Indian School Al Wadi Al Kabir

Midterm Examination (2024-2025)

Class: VIII | Sub: Science | Max. Marks: 80

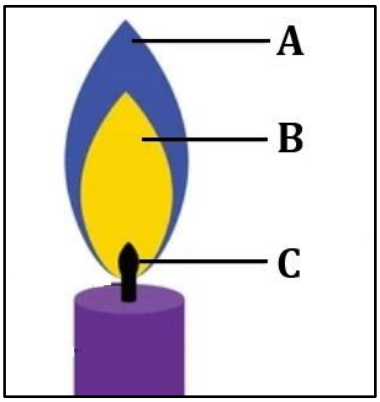
Date: 24/09/2024 | Set - II | Time: 2 ½ Hours

General Instructions:

i. All questions are compulsory. Marks are indicated against each section.
*ii. The question paper comprises **8 pages** and **39** questions in 5 sections A, B, C, D and E.*
*iii. Q 1 to Q 16 in **section A** -MCQ and carry ONE mark each. Write the correct answer along with the option in the answer script.*
*iv. Q 17 to Q 20 in **section A** are Assertion and Reason type questions and carry ONE mark each.*
*v. Q 21 to Q 26 in **section B** are Short Answer Type Questions and carry TWO marks each.*
*vi. Q 27 TO Q 33 in **section C** are Short Answer Type Questions and carry THREE marks each.*
*vii. Q 34 TO Q 36 in **section D** are Long Answer Type Questions and carry FIVE marks each.*
*viii. Q 37 TO Q 39 in **section E** are Case study/Paragraph Questions and carry FOUR marks each.*
ix. Write the same question number as given in the question paper.
x. Ink killer or whitener should not be used in the answer script.
xi. Diagrams should be drawn using a pencil.

SECTION A (1 × 20 = 20)

1. With the help of the image shown, identify the region in which complete combustion takes place and the region with incomplete combustion.



a) A and B
b) B and C
c) A and C
d) All of these

2. The amount of heat energy produced on complete combustion of 1 kg of a fuel is called:
   a) internal energy.
   b) significant value.
   c) heat value.
   d) calorific value.
3. Amar observed that fishes were coated with salt and kept in tray in the fish market. What is the likely use of coating fish with salt?

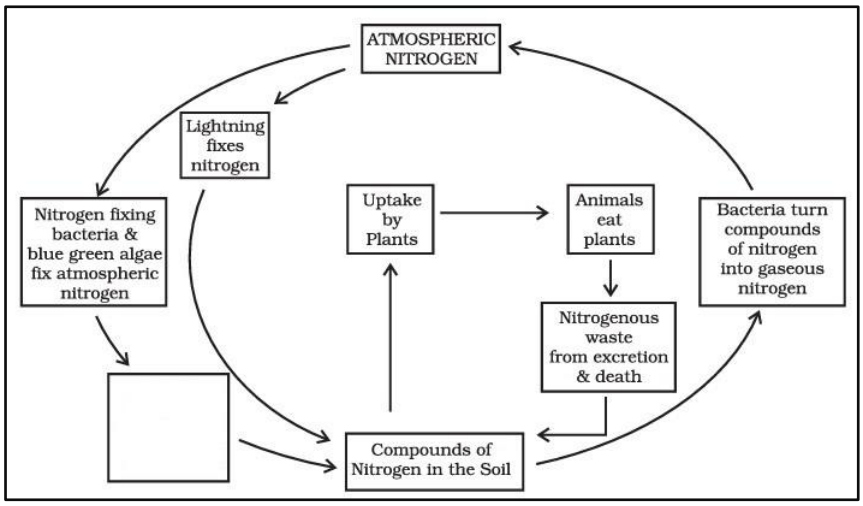
a) It increases the moisture content of the fish allowing it to survive longer.

b) It stops the growth of bacteria by reducing the moisture content.

c) It increases the salt content of the fish that enhances its taste.

d) It reduces the weight of the fish making the transport easier.

4. The image explains a nitrogen cycle.



What should be added to the blank box to complete the cycle?

a) Bacteria in turn fix nitrogen into nitrogenous compounds.

b) Bacteria fix oxygen into soil.

c) Bacteria convert the nitrogenous compounds into nitrogen gas.

d) Bactria mix oxygen gas with the soil.

5. What is true about the communicable disease ‘dengue’?

a) It occurs due to female Anopheles mosquitoes that act as carrier of dengue virus.

b) It occurs due to male Aedes mosquitoes that act as carrier of dengue virus.

c) It occurs due to male Anopheles mosquitoes that act as carrier of dengue virus.

