

**CBSE
Class VII
Science Term 1
Sample Paper - 3**

Biology

Q1. Identify the odd one.

- (a) Ammonia
- (b) Glucose
- (c) Uric acid
- (d) Urea

Sol. (b)

Xplanation

Ammonia, urea and uric acid are excretory products in different animals. Ammonia is an excretory product in gaseous form among fish. On the other hand, uric acid (white in colour) is in birds, lizards, snakes etc. Urea is an excretory product in human beings.

Glucose is the simpler absorbable food product formed after digestion.

Q2. Which one is not a function of blood?

- (a) It transports nutrients to various parts.
- (b) RBC fights against the infection
- (c) It carries oxygenated blood to various parts
- (d) It helps in the formation of clot

Sol (b)

Blood is the fluid tissue which transports oxygen and nutrients to various parts of a body.

Platelets blood also help in blood clotting during any cut or wound.

Red blood cells contain haemoglobin which are respiratory pigment and WBC fight against infection. Therefore, statement 2 (RBC fight against infection) is incorrect as WBC fight against infections.

Q3. In mammals, the urea is transported by _____ .



- (a) Blood plasma
- (b) Erythrocytes
- (c) Haemoglobin
- (d) Leucocytes

Sol (c)

- Q4. In the lab, a student dissected a frog, cut out its heart from the body and kept it in a solution. What did he observe about the heart?
- (a) It continued beating for a long time
 - (b) It continued beating for a small time
 - (c) It stopped beating immediately
 - (d) It stopped beating immediately but resumed after 10 minutes

Sol. (a)

- Q5. The picture shows a raccoon. It is a _____ because it feeds on dead and decaying animals.

- (a) Autotroph
- (b) Parasitic animal
- (c) Scavenger
- (d) Omnivore

Sol. (c)

Scavengers are those animals which get their food from dead and decaying animals. Vulture, crow, jackal are also scavengers. They are known for keeping the environment clean.

- Q6. Which of the following statements is not relevant about stomach?



- (a) It is thin walled bag.
- (b) It secretes mucous, hydrochloric acid and digestive juices.
- (c) It opens into small intestine
- (d) It receives food from oesophagus

Sol. (a)

Stomach is a thick walled bag, which receives food from oesophagus and opens into small intestine. Wall releases mucus, hydrochloric acid and digestive juices.

- Q7. Female anopheles, also known as the vector of Malaria is shown in the picture. Due to its bite, Plasmodium is carried from a diseased person to a healthy person. The toxins produced by plasmodium cause the dreaded malaria. Which one of the following modes of nutrition is followed by the female mosquito?

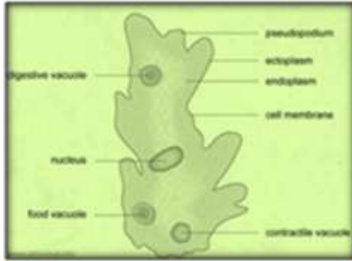
- (a) Scavenger
- (b) Endoparasitic
- (c) Ectoparasitic
- (d) None of the above

Sol. (b)

The animals which get food and shelter from other animals are known as Parasitic. There are two categories of parasites: endoparasites and ectoparasites.

Endoparasites live inside the body of other animals like malarial parasite, while ectoparasites live the surface of the body of other animals like bed bugs.

Q8. Which of the following statements is NOT correct for amoeba?



- (a) Microscopic single celled organism
- (b) Found in pond water
- (c) Cannot capture its own food
- (d) Constantly changes its shape

Sol.

(c)
 Amoeba is microscopic unicellular organism, which lives in pond water and keeps on changing its shape. It captures its food with the help of pseudopodia.

Q9. Which is the odd one out when it comes to respiration?



- (a) Ant
- (b) Grasshopper
- (c) Cockroach
- (d) Earthworm

Sol.

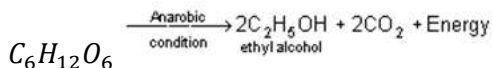
(d)
 Ant, grasshopper and cockroach have. Tracheal system for respiration. Earthworm does not have tracheal system and it respire through its skin.

