Delhi Public School, Howrah

FINAL EXAMINATION (2024-2025)

Class-VIII

Care must be taken not to write anything on the question paper. All the questions must be attempted in the correct sequence.

Subject:- Science

Time:-3 Hours **F.M.-80**

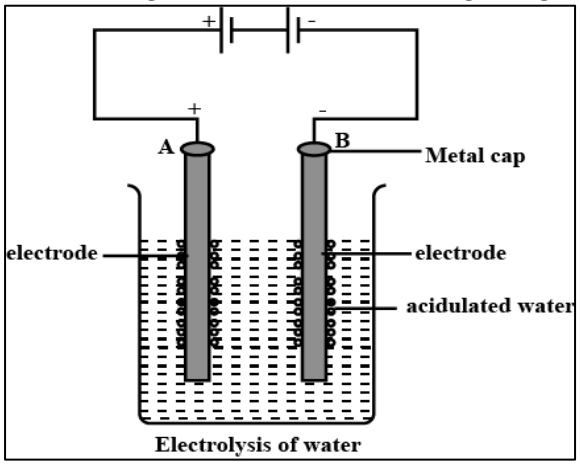
General Instructions:

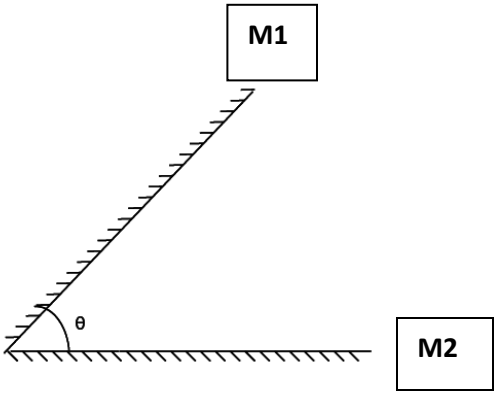
i. **This question paper consists of 39 questions in 5 sections.**
ii. **All questions are compulsory.**
iii. **Section A consists of 20 objective type questions carrying 01 mark each.**
iv. **Section B consists of 6 Very Short Answer type questions carrying 02 marks each. Answers to these questions should be in the range of 30 to 50 words.**
v. **Section C consists of 7 Short Answer type questions carrying 03 marks each. Answers to these questions should be in the range of 50 to 80 words.**
vi. **Section D consists of 3 Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.**
vii. **Section E consists of 3 source-based/case-based units of assessment of 04 marks each with sub-parts.**

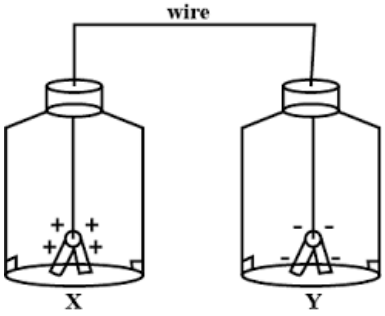
SECTION A

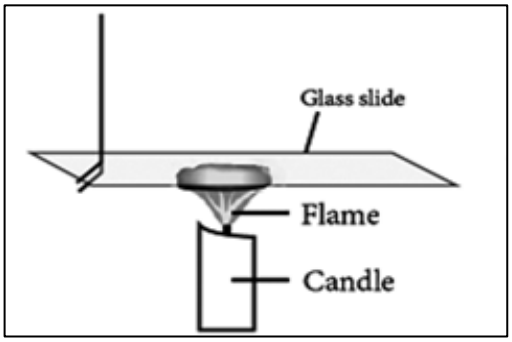
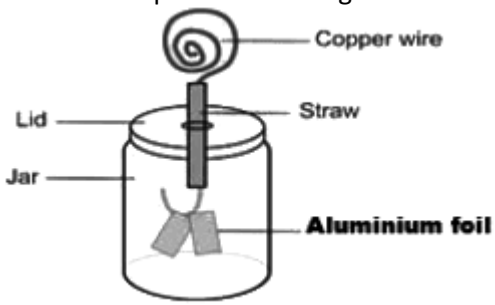
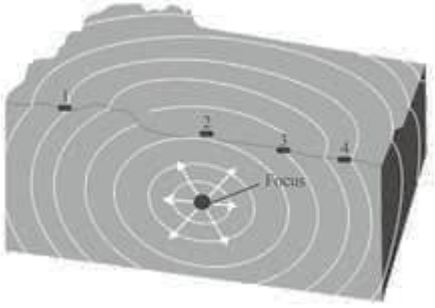
Select and write one most appropriate option out of the four options given for each of the questions 1-20. There is no negative mark for incorrect response.