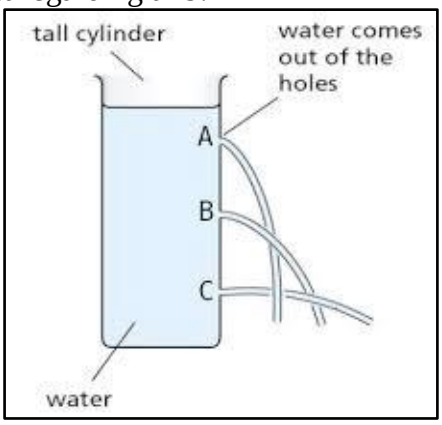
d) It occurs due to female Aedes mosquitoes that act as carrier of dengue virus.

6. The picture given below shows a child with a bucket of water in her hand.

Name the forces acting on a bucket containing water held above ground level in her hand; the forces acting on the bucket do not bring a change in its state of motion. Why?

a) Frictional force and electrostatic force; as balanced force does not bring a change in their state of motion.
b) Muscular force and force of gravity; as balanced force does not bring a change in their state of motion.
c) Gravitational and frictional force; as unbalanced force does not bring a change in their state of motion.
d) Electrostatic and gravitational force; as unbalanced force does not bring a change in their state of motion.

7. In the given figure, a beaker is filled with water. A, B and C are three holes in the beaker. Which of the following statements is correct regarding this?



a) The water comes out with maximum pressure from hole A.
b) The pressure of water coming out from hole B is greater than the pressure of water coming out from hole C and hole A.
c) The water falls out the farthest through the hole C.
d) The water falls out the nearest through the hole B.

8. A byproduct obtained after processing coal is useful in the manufacture of steel and in the extraction of many metals. The byproduct is _____.

a) Paraffin wax
b) Coke
c) Coal tar
d) Coal gas

9. Carbonisation is the -

a) Slow process of conversion of dead animals into coal.
b) Fast process of conversion of dead animals into coal.
c) Slow process of conversion of dead vegetation into coal.
d) Fast process of conversion of dead vegetation into coal.

10. When petroleum and natural gas are extracted through the rock layers, natural gas is found to be present above the oil. What explains the observation?

a) They have different masses.
b) They have different amount of impurities.
c) They have different physical states.
d) They have different densities.

11. A student went on a trip to a biosphere reserve called Panna in Madhya Pradesh and Keoladeo National Park in Rajasthan. Which common activity is likely to be observed in both the protected areas?

    a) Both the areas provide protective environment to fauna only.

    b) Both the areas provide shelter to humans as well as wild life.

    c) Both the areas allow human activities for interaction with wild animals.

    d) Both the areas do not interfere with the natural environment of the wildlife.

12. Bori Sanctuary and Satpura National Park are present in the Pachmarhi Biosphere Reserve. How do these areas help in protecting the plants and animals?

    a) These large areas provide artificial habitat to wild life.

    b) These large areas conserve organisms and their habitats.

    c) These large areas control the number of wildlife by preventing natural breeding.

    d) These large areas prevent the interaction of organisms with wildlife to keep them safe.

13. How does decrease in the number of trees link with shortage of water?

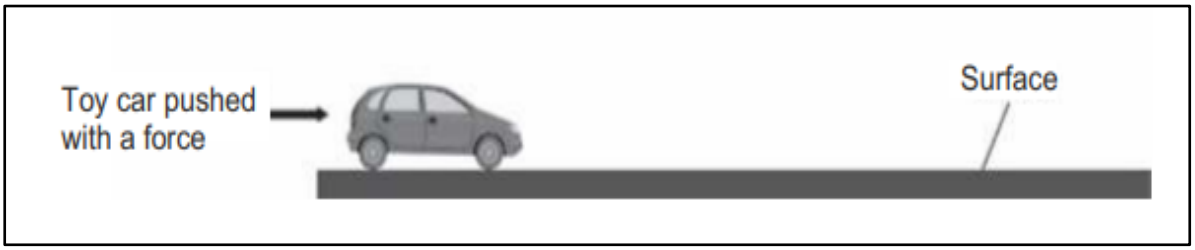
    a) Deforestation increases Earth's temperature resulting in less rainfall.

    b) Deforestation decreases Earth's temperature which reduces the moisture content of air.

    c) Deforestation disturbs the soil composition leading to high water retention by the soil.

    d) Deforestation prevents the absorption of water by the plants reducing groundwater level.

14. Rahul wanted to find out which among the four surfaces produce the greatest friction. He pushed the same toy car on the four surfaces separately.



Rahul noted the distance travelled by toy car on each surface before stopping.