Q10. What is the product formed in the cells from conversion of sugar molecules of food during anaerobic respiration?

- (a) Glucose
- (b) Oxygen
- (c) Nitrogen
- (d) Ethyl alcohol

Sol.

(d)
 Anaerobic respiration refers to the breakdown of sugar molecules in the absence of oxygen to release ethyl alcohol, carbon dioxide and energy.



Q11. The number of ATP molecules produced during aerobic and anaerobic respiration is _____ and _____ respectively.

- (a) 5 and 15

- (b) 2 and 8
- (c) 12 and 24
- (d) 38 and 2

Sol.

(d)

Q12. Dolphins and whales keep coming to the surface of the water. Why do they do this?

- (a) They are curious by nature
- (b) To get sufficient sunlight
- (c) To breathe
- (d) To play around

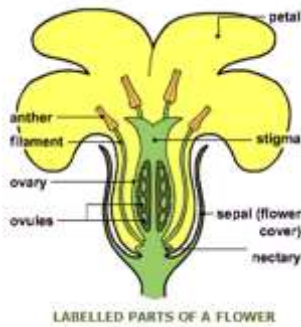
Sol.

(c)

They are mammals.

They have lungs not gills and can't breathe water.

Q13. The name and functions of each part of the flower is given in the table below. Which of the following is incorrect?



LABELLED PARTS OF A FLOWER

Part	Name	Function
1	Ovary	Protects the ovules
2	Ovule	Contains the pollen grains
3	Petals	Attracts insects
4	Stigma	Receives the pollen grains

- (a) Part 1
- (b) Part 2
- (c) Part 4
- (d) Part 3

Sol.

(b)

Part 2 is incorrect.

Facts:

Ovule contains an egg cell.

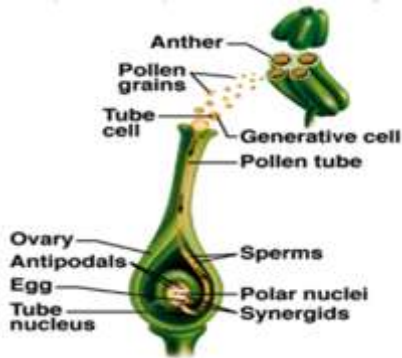
Q14. What is happening during the process?

- (a) Self Pollination
- (b) Cross Pollination
- (c) Fertilisation
- (d) Germination

Sol.

(b)

Cross Pollination: Pollen grains are transferred from the anther of one flower to the stigma of another flower.



Q15. Study the chart below.

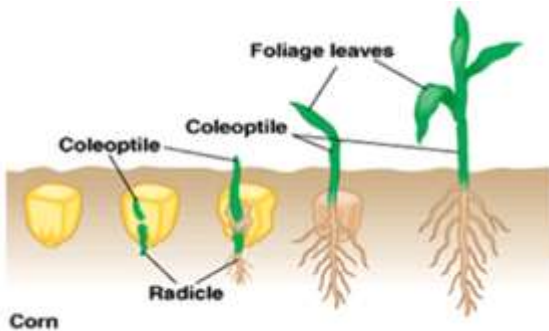


What are M and D?

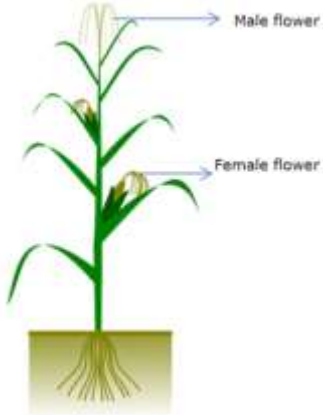
- (a) M: seeds D:Germination
- (b) M: Flower D:Pollination
- (c) M:Flower: D: Fertilisation
- (d) M:Sedds D:fertilisation

Sol.

(a)



Q16. Meg observed a maize plant. What did he infer his observation?



- (a) As the male and female flowers are on the same plant, fertilization is required.
- (b) Not all flowers of the plant can develop into fruit
- (c) All flowers can develop into fruit.
- (d) As the male and female flowers are on the same plant, pollination is not required.