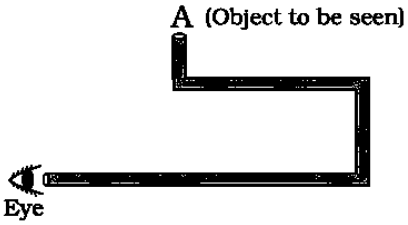
Q. No.	Questions	Marks
1.	8 kg of fuel 'A' produces 40,000 kJ heat energy and 10 kg of fuel 'B' produces 45,000 kJ heat energy on burning completely. Which one of the two fuels is a better fuel compared to another? (a) Fuel 'B' is a better fuel as it produces more heat energy. (b) Fuel 'A' is a better fuel as it produces more heat energy. (c) Both fuel 'A' and 'B' have equal fuel efficiency. (d) Fuel efficiency of a fuel is independent of the amount of heat energy produced.	**1**
2.	Which of the following statement is INCORRECT regarding 'coke'? (a) It is the black residue left after destructive distillation of coal. (b) It has a porous and rough surface. (c) It is almost as pure as the coal found in nature. (d) It has importance in metal industries.	**1**
3.	Inside soda acid type fire extinguisher solution of substance 'P' reacts with an acid 'Q'. They form a gas 'R' that is released with great pressure and extinguishes mostly all type of fires. Identify 'P', 'Q' and 'R'. (a) 'P'= Sodium chloride, 'Q'= Hydrochloric acid, 'R'= Oxygen. (b) 'P'= Sodium bicarbonate, 'Q'= Hydrochloric acid, 'R'= Oxygen. (c) 'P'= Sodium chloride, 'Q'= Sulphuric acid, 'R'= Carbon dioxide. (d) 'P'= Sodium bicarbonate, 'Q'= Sulphuric acid, 'R'= Carbon dioxide.	**1**

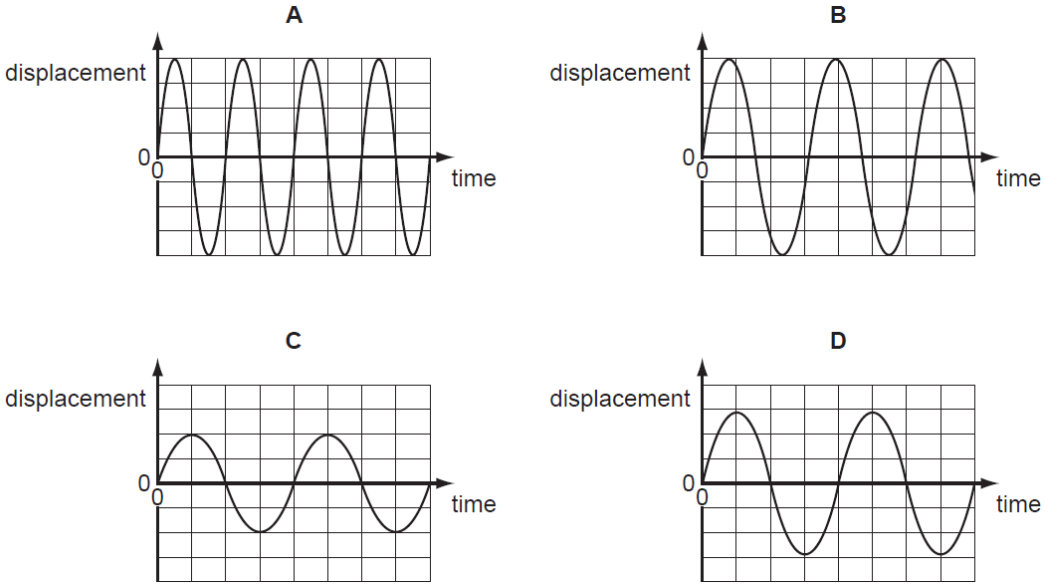
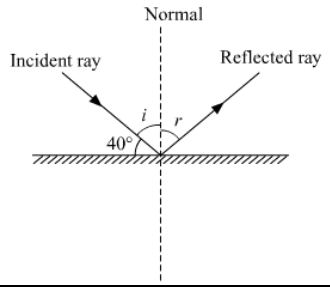
4.	A tester is used to check the conduction of electricity through two liquids, labelled as 'A' and 'B'. It is found that the bulb of the tester glows brightly for liquid A, while it glows very dimly for liquid B. What conclusion can be obtained from this observation? (a) Liquid 'B' is a better conductor than liquid 'A'. (b) Liquid 'A' is a better conductor than liquid 'B'. (c) Both liquids are equally conducting. (d) Liquid 'B' is a non-conducting liquid.	**1**
5.	Substances like petrol, kerosene, diesel etc. are obtained from crude petroleum by a process. What is the name of the process? (a) Destructive distillation. (b)Simple Distillation. (c) Steam distillation. (d) Fractional distillation.	**1**
6.	Below there is a diagram for electrolysis of acidified water solution. On passing electricity the bulb glows in the following set-up. Gas bubbles formation is also observed during this process. Which of the following statement is CORRECT regarding this electrolysis?  Electrolysis of water (a) Presence of free electrons in the solution makes the bulb glow. (b) Hydrogen gas is produced near anode and oxygen gas is produced near cathode. (c) The gas bubbles observed in solution are the bubbles of carbon dioxide gas. (d) Presence of cations and anions in solution makes the bulb glow.	**1**
7.	Which of the following conditions are required for formation of coal? (a) High temperature and low pressure. (b) Low temperature and low pressure. (c) High temperature and high pressure. (d) Low temperature and high pressure.	**1**
8.	To perform an experiment on mushrooms, which of the following sets of conditions are essentially required? **Temperature** / **Humidity** A. 0-5 °C / Low B. 0-10 °C / Moderate C. 25-35 °C / High D. 50-60 °C / Low (a) A (b) B (c) C (d) D	**1**

