

CBSE Sample Question Paper Term 1

Class – VIII (Session : 2021 - 22)

SUBJECT - SCIENCE - 086 - TEST - 05

Class 08 - Science

Time Allowed: 1 hour and 30 minutes

Maximum Marks: 70

General Instructions:

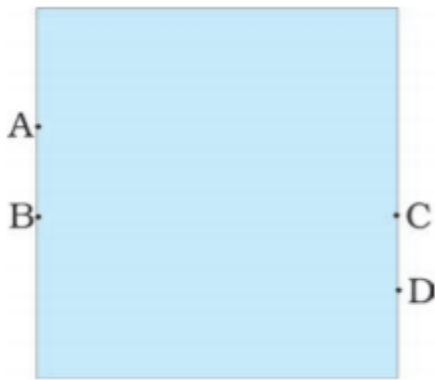
Attempt all the questions.

1. Identify the irrigation system in which water flows through the main pipeline under pressure with the help of a pump and escapes from the rotating nozzles? [1]
 - a) Moat method
 - b) Sprinkler system
 - c) Drip system
 - d) Chain pump system
2. Loosening of soil helps to : [1]
 - a) Mix fertilisers more uniformly
 - b) None of these
 - c) settle nutrient at lower layers of soil
 - d) trap more free nitrogen for plant growth
3. Why the pesticides be used with great care? [1]
4. How are pests controlled in a crop field? [1]
5. What precautions we need to observe while sowing seeds? [3]
6. Viruses do not multiply inside? [1]
 - a) bacteria
 - b) algae
 - c) fungi
 - d) non living cell
7. Which is not caused by protozoans? [1]
 - a) food poisoning
 - b) pyorrhoea
 - c) amoebic dysentery
 - d) malaria
8. Suggest a suitable word for each of the following statements. [1]
 - a. Chemicals added to food to prevent the growth of microorganisms.
 - b. Nitrogen-fixing microorganisms present in the root nodules of legumes.
 - c. The agent which spreads pathogens from one place to another.
 - d. Chemicals which kill or stop the growth of pathogens.
9. Name two diseases that are caused by virus. [1]
10. What are the major group of microorganisms. Explain any two with their harmful and useful effects in our life. [3]
11. Which synthetic fibre is often used as a substitute for wool? [1]
 - a) Acrylic
 - b) Rayon
 - c) Nylon
 - d) Polyester



12. Bakelite is formed by condensation and polymerisation of : [1]
- a) formaldehyde & ethylene b) cellulose & cutin
 c) formaldehyde & melamine d) phenol & formaldehyde
13. By which material artificial wool is formed. Why artificial wool is become more popular than natural wool? [1]
14. PVC (polyvinyl chloride) is a thermoplastic and is used for making toys, chappals, etc. Bakelite is a thermosetting plastic and is used for making electrical switches, handles of various utensils, etc. Can you write the major difference between these two types of plastics? [1]
15. What is rayon? Why is rayon called an artificial silk? Write any two uses of rayon. [3]
16. Choose the correct ascending order of reactivity : [1]
- a) Copper < Iron < Zinc < Aluminium b) Zinc < Aluminium < Copper < Iron
 c) Iron < Copper < Zinc < Aluminium d) Aluminium < Copper < Iron < Zinc
17. The fruit shown in the image is a rich source of : [1]
-
- a) Manganese b) Potassium
 c) Calcium d) Magnesium
18. Write the reaction of non-metals. [1]
19. Can you store lemon pickle in an aluminium utensil? Explain. [1]
20. Complete the following reactions: [3]
1. $Zn + H_2SO_4 \rightarrow \dots\dots\dots$
 2. $Fe + CuSO_4 \rightarrow \dots\dots\dots$
 3. $Cu + FeSO_4 \rightarrow \dots\dots\dots$
 4. $Mg + HCl \rightarrow \dots\dots\dots$
 5. $Fe + H_2O \rightarrow \dots\dots\dots$
21. Process of heating coal in the absence of oxygen is called : [1]
- a) destructive condensation b) destructive distillation
 c) carbonisation d) fractional distillation
22. During fractional distillation of crude oil the hydrocarbons that condense first are those with : [1]
- a) highest boiling point b) heaviest or most dense
 c) lowest boiling point d) lightest in weight or least dense
23. What do you understand by petrochemicals? [1]
24. Why is CNG called a clean fuel? [1]
25. What is PCRA? State some tips to save petrol and diesel? [3]
26. Temperature of water inside paper cup held above candle flame: [1]
- a) falls due to heat transferred b) increases as flame extinguishes