Sol.

(b)

Inference: Not all flowers of the plant can develop into fruits.

Facts:

Male flowers will not develop into fruits. Female flowers or bisexual

Q17. Where do plants store waste materials?

- (a) Old leaves
- (b) Vacuoles
- (c) Old leaves & Vacuoles
- (d) Neither old leaves nor vacuoles

Sol.

(c)

Q18. From which part of a plant does maximum loss of water through transpiration take place?

- (a) Lenticles
- (b) Cuticle
- (c) Rhizoids
- (d) Stomata

Sol.

(d)

Q19. Xylem channels of which of the following plants parts possess the lowest water Potential?



- (a) Stem

- (b) Root
- (c) Leaves
- (d) Root hairs

Sol.

(c)

Water flows from areas of high water potential to areas of low water potential.

Thus a plant's leaf must have a lower or negative water potential relative to the root (or for that matter other parts of the plant) for water to move up the stem.

Q20. In what way is the plant transport system and human transport system similar?

1. Both systems transport food and water.
2. Both systems have tubes to transport materials.
3. Both systems transport oxygen and carbon dioxide.
4. Both systems need an organ to pump the materials in the tubes to different parts.

- (a) 1 and 2
- (b) 1, 2 and 4
- (c) 2, 3 and 4
- (d) 1, 2 and 3

Sol.

(d)

Chemistry

Q21. Substance 'x' when reacts with hydrochloric acid produces sodium chloride and water. What is this substance 'x'?

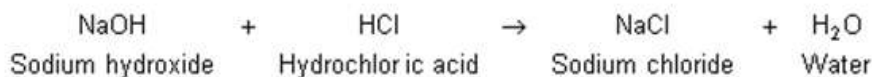
1. Sodium acetate
2. Sodium sulphate
3. Sodium hydroxide
4. Sodium oxide

- (a) 1
- (b) 2
- (c) 3
- (d) 4

Sol.

(c)

Sodium chloride is a neutral salt, which is formed when a strong base sodium hydroxide reacts with strong hydrochloric acid per gives neutralization reaction.



Q22. Which two products are formed in a neutralization reaction?

- (a) Acid and base
- (b) Acid and salt
- (c) Water and base
- (d) Salt and water

Sol.

(d)

When an acid reacts with a base to form salt and water along with the evolution of energy in the form of heat, the reaction is said to be neutralization reaction.

Q23. Which one of the following does not result in the acidic nature of soil?

- (1) Addition of chemical fertilizer
 - (2) Addition of organic matter
 - (3) Acid rain
 - (4) Addition of slaked lime
- (a) 1
 - (b) 2
 - (c) 3
 - (d) 4

Sol.

(d)
Addition of chemical fertilizers and organic manure increase the amount of acids in the soil. $Ca(OH)_2$ is basic in nature and it helps to neutralize the acidic nature of soil.

Q24. The presence of _____ makes the lime water soapy

1. Sodium chloride
 2. Hydrochloric acid
 3. Nitric acid
 4. Calcium hydroxide
- (a) 1
 - (b) 2
 - (c) 3
 - (d) 4

Sol.

(d)
Bases are slippery to touch and bitter to taste. Lime water is soapy due to the presence of a base. Hydrochloric acid and nitric acid are the acids while sodium chloride is a salt and calcium hydroxide $Ca(OH)_2$ basic in nature.
So, calcium hydroxide is present in lime water.

Q25. What is the chemical name of lime water?

1. Calcium carbonate
 2. Calcium oxide
 3. Calcium hydroxide
 4. Copper sulphate
- (a) 1
 - (b) 2
 - (c) 3
 - (d) 4

Sol.

(c)
Lime water is the compound of calcium and has the chemical formula $Ca(OH)_2$. Lime water is the common name for calcium hydroxide.

Q26. In an experiment, a student put baking soda in an empty drink bottle. He added vinegar and then placed a balloon over the neck of the bottle.

Very soon, the balloon starting inflating (accompanied with bubbling and foaming in the bottle)

Which gas is responsible for this?