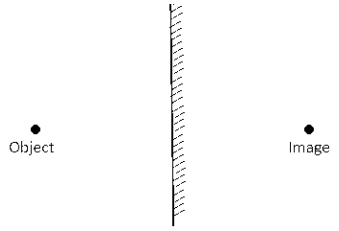
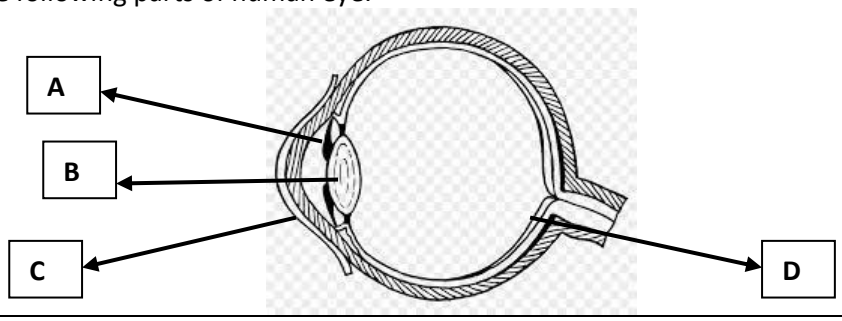
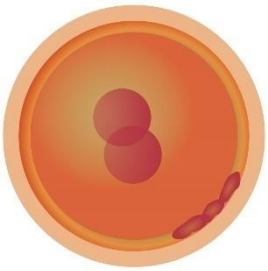
9.	Sima was blessed with a baby sister last week. Identify the child's chromosomal combination. (a) 22 + XX (b) 44 + XY (c) 22 + XY (d) 44 + XX	**1**
10.	When the ovum released by the ovary does not get fertilised, it leads to the (a) Degeneration of sperms and implantation of ovum in the uterus. (b) Disintegration of the walls of the oviducts and bleeding. (c) Development of the mature egg cell into an embryo. (d) Rupturing the blood vessels and the lining of the uterus.	**1**
11.	Rahul mixes some Maida flour with water and sugar.He also adds small amounts of yeast powder in the mixture. After two hours, he saw that the dough rises. What made the dough to rise? (a) Reaction of Maida flour with sugar. (b) Release of energy by yeast cells after consumption of Maida flour. (c) Division of yeast cells and production of gas. (d) Release of heat due to enlargement of yeast cells.	**1**
12.	Match the following and choose the correct option. **COLUMN A** / **COLUMN B** A. Turning the handle-bar of a bicycle at crossroads — I. Force stops the motion of a body B. Stepping on to the pedal of a standing bicycle — II. Force increases the speed of a moving body C. Applying the brakes of a bicycle to bring it to rest — III. Force starts the motion of a body D. Pedaling towards the finishing line in a cycle race — IV. Force changes the direction of a moving body (a) A-IV, B-III, C-I, D-II (b) A-II, B-III, C-I, D-IV (c) A-IV, B-II, C-III, D-I (d) A-II, B-III, C-IV, D-I	**1**
13.	Two plane mirrors M1 and M2 are kept at the following angles one by one. In which case the maximum number of images is formed?  (a) 30° (b) 60° (c) 45° (d) 90°	**1**