- c) remains the same as earlier d) rise due to heat transferred
27. A non inflammable substance out of the following is: [1]
- a) LPG b) Carbon dioxide
- c) CNG d) Alcohol
28. Explain the structure of a flame. [1]
29. Define calorific value. [1]
30. How was petroleum formed? How was it converted into its useful components? [3]
31. A water tank has four taps fixed at points A, B, C, D as shown in Fig. The water will flow out at the same pressure from taps at [1]



- a) A and C b) B and C
- c) C and D d) A and B
32. A force of 5 N is applied on a body to create an acceleration of 2m/s. The mass of the body is equal to [1]
- a) 1.5 kg b) 2 kg
- c) 2.5kg d) 5 kg
33. Explain that forces are due to an interaction between objects. [1]
34. A rocket has been fired upwards to launch a satellite in its orbit. Name two forces acting on the rocket immediately after leaving the launching pad. [1]
35. What are the various effects of force? [3]
36. A boy rolls a rubber ball on a wooden surface. The ball travels a short distance before coming to rest. To make the same ball travel longer distance before coming to rest, he may [1]
- a) sprinkle talcum powder on the wooden surface. b) cover the ball with a piece of cloth.
- c) sprinkle sand on the wooden surface. d) spread a carpet on the wooden surface.
37. Friction involves [1]
- a) Unnecessary expenses of energy b) Increase the life of machine
- c) Reduce the production d) Reduce the expenses of energy
38. Explain why the surface of mortar and pestle (silbatta) used for grinding is etched again after prolonged use? [1]

39. Two boys are riding their bicycles on the same concrete road. One has new tires on his bicycle while the other has tires that are old and used. Which of them is more likely to skid while moving through a patch of the road which has lubricating oil spilled over it? [1]
40. What are lubricants? How can we reduce friction? [3]
41. Loud sound can be produced by [1]
- a) Smaller amplitude
 - b) Low pitch
 - c) High pitch
 - d) Larger amplitude
42. Choose the correct answer: Sound can travel through [1]
- a) solids, liquids and gases
 - b) liquids only
 - c) solids only
 - d) gases only
43. What is an Echo? When one can hear the echo of sharp sound? Why cannot we hear an echo in a small hall? [1]
44. a. Which wave property determines: [1]
- i. loudness
 - ii. pitch
- b. What is Sound?
45. Draw a diagram: [3]
- a. Soft sound and a louder sound.
 - b. High pitch and low pitch.
46. Which of the following is common toxic chemical that get accumulated by biomagnifications? [1]
- a) DDT
 - b) Ozone
 - c) CFC
 - d) UV rays
47. In a network of sewer system, Manhole are provided at [1]
- a) Beginning of sewer
 - b) Junction of two or more sewers
 - c) Anywhere in network
 - d) At the end of sewer
48. Give full forms of the followings: [1]
- a. CFCs
 - b. CNG
 - c. LPG
49. Give answers in one word or sentence: [1]
- a. Air pollutants
 - b. Smog
 - c. Ganga Action Plan
50. Explain the effects of increasing number of vehicles? [3]



Solution

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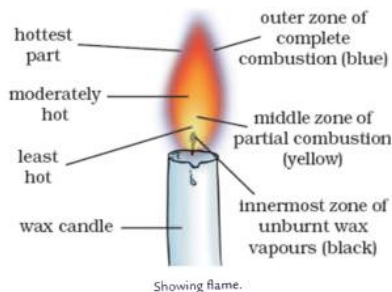
- (b) Sprinkler system**
Explanation: In sprinkler irrigation system, the water from a tube-well is allowed to flow through the main pipeline under pressure with the help of a pump, it escapes from the rotating nozzles and gets sprinkled on the crops.
- (a) Mix fertilisers more uniformly**
Explanation: Loosening of soil helps to mix fertilisers more uniformly. Loose soil help in germination of seeds and proper irrigation of the field.
- Pesticides may irritate the skin and the respiratory system of man, when the pesticides are used. They reach in the soil and water and absorbed by the plants. These plants, when consumed by man, the chemicals enter into the system and disturb metabolic activities, as well as food chain.
- (1) By treating seeds with chemicals before sowing them.
(2) Spraying pesticides as Malathions, Disyton, BHC at a proper time.
(3) Use of particular frequency of chemicals to scare away rats from crop field.
(4) Use of suitable cropping systems
(5) Sufficient distance between the plants reduces the spread of a disease.
(6) Remove infected plant parts (leaves, fruits) from the ground to prevent the disease from spreading.
(7) Eliminate residues of infected plants after harvesting.
- The following precautions should be taken while sowing seeds:

 - Seeds should be grown at proper depth.
 - They should be sown at a proper distance apart from each other.
 - Seed used for sowing should be clean, healthy and free from any disease or infection.
 - Seed should have good percentage of germination.
 - Seeds should be treated with suitable fungicides to prevent seed-borne diseases.
 - The soil should have enough water for the seeds to germinate. If the soil is dry, then it should be watered before sowing.
- (d) non living cell**
Explanation: Virus do not multiply inside non living cell because virus do not contain endoplasmic reticulum and other organelles required for replication of genetic materials.
- (a) food poisoning**
Explanation: Malaria, amoebic dysentery and pyorrhoea are caused by protozoa but food poisoning is caused by either fungi or bacteria.
- a. Preservatives
b. Rhizobium
c. Carrier/Vector
d. Antibiotics
- The two diseases caused by the virus are the common cold, poliomyelitis. The common cold is caused by a virus and easily gets spread through the air, direct contact with an infected person, etc. Poliomyelitis is caused by poliovirus and Salk's vaccine is given to prevent this disease.
- Microorganisms are broadly divided into four major groups namely: Bacteria, virus, algae and protozoa. Bacteria are single- celled microscopic organisms. They can survive under all types of environment, ranging from ice cold climate to hot springs and deserts to marshy lands. Bacteria play important role in our life. Some bacteria are useful whereas some other are harmful and cause diseases. Bacteria are involved in making of cheese and pickles. Lactobacillus bacteria promote the formation of curd. Antibiotics are also made from bacteria. Apart from this diseases like tuberculosis and typhoid are caused due to bacteria. Viruses are microscopic infectious agent that acts as non-living outside host cell and inside host cell becomes living and show reproduction. It can affect all kind of organism including animals, plants and bacteria. Common ailments like cold, coughs and influenza (flu) are caused by viruses, serious diseases like chicken pox and polio are also caused by viruses.

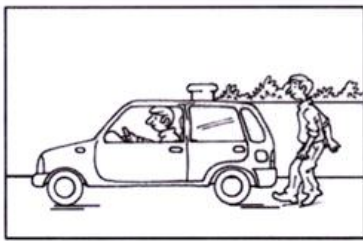


11. **(a) Acrylic**
Explanation: Acrylic is a synthetic fibre which is often used as a substitute for wool due to its wool-like feel.
12. **(d) phenol & formaldehyde**
Explanation: Bakelite is a thermosetting plastic. Bakelite is formed by condensation and polymerisation of phenol and formaldehyde. It is a poor conductor of heat and electricity. It is used for making electrical switches and handles of utensils.
13. Artificial wool is prepared from another type of synthetic fibre called acrylic. The wool obtained from natural sources is quite expensive made from acrylic are relatively cheap. They are available in a variety of colours. Synthetic fibres are more durable and affordable which makes them more popular than natural fibres.
14. Thermoplastics get deformed easily on heating and can be bent easily on heating. On the other hand, thermosetting plastics when moduled once cannot be softened on heating.
 Thermoplastics → Polythene and PVC
 Thermo setting plastics → Bakelite and melamine.
15. Rayon is a man-made fibre prepared from a natural raw material called cellulose by chemical treatment. Rayon fibre is chemically identical to cotton but it has shine like silk. Since rayon resembles silk in appearance, therefore it is also called artificial silk.
Two uses of rayon are as follows:
- It is used in textile industry for making clothes like sarees, dresses etc.
 - It is used in medical field for making bandages and surgical dressings.
16. **(a) Copper < Iron < Zinc < Aluminium**
Explanation: The arrangement of common metals in ascending order of reactivity is called reactivity series. Copper is least reactive followed by iron, zinc and aluminium.
17. **(a) Manganese**
Explanation: The fruit shown in picture is strawberry, which is a rich source of manganese. Manganese is a chemical element with symbol Mn and atomic number 25. It is not found as a free state in nature; it is often found in combination with iron, and with many minerals.
18. **Reaction of Non-metals:** Non-metals react with other elements to form their corresponding compounds.
 $C + 2S \rightarrow CS_2$ (Carbon disulphide)
 $2C + H_2 \rightarrow C_2H_2$ (Acetylene)
 $P_4 + 6Cl_2 \rightarrow 4PCl_3$ (Phosphorus trichloride)
19. No. This is because lemon pickle contains acids, which can react with aluminium (metal) liberating hydrogen gas. This can lead to the spoiling of the pickle. .
20. 1. $Zn + H_2SO_4 \rightarrow ZnSO_4 + H_2$
 2. $Fe + CuSO_4 \rightarrow FeSO_4 + Cu$
 3. $Cu + FeSO_4 \rightarrow$ no reaction
 4. $Mg + 2HCl \rightarrow MgCl_2 + H_2$
 5. $3Fe + 4H_2O \rightarrow Fe_3O_4 + 4H_2$
21. **(b) destructive distillation**
Explanation: The process of heating coal in the absence of oxygen is called destructive distillation of coal. Coke and coal gas is obtained from destructive distillation of coal.
22. **(a) highest boiling point**
Explanation: During fractional distillation of crude oil, the hydrocarbons that condense first are those with highest boiling point and get separated from column.
23. Those chemicals which are obtained from petroleum and natural gas are called petrochemicals. For example methyl alcohol, ethyl alcohol, formaldehyde, acetone, acetic acid, ethylene, benzene, toluene, vinyl chloride etc.. They are used to manufacture a wide range of products.
24. CNG is called a clean fuel because:
- It does not produce any pollution.
 - No residue is left after burning of CNG.