- (a) Nitrogen
- (b) Oxygen

- (c) Hydrogen
- (d) Carbon dioxide

Sol. (d)
It's a chemical reaction. The citric acid in the vinegar reacts with the baking soda to form carbonic acid. The carbonic acid breaks down into carbon dioxide and water. The carbon dioxide is the gas that is released.
It's this carbon dioxide gas that you see bubbling and foaming as soon as you mix baking soda and vinegar together."

Q27. Which one of the following chemical reactions cannot take place?

1. Copper sulphate + Iron \rightarrow Iron sulphate + copper
2. Lime water + Carbon dioxide \rightarrow Calcium carbonate + water
3. Iron sulphate + copper \rightarrow Copper sulphate + Iron
4. Magnesium oxide + water \rightarrow Magnesium hydroxide

- (a) 1
- (b) 2
- (c) 3
- (d) 4

Sol. (a)
Iron is more reactive than copper. So, copper won't be able to replace iron in iron sulphate. Therefore the reaction between copper and iron sulphate is not possible.
Lime water reacts with CO_2 to form calcium carbonate and water.
Magnesium oxide when dissolved in water results in the formation of magnesium hydroxide.

Q28. Which of the following is not a chemical change?

1. Boiling of water
2. Boiling of egg
3. Burning of paper
4. Burning of cloth

- (a) 1
- (b) 2
- (c) 3
- (d) 4

Sol. (a)

Q29. This potter is an expert at making pots and toys from soil. Which type of soil does he use?



- (a) Silt

- (b) Loamy
- (c) Sandy Soil
- (d) Clayey soil

Sol.

(d)

Q30. A percolation test is done to determine the absorption rate of soil. In which type of soil, percolation rate is the highest?

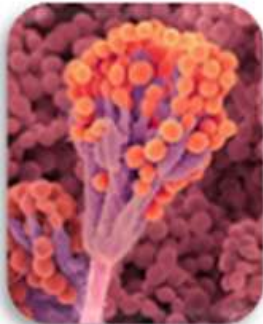


- (a) Sandy soil
- (b) Clayey soil
- (c) Loamy soil Loamy soil
- (d) Mixture of sand and soil

Sol.

(a)

Q31. Fungi and bacteria grow mostly in _____ .



Fungi bacteria grow mostly in _____ .

- (a) Sub soil
- (b) Top soil
- (c) Bed rock
- (d) Anywhere

Sol.

(b)

Q32. Which of the following processes is involved in the formation of soil?

- (a) Weathering
- (b) Precipitation
- (c) Evaporation
- (d) Transpiration

Sol. (a)
The formation of soil happens over a very long period of time. It can take 1000 years or formed from the weathering of rocks and minerals.
The surface rocks break down into smaller pieces through a process of weathering and with moss and organic matter. Over time this creates a thin layer of soil

Q33. The solubility of gas ____ (1) ____ with the increase in ____ (2) ____ and ____ (3) ____ with the increase in ____ (4) ____.

- (a) 1. Increases 2. Temperature 3. Increases 4. Pressure
- (b) 1. Decreases 2. Pressure 3. Decreases 4. Temperature
- (c) 1. Increases 2. Pressure 3. Decreases 4. Temperature
- (d) 1. Decreases 2. Temperature 3. Decreases 4. Pressure.

Sol. (c)

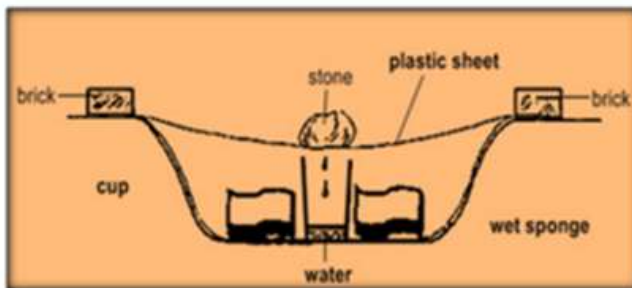
Q34. The density of water is ____ and is greatest at ____

- 1. $1 \text{ g/cm}^3, 4^\circ\text{C}$
- 2. $10 \text{ g/cm}^3, 4^\circ\text{C}$
- 3. $1 \text{ g/cm}^3, 100^\circ\text{C}$
- 4. $10 \text{ g/cm}^3, 0^\circ\text{C}$

- (a) 1
- (b) 2
- (c) 3
- (d) 4

Sol. (a)

Q35. Jack's father wanted to demonstrate "water cycle" to him. He dug a hole in their garden as shown. It was observed that some water was collected in the empty cup after a few hours. In this representation of "water cycle", water bodies are represented by ____ and clouds by ____.



