the stigma.
33. (b) Man-made materials such as plastics are usually non-biodegradable. In other words, they do not decay easily. We may bury them but because they do not break down easily, they will remain in the soil for a very long time. Thus, this increases land pollution on Earth. However, when these materials are burnt in incinerators, they produce harmful gases which then add to the air pollution on Earth.
34. (d) Structure A is stoma because gas exchange takes place via the small openings found on the underside of leaves. Structure B is chlorophyll because it absorbs light energy from the Sun. Structure C is the leaf vein where water and food can move in and out of the leaf. The vein consists of xylem and phloem which are tubes that transport water and food in plants.
35. (c) The bird, kiwi is found in New Zealand. Its body is too heavy to fly. It is because the flight muscles cannot support the body weight when it flies.
36. (b) Paneer is made by this process this is called curdling of milk. Here, the milk protein separates out from the fat.
37. (d) Cuscuta is a parasitic plant because it gets its nutrition from another living plants.
38. (a) Zooplanktons are microscopic organisms found in water bodies. They are good nutritional source for aquatic animals.
39. (b) Haemoglobin of blood is a compound of iron.
40. (a) An annual plant completes its life cycle within one year and then dies such as – paddy, wheat and maize etc.

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41. (b) Soil is a good medium for plant growth. It contains sufficient nutrients and minerals for plant life.
42. (a) Photosynthesis is the reverse process of respiration. Because in the process of photosynthesis the food is prepared and in respiration the stored food is oxidised releasing energy.
43. (b) Plants prepare their own food by the process of photosynthesis, so they are producers and animals depend upon plants for their food so they are consumers. Ozone layer is necessary for all living organism as it prevents the harmful U.V. rays from entering the earth.
44. (d) The seeds of fenugreek (methi) are used for cooking. The part of coconut which is used is its fruit drupe. The fibrous mesocarp of coconut is used to make fibre, whereas the endocarp is used as a source of oil and carbohydrate.
45. (a) On the earth the source of energy is sun. Plants use this energy for food preparation and animals depend upon plants for food. After death of animals, decomposers in soil use the dead bodies. After death of decomposers their body components are released in the environment, mostly in soil.
- They are used by plants. This is path of flow of energy between organisms & environment. Living organisms are the biotic factors.
46. (a) Fin-like flippers used by divers help to move through water more efficiently. Since human feet are too small to provide much thrust.
47. (c) Through the process of excretion, animals eliminate excess water as well as waste products.
48. (d)
49. (b) Photosynthesis is carried out in the presence of sunlight. Chlorophyll is essential component. Carbon dioxide and water are utilized in this process. Carbohydrate is the main product.
50. (b) We should not burn dried leaves because it degrades the soil, produces fumes, destroys raw materials which can be used to prepare organic manure. Burning creates a lot of heat in the atmosphere which adds up to the global warming.