- (iii) It burns completely in the air.
 (iv) It give more energy when it burnt.
25. The Petroleum Conservation Research Association in India advises people on how to save petrol and diesel while driving. Some of these tips are:
- Drive at a constant and moderate speed as far as possible.
 - Switch off the engine at traffic lights or while waiting.
 - Ensure correct tyre pressure.
 - Ensure regular maintenance of vehicle.
 - Use public transport, car pool and combine errands when possible.
26. **(d)** rise due to heat transferred
Explanation: The temperature of water inside paper cup held above candle flame rise due to heat transfer. But paper does not attain ignition temperature until all the water get vaporised.
27. **(b)** Carbon dioxide
Explanation: A non inflammable substance out of the following is carbon dioxide. Carbon dioxide gas prevents the fire. LPG, CNG, and alcohol are inflammable substances and catch fire easily.
28. A flame consist of three zones. These are Innermost zone, middle zone, outer zone. The three zones of a flame have different colours and different temperature.
- The Innermost zone of a flame is dark or black :** It consists of hot, unburnt vapours of the combustible material. It is the least hot part of the flame. It is the coldest part of the flame.
 - The middle zone of a flame is yellow :** It is bright and luminous. The fuel vapours burn partially in the middle zone because there is not enough air of burning in this zone. The partial burning of fuel in the middle zone produces carbon particles. These carbon particles then leave the flame as smoke and soot. It has moderate temperature.
 - The outer zone of a flame is blue:** It is a non-luminous zone. In this zone, complete combustion of the fuel takes place because there is plenty of air around it. The outermost zone has the highest temperature in the flame. It is the hottest part of the flame. It is quite thin as compared to middle zone.



29. The amount of heat produced on complete combustion of 1kg of fuel is called calorific value. Its unit is kJ/kg.
30. Petroleum was formed from the remains of dead sea animals when their bodies got burried under the layers of sand. These remains got converted into petroleum under high pressure and temperature.
 It is a dark coloured viscous liquid having foul smell called crude oil. Many useful components are derived from the crude oil with the help of fractional distillation.
 The process of converting petroleum into useful products by fractional distillation is called refining of petroleum.
31. **(b)** B and C
Explanation: In the given water tank, B and C are at the same levels. Hence, from taps B and C, water will flow out at the same pressure.
32. **(c)** 2.5kg
Explanation: Here, force = 5 N and acceleration = 2m/s . Force = Mass x Acceleration, Mass = Force/Acceleration. So, Mass = 5 N/2m/s = 2.5 Kg
33. Imagine, a man is standing behind a stationary car. The car does not move due to his presence.



(a) A man standing behind a stationary car.



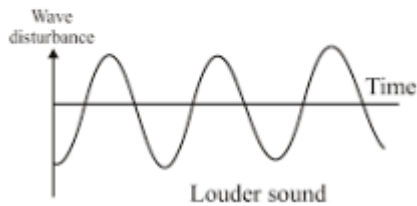
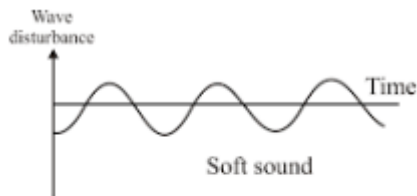
(b) A car being pushed by a man.