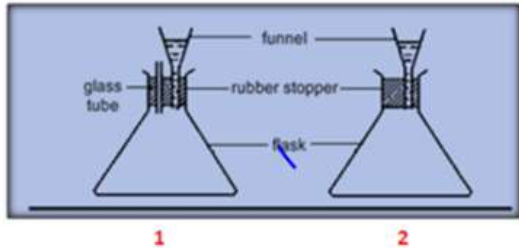
- (a) Cup, Plastic sheet
- (b) Wet sponge, Stone
- (c) Wet sponge, Plastic sheet
- (d) Cup, Brick

Sol. (c)

Since it was bright and sunny, the water from the wet sponge evaporates and condensed on the interior of the plastic sheet.

As the stone is right above the cup the water would collect below the stone and full into the cup.

- Q36. A student set-up two experiments as shown. In both set-ups, the rubber stopper is fitted tightly into the flask. What did he observe?



- (a) Water flowed in set-up (1) but not in set-up (2)
(b) Water flowed in set-up (2) but not in set-up (1)
(c) Water flowed in both set-ups
(d) Water did not flow either of the set-ups

Sol.

(a)

In Set-up 1, air escapes through the glass tube so the water flows in to take its place and occupy the space.

In set-up 2, no air can escape from the flask so water cannot enter the flask.

- Q37. _____ does not guide birds while migrating?

- (a) Sense of direction
(b) Flight ability
(c) Magnetic field of the earth
(d) Sun and stars

Sol.

(b)

He birds which migrate from one region to another in search of food, shelter or mater are known as nigratory birds. Various factors guide these birds to migrate like earth's magnetic field, sun during he day and stars during night, in-built sense of direction of the birds etc.

Flight ability helps the birds to fly high but does not guide then in migrating.

- Q38. Webbed feet: Penguin:: _____: Frog.

- (a) Long tails
(b) Sticky pads
(c) Wide paw
(d) Curved claws

Sol.

(b)

Penguins are the polar animals which have webbed feet. These feet help them to swim well. Red eyed these pads help it to climb trees on which it lives.

- Q39. Which part of an elephant acts as a coolant in the hot and humid climate?

- (a) Skin
(b) Trunk
(c) Tusk
(d) Long ears

Sol.

(d)

- Q40. Polar bears live in the polar regions where the temperature may go down to -37°C .
- (a) White fur
 - (b) Well insulate fat skin
 - (c) Wide paws
 - (d) None of the above
- Sol. (b)

Physics

- Q41. Inflate two balloons. Hang them in such a way that they do not touch each other. Rub both the balloons with a woolen cloth and release them. What do you observe?



- (a) The balloons will repel each other
 - (b) The balloons will attract each other
 - (c) There will be no effect
 - (d) None of these
- Sol. (a)
Like charges repel each other
- Q42. What is not advisable to do during a thunderstorm with lightning?
- (a) If in a forest stand under the longer trees
 - (b) If in an open field run towards the trees
 - (c) If in an open field lie down on the ground
 - (d) All the above
- Sol. (d)
If no shelter is available and you are in an open field, stay far away from all trees. Stay away from poles or other metal objects. Do not lie on the ground. Instead, squat low on the ground. Place your hands on your knees with your head between the hands. This position will make you the smallest target to be struck.
- Q43. If you are indoors during an earthquake, what is a good idea to do?
- (a) Take shelter under a table and stay there till shaking stops
 - (b) Stay away from tall and heavy objects that may fall on you
 - (c) If you are in bed, do not get up. Protect your head with a pillow
 - (d) All of the above
- Sol. (d)

Q44. Winds at the eye of a cyclone are?