	Surface 1	Surface 2	Surface 3	Surface 4
Distance travelled by the toy car before stopping	120 cm	150 cm	100 cm	180 cm

On which surface did the toy car experience the greatest friction?

a) Surface 1 b) Surface 2

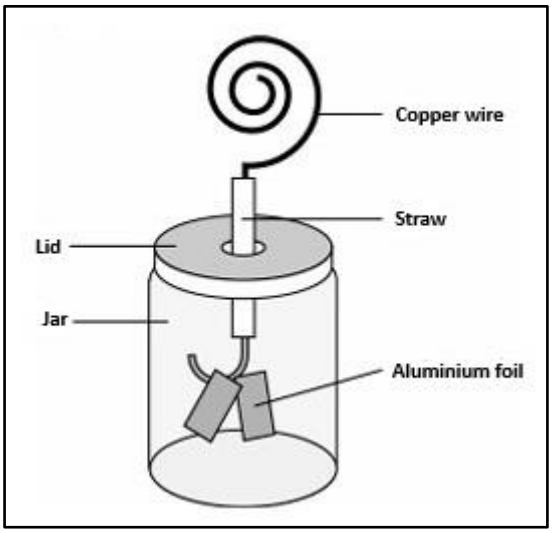
c) Surface 3 d) Surface 4

15. The ancient Greeks knew as early as 600BC that a certain type of resin when rubbed with fur could attract light objects like hair. Name the resin.

a) Rubber b) Apricot

c) Amber d) Ebonite

16. A student studies that an electroscope consists of two aluminium foils as shown in the image. He brought a charged object near the copper wire to test the working of the device. What changes are likely to be observed when a charged object is brought closer to copper wire?



a) The copper wire unwinds.

b) Colour of the aluminium foil changes.

c) Aluminium foils repel each other.

d) The foils stick to each other.

For the following questions, two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii), and (iv) as given below -

(i) Both A and R are true and R is the correct explanation of the assertion.

(ii) Both A and R are true but R is not the correct explanation of the assertion.

(iii) A is true but R is false.

(iv) A is false but R is true

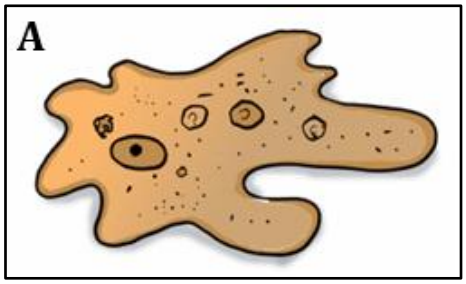
17. **Assertion (A):** Disease-causing microorganisms are called pathogens.
    Reason (R): To prevent the spread of diseases, it is better to keep a distance from infected persons.
18. **Assertion (A):** A ball rolling along the ground, gradually slows down and finally comes to rest.
    Reason (R): This happens due to the force of friction between the ball and the ground.
19. **Assertion (A):** Friction is always a beneficial force in every situation.
    Reason (R): Friction helps in preventing slipping and aids in holding objects in place.
20. **Assertion (A):** The magnitude of an earthquake is measured on the Richter scale.
    Reason (R): An earthquake measuring 7 or more on the Richter scale can cause less impact to life and property.

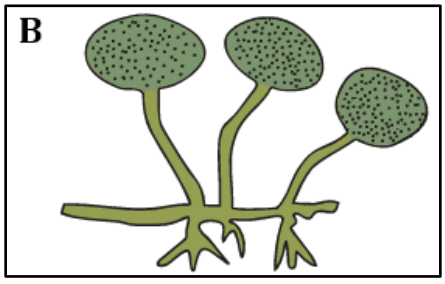
SECTION B (2 × 6 = 12)

21. a) State the conditions necessary for combustion to take place.
    b) Kerosene oil produces flame whereas coal does not produce a flame. Justify this statement.
22. What are antibiotics? Mention **any two** precautions to be taken while using antibiotics.
23. Over what area should a force of 400 N act to produce a pressure of 20 Pascal?
24. Write the difference between inexhaustible natural resources and exhaustible natural resources with examples.
25. a) What is the importance of Red Data Book?
    b) What is Project Tiger?
26. Explain the construction and working of a spring balance.

