Brain International School

Vikas Puri, New Delhi

ASSIGNMENT NO. 3

SUBJECT: SCIENCE CLASS-VIII JULY'2025

Chapter-3 Coal and petroleum

1. **Choose the correct option:**

i. Coal is processed in industries to get some useful products. Which of the following is not obtained from coal?

a) coke b) coal tar c) coal gas d) CNG

ii. Which of the following is used to make steel?

a) CNG b) coke c) coal tar d) bitumen

2. **In each of the following questions, two statements are given one labelled. Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions the codes (a), (b), (c) and (d) as given below:**

a) Both A and R are true, and R is correct explanation of the assertion.

b) Both A and R are true, but R is not the correct explanation of the assertion

c) A is true, but R is false

d) Both assertion and reason are false.

(i) Assertion: Petroleum is called "black gold."

Reason: Petroleum is black in colour and has a high economic value.

(ii) Assertion: Coal is used in thermal power plants to generate electricity.

Reason: Coal is a good conductor of electricity.

3. Answer the following question.

1. Define exhaustible and inexhaustible natural resources and give two examples of each.
2. While driving what are the tips we must follow to save petrol/diesel/natural gas?
3. Write the characteristics and some important uses of coal.
4. We read in newspapers that burning of fuels is a major cause of global warming. Explain why?
5. Describe how coal was formed. What is this process called?

4. Answer the following case study-based questions

In a small town named Rajgarh, the local government noticed a rapid increase in fuel consumption. Most households used coal for cooking, and vehicles ran on petrol and diesel. The town faced frequent power cuts, as the nearby thermal power plant struggled to meet demand due to a shortage of coal. The local environment also started degrading, with rising levels of smoke and pollutants in the air. Meanwhile, a few families began switching to LPG and solar cookers. The government launched an awareness campaign to educate people about the importance of conserving fossil fuels and using alternative energy sources.

(i) What are fossil fuels? Give two examples from the case study.

(ii) Why is coal considered a non-renewable resource?

(iii) What problems did Rajgarh face due to over-dependence on coal and petroleum?

(iv) Mention two alternative energy sources mentioned in the case study. How are they better than coal and petroleum?

Chapter -9: Friction

1**. Choose the correct option:**

i. To sharpen the blade of a knife by rubbing it against a surface, which of the following will be most suitable?

a) stone b) plastic block

c) wooden block d) glass block

ii. Which of the following is not a smooth surface?

a) surface of wet soap b) surface of tyres

c) glazed tiles d) surface of mirror

2. In each of the following questions, two statements are given one labeled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

a) Both A and R are true, and R is correct explanation of the assertion.

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

c) A is true, but R is false.

d) Ais false, but R is true.

(i) **Assertion**: Drag gives energy to birds to fly.

Reason: Birds have streamlined shape of body.

(ii) **Assertion**: Static friction has a constant value.

Reason: Static friction is a self-adjusting force.

3. Answer the following question.

1. Name two methods of reducing friction
2. Which type of surfaces produce a) least friction and b) too much friction.
3. The handle of a cricket bat or a badminton racquet is usually rough. Why?
4. Explain four different kinds of friction with examples.
5. We have two identical metal sheets. One of them is rubbed with sand paper and the other with ordinary paper. The one rubbed with sand paper shines more than the other. Give reason.

4. Answer the following case study-based question

Arjun and Meera went to a skating rink. Arjun was a beginner, and he found it difficult to move on the smooth ice. Meera, who had some experience, explained that friction between the skate and ice helps to stop or slow down, but too much friction makes it hard to move. Later, Arjun tried skating on a rough surface outside the ring and found it even harder to move. Meera also showed him how applying oil to a bicycle chain helps it move smoothly by reducing friction.

(i) Why was it difficult for Arjun to move on the rough surface compared to the smooth ice?

(ii) Explain how friction helps while skating and how it can also be a hindrance.

(iii) Why is oil applied to bicycle chains? How does it affect friction?

(iv) Name two ways to reduce friction in machines or vehicles.