- (a) Unstable
- (b) Frantic
- (c) Calm
- (d) Fast

Sol. (c)

Q45. The bullet train which can attain a maximum speed of 250 km/hr
How much distance will it cover between 10.00 a.m. and 11.00 a.m. if it was travelling at
constant speed of 250 km/hr?

- (a) 60 km
- (b) 250 m
- (c) 250 km
- (d) 25 km

Sol. (c)

Speed of train = 250 km/hr
Time taken by train = 60 minutes = 1 hr
Distance = speed \times time taken
Or distance = 250 km/hr \times 1 hr = 250 km
Hence, distance covered by train is 250 km

Q46. The distance between two cities is 120 km.
A car covers the first 70 km at a speed of 70 km/hr and covers the remaining 50 km at a speed of
50 km/hr.

How much time did the car take to more from one city to another?

- (a) 60 minutes
- (b) 90 minutes
- (c) 120 minutes
- (d) 180 minutes

Sol. (c)

Case – I: When the car is moving at a speed of 70 km/hr and covers the distance of 70 km

$$\begin{aligned} \text{Time} &= \frac{\text{Distance}}{\text{speed}} \\ &= \frac{70}{70} \text{ km} \\ &= \text{km/hr} = 1\text{hr} \end{aligned}$$

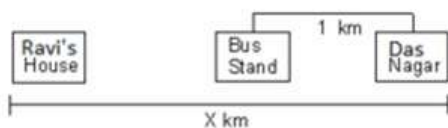
Case II: When the car is moving at a speed of 50 km/hr and covers the distance of 50 km

$$\begin{aligned} \text{Time} &= \frac{\text{Distance}}{\text{Speed}} \\ &= \frac{50}{50} \text{ km} \\ &= \text{km/hr} = 1\text{hr} \end{aligned}$$

So, time taken by the car to cover 120 km

$$\begin{aligned} &= \text{Time taken by car to cover 50 km} + \text{time taken by car to cover 70 km} \\ &= 1 \text{ hr} + 1 \text{ hr} = 2\text{hr} = 120 \text{ minutes.} \end{aligned}$$

Q47. Ravi takes 20 minutes to reach Das Nagar from his house at the speed of 2 m/s.



How much distance will he cover to reach the bus stand from his house at the same speed and how much time he will take to reach Das Nagar from the bus stand if he moves at the speed of 4 m/s?

- (a) 1000 m, 500 sec
- (b) 1300 m, 250 sec
- (c) 1400 m, 250 sec
- (d) 1200 m, 200 sec

Sol. (c)

Speed of Ravi to reach Das Nagar from his house = 2 m/s

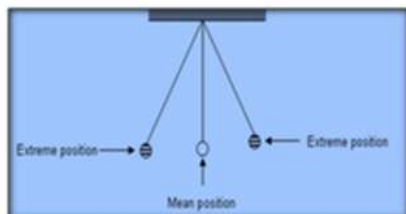
Time taken by Ravi to reach Das Nagar from his house = 20 min = 20×60 sec

Distance of Ravi from Das Nagar = Speed \times time = $2 \times 20 \times 60 = 2.4$ km

\therefore Distance covered by Ravi to reach bus stand = 2.4 km - 1 km = 1.4 km = 1400 m

Time taken by Ravi to reach Das Nagar from bus stand / speed of Ravi = $\frac{100}{4}$ m/s = 250 s

Q48. When is a pendulum said to have completed one oscillation?



- (a) Movement of bob from one extreme position to another extreme position and then back to first extreme position.
- (b) Movement of bob from one extreme position to mean position.
- (c) Movement of bob to mean position only.
- (d) Movement of bob from one extreme position to another extreme position.

Sol. (a)

Q49. One billionth of a second = _____ (1)
One millionth of a second = _____ (2)

- (a) 1. Microsecond 2. Nanosecond
- (b) 1. Nanosecond 2. Microsecond
- (c) 1. Microsecond 2. Millisecond
- (d) 1. Millisecond 2. Nanosecond

Sol. (b)

Q50. Gaps are left between railway tracks. Do you know the reason?



