##Wrwdd#Qr#r#sdjhv0#B5

Class-VIII
Annual Examination-2023-24
Marking scheme
Subject: CHEMISTRY
Set: A1/A2

General Instructions : **Maximum marks:20**

i) All questions are compulsory.
ii) Question 1 and 2 carry 1 mark for each part.
iii) Question 3, 4 and 5 carry 2 marks each.
iv) Question 6 and 7 carry 3 marks each. Internal choice has been given in both.
v) Question 8 is Case Based and carries 3 marks.

Q.No	Q.No	Questions with expected answers	Marks
Set A1 1(i)	Set A2 2(i)	**Choose the correct option for the following:** Read the following statements and select the correct ones. i. Coal, petroleum and natural gas are fossil fuels. ii. Coal and natural gas are exhaustible resources. iii. Coke is used in the manufacture of steel. iv. Fossil fuels are present in limited quantities. (a) i and ii **(b) i, ii, iii and iv** (c) i, ii and iii (d) i and iv	1
(ii)	(ii)	Which of the following when added to water will not conduct electricity? (a) Salt **(b) Honey** (c) Vinegar (d) Lemon juice	1
(iii)	(iii)	An electric current can produce: (a) Heating effect (b) Chemical effect (c) Magnetic effect **(d) Chemical, heating, and magnetic effects.**	1
(iv)	(iv)	The substances which have very low ignition temperature will **(a) Catch fire easily** (b) Will not catch fire (c) Catch fire after some time (d) None of these.	1

2	1	These consist of two statements are given- Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below: (a) Both A and R are true, and R is the 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) A is false, but R is true. **Assertion:** A combustible substance cannot catch fire or burn as long as its ignition temperature is reached. **Reason:** Ignition temperature is the highest temperature at which a substance can catch fire. **Ans. c**	1
3	4	(a) What does PCRA stand for ? (b) Mention any two tips suggested by PCRA for saving petrol. **Ans.** **(a) Petroleum Conservation Research Association (PCRA)** **(b) 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** **- ensure regular maintenance of the vehicle(any two)** **OR** Describe how coal is formed from dead vegetation. What is this process called? **Ans.** **About 300 million years ago the earth had dense forests in low lying wetland areas. Due to natural processes, like flooding, these forests got buried under the soil. As more soil deposited over them, they were compressed. The temperature also rose as they sank deeper and deeper. Under high pressure and high temperature, dead plants got slowly converted to coal.** **As coal contains mainly carbon, the slow process of conversion of dead vegetation into coal is called carbonisation.**	1+1=2 2
4	3	Explain how water can control fire by giving any two reasons. **Ans. Water cools the combustible material so that its temperature is brought below its ignition temperature. This prevents the fire from spreading. Water vapours also surround the combustible material, helping in cutting off the supply of air. So, the fire is extinguished.**	1+1=2

5	5	**Set A1** Differentiate between rapid and spontaneous combustion. **Ans. When a substance burns rapidly and produces heat and light, such combustion is known as rapid combustion. Eg. burning of match stick, paper etc.** **The type of combustion in which a material suddenly bursts into flames, without the application of any apparent cause is called spontaneous combustion. Eg. Phosphorus, forest fire, coal dust etc.** **Set A2** Differentiate between spontaneous combustion and explosion. **Ans. When a cracker is ignited, a sudden reaction takes place with the evolution of heat, light and sound. A large amount of gas formed in the reaction is liberated. Such a reaction is called explosion. Explosion can also take place if pressure is applied on the cracker.** **The type of combustion in which a material suddenly bursts into flames, without the application of any apparent cause is called spontaneous combustion. Eg. Phosphorus, forest fire, coal dust etc.**	1+1=2
6	7	Give reasons for the following: (a) Tap water can conduct electricity while distilled water cannot. (b) When the free ends of a tester are dipped into a solution, the magnetic needle shows deflection. (c) Tin cans, used for storing food, are made by electroplating tin on iron. **Ans. (a) Tap water contains several salts dissolved in it. Small amounts of mineral salts are naturally present in it. This water is thus a good conductor of electricity. On the other hand, distilled water is free of salts and is a poor conductor.** **(b) The deflection in the magnetic needle shows that the circuit is complete and the solution conducts electricity, i.e., it is a good conductor.** **(c) Tin is less reactive than iron. Thus, food does not come into contact with iron and is protected from getting spoilt.**	1+1+1=3
7	6	Observe the picture given below and answer the following questions: 	1+1+1=3

(a) What will you observe when a glass slide is kept on the top of a candle flame?

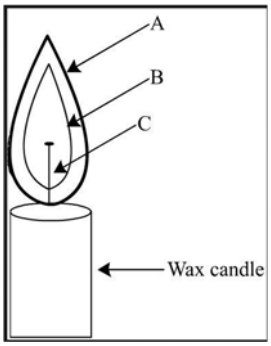
(b) Which zone of candle flame is responsible for the above observation and why?

(c) A wax candle burns with a flame while a piece of charcoal does not. Why?

Ans. (a) Soot will get deposited on it.
(b) Luminous/ middle zone/ yellow zone due to incomplete combustion.
(c) The substances which vaporise during burning, give flames. For example, kerosene oil and molten wax rise through the wick and are vaporised during burning and form flames. Charcoal, on the other hand, does not vapourise and so does not produce a flame.

OR

Study the picture given below and answer the following questions:



(a) Out of A, B and C zones , identify :
(i) Zone of complete combustion
(ii) Luminous zone

Ans. (i) A
(ii) B

(a) Define calorific value.

Ans. The amount of heat energy produced on complete combustion of 1 kg of a fuel is called its calorific value.

(b) In an experiment 40 kg of coal was completely burnt. The heat produced was measured to be 360,000 kJ. Calculate the calorific value of the fuel.

Ans. Calorific value= Heat released/ Mass of fuel burnt
= 360000/ 40
= 9000 kJ/kg

8	8	The burning of fossil fuels refers to the burning of oil, natural gas, and coal to generate energy. We use this energy to generate electricity, and to power transportation (for example, cars and planes) and industrial processes. Ever since the invention of the first coal-fired steam engines of the 1700s, our burning of fossil fuels has steadily increased. Across the globe each year we now burn over 4,000 times the amount of fossil fuels burnt during 1776. The effects of the burning of fossil fuels are having far-reaching effects on our climate and ecosystems. (a) How is burning of fossil fuels responsible for Global Warming? (b) Why are unburnt carbon particles harmful for us? (c) Burning of fossil fuels like coal and diesel releases harmful oxides which are responsible for acid rain. Name any two gases that dissolve in rain water to cause acid rain. **Ans.** **(a) Combustion of most fuels releases carbon dioxide in the environment. Increased concentration of carbon dioxide in the air is believed to cause global warming.** **(b) These fine particles are dangerous pollutants causing respiratory diseases, such as asthma/ reduce visibility.** **(c) Oxides of Nitrogen and Sulphur**	1+1+ 1=3