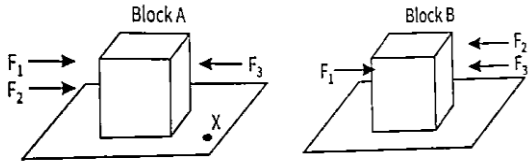
14.	Two electroscope, one positively charged (X) and the other negatively charged (Y) are connected with a copper wire as shown in figure. Which of the following is likely to happen?  (a) Electrons will move from X to Y (b) Protons will move from X to Y (c) Electrons will move from Y to X (d) Protons will move from Y to X	**1**
15.	An ambulance with its siren sounding is standing in heavy traffic. A pedestrian notices that although the loudness of the sound produced does not change, its pitch varies. Which option in the following is responsible for the change in its pitch?  (a) Amplitude is constant, Frequency is varying (b) Amplitude is constant, Frequency is constant (c) Amplitude is varying, Frequency is constant (d) Amplitude is varying, Frequency is varying	**1**
	Q. no 16 to 20 are Assertion - Reasoning based questions. **These consist of two statements – 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 A** **(b) Both A and R are true and R is not the correct explanation of A** **(c) A is true but R is false** **(d) A is False but R is true**	
16.	Assertion (A): Tin is electroplated on iron to make cans useful for storing food. Reason (R): Tin is less reactive than iron and hence coating of tin prevents food from coming in contact with iron and thus, prevents it from getting spoiled.	**1**
17.	Assertion (A): An elephant of weight 25600 N stands on four feet. If the area of each foot is approximately 250 cm^2 then the pressure exerted on the ground is 256000 Pa. Reason(R): Pressure is directly proportional to the area of contact and directly proportional to the force.	**1**
18.	Assertion (A): Menstruation marks the absence of fertilization. Reason (R): Reproductive phase of females span from menarche to menopause.	**1**
19.	Assertion (A): In production of offspring, formation of zygote is necessary. Reason (R): There are two modes of reproduction occur.	**1**

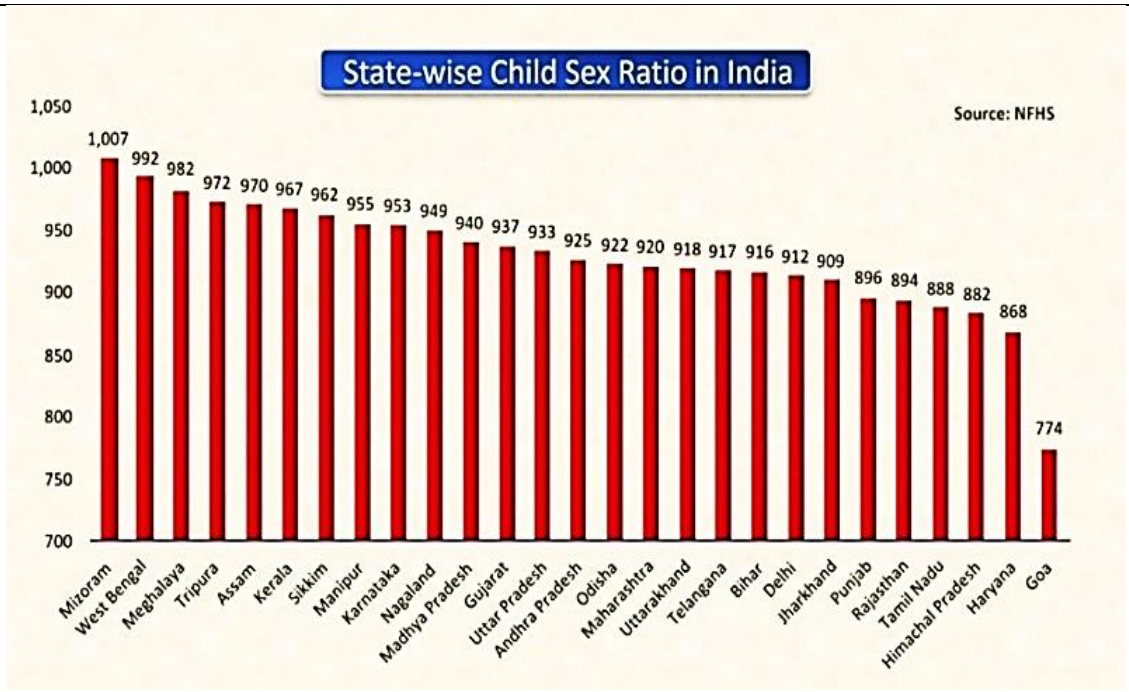
20.	Assertion (A): The growth of hairs on face is moustaches and beard. Reason(R): This is primary sexual characters in male.	**1**
	SECTION B **Q. no. 21 to 26 are very short answer questions.**	
21.	Burning of white phosphorous is a spontaneous combustion, whereas, burning of CNG is not. Explain why.	**2**
22.	A glass plate was introduced into the luminous zone of a steady candle flame and was held for few seconds as shown in the diagram below. Then it was removed. What change will you observe on the glass plate? Explain the reason behind your observation.  	**2**
23.	Fishes and frogs both live in water and lay eggs. But the phenomenon of metamorphosis is observed in frogs but not in fishes. Why?	**2**
24.	(a) Seetha prepared an electroscope as shown in the figure. She has replaced the copper wire with ebonite rod. When charged body was brought in contact with the ebonite rod, she observed that the aluminium strips did not diverge. What is the reason behind it?  (b) The diagram shows the focus of an earthquake. Focus is the point inside the Earth's crust where the earthquake originates. 1, 2, 3 and 4 are four locations on the Earth's surface. In which location will the effect of the earthquake be maximum and why?  	**2**
25.	A group of students made a periscope with the help of pipes, to see an object which they could not see directly with their eyes.	**2**