- (a) Gaps give the space to the tracks to expand in summer heat
- (b) Gaps hold the tracks firmly
- (c) Produce rhythmic sound when the train moves
- (d) No specific reason

Sol. (a)

Q51. The picture shows a toilet paper roll and a steel rod on which it rests. When we touch the steel rod and the paper simultaneously, we feel that the rod is cooler. Why?



- (a) Iron being a good conductor of heat conducts more heat from our body
- (b) Paper being a good conductor conducts more heat from our body
- (c) More heat flows from the iron to our body
- (d) More heat flows from the paper to our body

Sol. (a)

Heat always flows from hotter region to a colder one. Since iron is a good conductor of heat, more heat will flow from our body into it and we will feel cold.
As paper is a bad conductor less heat will flow from our body

Q52. Which is the odd one out when it comes to heat?

- (a) Brass
- (b) Wood
- (c) Plastic
- (d) Wool

Sol. (a)

Wood, wool and plastic are insulators whereas brass is a conductor

Q53. Identify where the heat is being transferred by conduction, by convection and b radiation.



- (a) 1. Convection 2. Radiation 3. Conduction
- (b) 1. Conduction 2. Convection 3. Radiation
- (c) 1. Radiation 2. Convection 3. Conduction
- (d) 1. Conduction 2. Radiation 3. Convection

Sol. (c)

Q54. A wooden spoon is dipped in a cup of ice cream. It's other end _____



- (a) Becomes cold by the process of conduction
- (b) Becomes cold by the process of convection
- (c) Becomes cold by the process of radiation
- (d) Does not become cold

Sol. (d)

Q55. Which is the odd circuit out?



- (a) 1
- (b) 2
- (c) 3
- (d) There is no odd circuit out

Sol. (a)

2 and 3 are parallel connections.
 1 is a series connection

Q56. Will the bulb glow in the circuit shown?

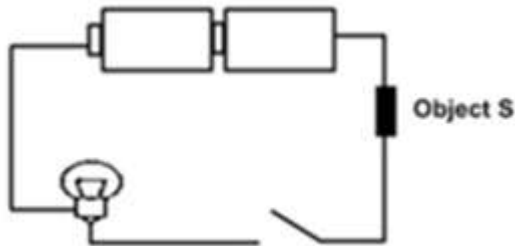


- (a) Yes
- (b) No

Sol.

(b)
 The electricity isn't flowing through the bulb and socket. One of the wires need to be connected the other terminal of the light socket.

Q57. The figure shows an open circuit. Even after the circuit is closed, the light bulb does not light up at all.



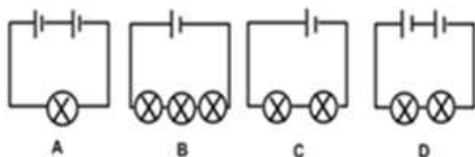
1. The light bulb has fused.
2. Object S is a plastic ruler.
3. The batteries are too strong.
4. Object S is an insulator of electricity.
5. The arrangement of batteries is incorrect.

- (a) 1 and 2 and 3
- (b) 1 only
- (c) 1 and 3 and 5
- (d) 1 and 2 and 4

Sol.

(d)

Q58. Study the 4 different circuit diagram below. The bulbs and the batteries in the 4 circuits are new and functioning properly. Which one of the following correctly shows the correct arrangement of the brightness of the bulbs from the brightest to the dimmest?



- (a) $A > D > C > B$
- (b) $A > C > B > D$
- (c) $B > C > D > A$
- (d) $D > A > C > B$

Sol. (a)

Q59. Magnesium burns with a brilliant __ light.

- (a) Black
- (b) White
- (c) Red
- (d) Yellow

Sol. (b)

Q60. The basic unit of time is _____.

- (a) A second
- (b) An hour
- (c) A minute
- (d) A light year

Sol. (a)

The basic unit of time is a second. Its symbol is s. Larger units of time are minute (min.) and hour (h).