SECTION C (3 × 7 = 21)

27. a) How is rapid combustion different from spontaneous combustion?
    b) Why is carbon dioxide fire extinguisher considered as an excellent fire extinguisher?
28. a) How is pasteurisation of milk done?
    b) Identify the given microorganisms **A** and **B** and name the group that they belong to:





29. a) How do vaccines protect the body from the attack of disease-causing germs?
    b) What is fermentation? Who discovered the process of fermentation?
30. a) Write **any two** differences between balanced and unbalanced force.
    b) We know that there is a huge amount of atmospheric pressure on us but we do not experience its effect. Why?
31. a) Explain the process of formation of petroleum.
    b) What is meant by refining of petroleum?
32. a) What are the aims of Forest Conservation Act in India?
    b) Differentiate between endangered and extinct species. Give examples for each.
33. a) What is drag? How can it be minimised?
    b) How does the use of ball bearings help in reducing friction?

SECTION D (5 × 3 = 15)

34. a) Write **any two** characteristics of an ideal fuel.

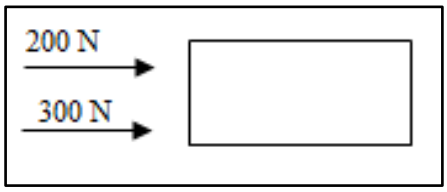
    b) The empty paper cup burns immediately, but the cup with water does not catch fire quickly. Why?

    c) 40 kg of fuel was completely burnt for an experiment. The amount of heat energy was found to be 1,60,000 kJ. Calculate the calorific value of the fuel.

35. a) State any **two** effects of force.

    b) Why is it difficult to pull the rubber sucker off from the surface where it is stuck?

    c) Two forces 200N and 300N are acting on a body in the same direction. What is the resultant force?



36. a) Draw a neat and labelled diagram to show the structure of earth.

    b) What are seismic waves? How are these waves recorded?

    c) Give reason:

    i) We hear crackling sounds when we take off woollen sweaters.

    ii) A copper rod cannot be charged by friction if held by hand.

SECTION E (4 × 3 = 12)

37. **Many useful substances are obtained from petroleum and natural gas. These are termed as 'Petrochemicals'. These are used in the manufacture of detergents, fibres (polyester, nylon, acrylic etc.), polythene and other man-made plastics. Due to its great commercial importance, petroleum is also called 'black gold'. CNG is considered to be a better fuel because it burns with a smokeless flame and causes no air pollution. It does not produce any poisonous gases on burning. It is a cleaner fuel.**

    We know that coal and petroleum are fossil fuels. Burning of fuel will produce carbon dioxide which is a greenhouse gas. This results in global warming. In India, the Petroleum Conservation Research Association (PCRA) advises people how to save petrol/diesel while driving. Their tips are: drive at a constant and moderate speed as far as possible, switch off the engine at traffic lights or at a place where you have to wait, ensure correct tyre pressure, and ensure regular maintenance of the vehicle.

    a) What are petrochemicals? Mention two uses.

    b) Mention any **two** tips given by PCRA to save petrol while driving a vehicle.

    c) Why is CNG considered as a better fuel than petrol?

38. **Friction is caused by the irregularities on the two surfaces in contact. Friction can never be eliminated but it can be reduced. No surface is perfectly smooth. Some irregularities are always present on surfaces. Friction comes into play when irregularities present on the surfaces of two objects in contact get interlocked with each other. In sliding, the time taken for interlocking is very less. Hence, interlocking is not strong. Therefore, less force is required to overcome this interlocking. Because of this reason, sliding friction is less than static friction.**

    Friction also produces heat. If you rub your hands together quickly, they become warmer. When you walk, friction is caused between the tread on shoes and the ground. This friction acts to grip the ground and prevent sliding. The force of friction between the ground and feet decreases when there is soapy water spilt on the floor. Hence, it becomes difficult to walk on the soapy floor.

    a) Is it possible to reduce friction to zero by polishing surfaces or using lubricants? Explain.

    b) You spill a bucket of soapy water on a marble floor accidentally. Would it be easier or more difficult for you to walk on the floor? Why?

    c) Sliding friction is slightly lesser than the static friction. Explain.

39. **Vigorous movement of air current and water droplets result in building up of charges in the clouds. This is the main cause of lightning. Lightning Conductor is a device used to protect buildings from the effect of lightning. The process of transferring charge from a charged object to the earth is called earthing. A metallic rod, taller than the building, is installed in the walls of the building during its construction. One end of the rod is kept out in the air and the other is buried deep in the ground. The rod provides easy route for the transfer of electric charge to the ground.**

    Open vehicles, like motorbikes, tractors, construction machinery, and open cars are unsafe during lightening. Open fields, tall trees, shelters in parks, and elevated places do not protect us from lightning strikes. Carrying an umbrella is not a good idea to protect ourselves from lightening during thunderstorms. If in a forest, it is advisable to take shelter under shorter trees. 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.

    a) How is a lightning conductor used to protect a building?

    b) What is meant by earthing?

    c) Suggest any **two** measures to protect ourselves from lightning.