Now allow the man to push the car, it means he applies a force on the car. The car may begin to move in the direction of the applied force. Note that the man to push car to make it move. This example shows that at least two objects must interact with each other for a force to come into play.

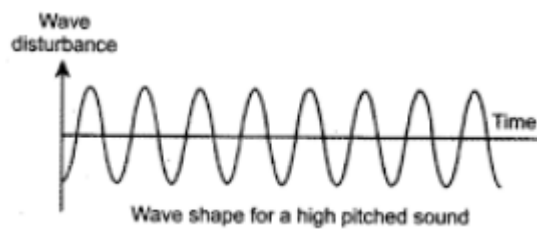
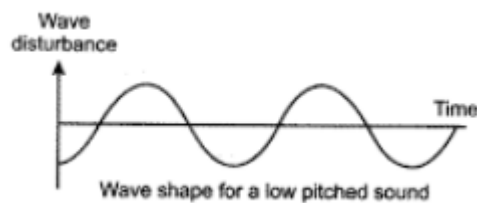
34. There will be two forces acting on the rocket:
- Upward force applied by the rocket engine.
 - Downward gravitational force applied by the earth.
35. The various effects of force are as follows:
- A force can change the state of motion, i.e. it can move a stationary body and it can stop a moving body also.
 - A force can change the speed of an object.
 - A force can change the direction of a moving body.
 - A force can change the shape and size of a body.
36. **(d)** spread a carpet on the wooden surface.
Explanation: The power reduces the friction between the surface. So, the ball will go at a longer distance due to less friction.
37. **(a)** Unnecessary expenses of energy
Explanation: Friction involves unnecessary expenses of energy because due to friction heat is generated which leads to more consumption of energy or fuel.
38. The surface of mortar and pestle used for grinding is etched again after prolonged use because the mortar and pestle lose their roughness after prolonged use (using for long time). As a result, the force of friction decreases and they do not grind properly. So they are etched to make them more effective for grinding again.
39. The boy having a bicycle with old tires is more likely to skid on the oily road because the old tires will experience less friction in comparison to that of new tires. To move on the oily road needs a larger force of friction. But the old tyres have less friction which is not enough to move on the oily road. Thus, it is most likely to skip.
40. Lubricants are the substances which help to reduce friction. Use of oils, lubricants and greases makes the surface smooth. In machines, friction is reduced by using lubricants. When oil, grease or lubricants is applied between the moving part of a machine, a thin layer is formed there and moving surfaces do not directly rub against each other. Interlocking of irregularities are avoided to a great extent so that the movement becomes smooth.
41. **(d)** Larger amplitude
Explanation: Loudness of sound depends upon amplitude of the sound. Higher the amplitude, louder the sound will be.
42. **(a)** solids, liquids and gases
Explanation: Sound needs a medium through which it can travel. Sound cannot travel through a vacuum. Sound can travel through solid, liquid, and gases.
43. Echo is the repetition of sound due to the reflection of original sound by a large and hard obstacle. An echo can be heard only if you are 17 meters away from the surface that reflects sounds. In a small hall distance is less than 17 meter that is why we cannot hear an echo in a small hall.
44. a. i. **Amplitude:** The loudness of a sound depends on its amplitude. If the amplitude of a sound is large, then the sound produced will also be loud.
 ii. **Frequency:** The pitch of a sound depends on its frequency. A sound will be considered a high pitched sound, if its frequency is high.

b. Sound is a wave motion, produced by a vibrating source. Sound is a form of energy that travels in the form of vibrations through the air or any another medium.

45. a.



b.



46. (a) DDT

Explanation: DDT is common toxic chemical that get accumulated by biomagnifications. DDT is non-biodegradable insecticide that accumulates at each trophic level.

47. (b) Junction of two or more sewers

Explanation: In Sewer network system, manhole is provided at junction of two or more sewers. Manhole is a deep, generally cylindrical structure.

48. a. CFCs- Chlorofluorocarbons

b. CNG- Compressed Natural Gas

c. LPG- Liquefied Petroleum Gas

49. a. Air pollutants- Substances which contaminate the air.

b. Smog- Mixture of smoke and fog.

c. Ganga Action Plan- An ambitious plan to save the river Ganga.

50. a. Vehicles produce high levels of pollutants like carbon monoxide, carbon dioxide, nitrogen oxides and smoke causing air pollution.

b. Carbon-monoxide is a poisonous gas and reduces the oxygen carrying capacity of the blood.

c. Emitted gases are cause of many respiratory diseases.

d. Forms smog, causing breathing difficulties like asthma, cough and wheezing in children especially during winters.