	 (a) How many mirrors should they use to see the object? What angle should the mirrors be placed at with respect to the horizontal? (b) Where the mirrors should be placed in the figure? Show with proper diagram and also indicate the direction of rays in the figure.	
26.	(a) Find the relation between the given two pictures.  **A-**  **B-** (b) Write two common uses of yeast.	**2**
	SECTION C **Q.no. 27 to 33 are short answer questions.**	
27.	A group of students of class VIII were performing an experiment to check the conductivity for some sample solutions. What will be their conclusion regarding the conductivity of the following sample solutions at the end of the experiment? Also mention the reasons for such conclusions in each case. i. Brine solution (aqueous solution of table salt). ii. Aqueous sugar solution. iii. Rain water sample collected from a polluted area.	**(1+1+1) =3**
28.	Three different incidents of fire accidents are described below. State what type of fire extinguisher you should use or what particular precautions you should take in each case to extinguish the fire. Explain your answer with proper scientific reasons. (a) A small fire broke out in a chemistry lab due to a chemical spill. (b) Ranu was cooking in the kitchen when the cooking oil suddenly caught fire. (c) A room has caught fire due to electrical short circuit.	**(1X3=3)**
29.	(a) Observe the given picture carefully and name the natural food preservative used to prevent its spoiling. Also, write the principle involved.  (b) How are carriers harmful to us? (c) Who discovered the vaccine for small pox?	**3**
30.	Three females going through different stages of the female reproductive cycle are listed below: **Maya—Releases unfertilised egg from the uterus once a month** **Rekha—The process of release of unfertilised egg from the uterus has stopped.**	**3**

	Navya— The release of unfertilised egg from the uterus begins. (a) Name the stages to which Maya, Rekha and Navya belong. (b) Arrange the three females in ascending order of their age groups. (c) Enlist the changes in the uterine walls which lead to menstruation in females.	
31.	An empty plastic bottle was sealed on a mountaintop and brought down to the plains. Then it was observed that the bottle was squeezed from inside as shown in the picture below.  (a) Why did it happen with the bottle? (b) Would you have observed the same effect if the bottle was completely filled with water? Explain in your own words.	**(1.5+1.5)=3**
32.	Look at the graphs that represent sound waves produced by four objects A, B, C and D and answer the questions that follows with proper justification. Take 1 square box=1cm along Y-axis for your calculations.  (a) Which two objects produce sounds of similar frequencies but different amplitudes? (b) Pick out the two waves that represent sounds of the same amplitude but different frequencies. (c) Which object produces the maximum shrill sound?	**(1+1+1)=3**
33.	(a) If the angle between the plane mirror and the incident ray is 40°, what are the angles of incidence and reflection?  	**(1+1+1)=3**

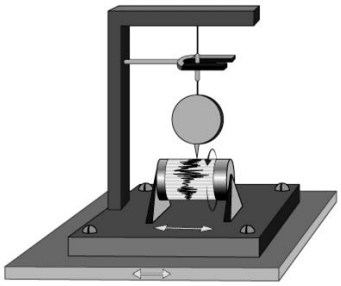
	(b) An object is placed 2 cm from a plane mirror. If the object is moved by 1 cm towards the mirror, what will be the distance between the object and its new image?  (c) Label the following parts of human eye.  	
	SECTION-D **Q.no. 34 to 36 are long answer questions.**	
34.	Prakash wants to do an experiment of copper plating. But he finds only one copper plate. Therefore, he takes a carbon rod as another electrode. Prakash starts the experiment with the materials available. (a) What cathode, anode and electrolyte should Prakash take in his experiment? (b) What will be his observation at the end of the experiment? Justify your answer with proper reason. (c) Draw a diagram of the experiment set-up of Prakash and label cathode, anode and electrolyte.	**(1.5+2 + 1.5)=5**
35.	(a) Humans reproduce sexually. The gestation period in humans is around nine months during which many changes take place and ultimately a baby is born. Observe the picture given below showing a stage in the formation and development of offspring in humans and answer the questions that follow:  i. Identify the stage shown in the given picture. ii. Name the process which leads to this stage. Also define it. (b) Draw a diagram of the female reproductive system and label the following in it. i. The part through which the sperms enter the female body. ii. The part from where the ova are released. iii. Where fertilisation takes place. iv. Where the complete embryo development takes place.	**5**

36.	Three forces F_1, F_2 and F_3 were exerted on two identical blocks A and B at the same time as shown in the figure.  |	F_1 | F_2 | F_3 | |---|---|---|---| | a. | 10 | 30 | 20 | | b. | 20 | 10 | 20 | | c. | 20 | 20 | 10 | | d. | 30 | 10 | 20 | (a) Which of the following combinations of forces F_1, F_2 and F_3 (expressed in N) will be correct to ensure that block A moves towards point X while block B remains stationary? Also give proper reason for your answer. (b) Cartilage covers the ends of long bones at the joints in our body. It helps in the smooth movement of joints. With age, this cartilage wears off and it causes joints pain. What does cartilage provide in smooth functioning of joints in our body? (c) To a moving cart, two people apply the force on it from two opposite sides. The cart still keeps moving with same speed in the same direction. How is this possible? Justify with proper reason. (d) Rita always grinds the chutney on a 'silbatta' which has an etched surface, with a grinding stone. One day, she could not find it and used a smooth marble surface for grinding. As a result the texture of the chutney did not come as usual. What difference between the surfaces of silbatta and marble caused a change in the texture of the chutney? 	**(2+1+1+1)=5**
	SECTION - E ***Q.no.37to 39 are case -based/data -based questions with 2 or 3 short sub - parts.***	
37.	Petrochemical, a large group of chemicals derived from petroleum and natural gas are used for a variety of commercial purposes. Products made from petrochemicals include such as plastics, soaps and detergents, solvents, drugs, fertilizers, pesticides, explosives, synthetic fibers and rubbers, paints, flooring and insulating materials. Petrochemicals are found in products like aircraft, polyester clothes, and recording discs and tapes. Crude oil and natural gas, petrochemicals are also called hydrocarbons. (a) Which elements are primarily present in petrochemicals? (b) What are the main sources of petrochemicals? (c) How would the price of the following items change with the increase in price of petrol? Explain your answer with proper reason. i. laundry price ii. price of toothbrush, perfume and chewing gum	**(1+1+2)=4**
38.	Sex ratio is the count of the number of girls over 1000 boys in an area. The chart given below shows the state - wise child sex ratio in India.	**4**



(a) Which state has the highest and which has the lowest sex ratio?
(b) Gujarat has a sex ratio of 937. What does this imply?
(c) What are the main reasons for low sex ratio in most of the states of India? Mention any four.

39. It is an instrument which has a pendulum that consists of a heavy weight suspended from a support and a pen. The pen hangs from the weight, and a rotating drum with paper sits below it on the base. The tip of the pen touches the drum. When the drum rotates, and the weighted pen moves back and forth due to vibration of pendulum and records the movement on the drum. **1×4=4**



(a) Identify the instrument shown in the picture above. What does this instrument record?
(b) When does the pendulum start vibrating?
(c) What is the reason of such phenomena that makes the pendulum vibrate?
(d) How to measure the magnitude of such vibrations and what does the magnitude indicate?