

CLASS: VIII

SUBJECT: SCIENCE

TIME ALLOWED: 3 HOURS

MAX. MARKS: 80

**GENERAL INSTRUCTIONS: -**

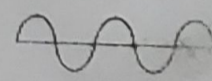
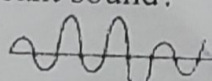
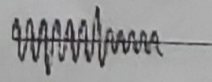
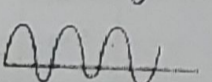
1. This question paper consists of twenty questions in five sections.
2. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.
3. Section A consists of twenty objective type questions carrying 1 mark each.
4. Section B consists of six Very Short questions carrying 02 marks each. Answers to these questions should be in the range of 30 to 50 words.
5. Section C consists of seven Short Answer type questions carrying 03 marks each. Answers to these questions should be in the range of 50 to 80 words.
6. Section D consists of three Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.
7. Section E consists of three source-based/case-based units of assessment of 04 marks each with sub-parts.

**SECTION-A**

1. **Select and write the most appropriate option out of the four options given for each of the questions 1 - 20.**
  - i) Which one among the following is not an inexhaustible natural resource? 1

a) Sunlight	b) Water
c) Air	d) Petrol
  - ii) A box is placed on three different surfaces: a marble floor, a cardboard sheet, and a sandpaper. The minimum forces required to simply move the box on the surfaces are  $F_m$ ,  $F_c$ , and  $F_s$  respectively. The three forces can be arranged in the increasing order as: 1

a) $F_c < F_m < F_s$	b) $F_c < F_s < F_m$
c) $F_m < F_c < F_s$	d) $F_s < F_c < F_m$
  - iii) Which of the following shows a pleasant sound? 1

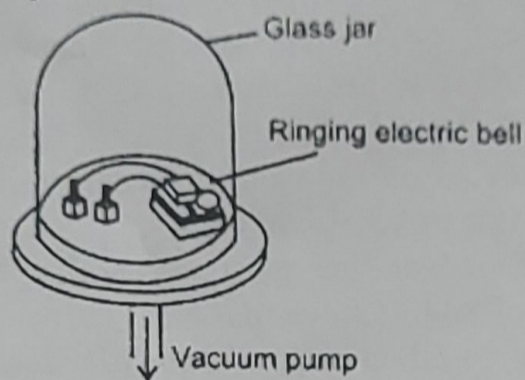
a) 	b) 
c) 	d) 
  - iv) Which force does an archer use to pull a bow? 1

a) Muscular force	b) Magnetic force
c) Gravitational force	d) All of the above
  - v) \_\_\_\_\_ is involved in filling up the liquid into the syringe. 1

a) Atmospheric pressure	b) Magnetic pressure
c) Frictional force	d) Electrostatic force
  - vi) What is the cause for the difference in the voices of men, women and children? 1

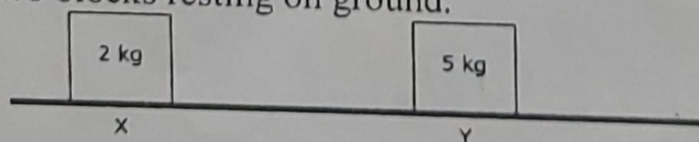
a) Difference in larynx	b) Difference in lungs
c) Difference in vocal cords	d) Difference in windpipe

- vii) Which of the following doesn't reduce friction? 1  
 a) Ball bearing b) Lubricant  
 c) Rolling d) Grooving and treading
- viii) Deposits of natural gas are found in India in: 1  
 a) Tripura b) Rajasthan  
 c) Maharashtra d) All the above
- ix) Which of the following is a measure of the force required to keep an object moving with the same speed? 1  
 a) Static friction b) Sliding friction  
 c) Rolling friction d) All of the above
- x) A student performed an experiment as shown in the figure. 1



What would have happened when air was pumped out of the jar and the electric bell rang?

- a) The sound became louder.  
 b) The sound became fainter first and then louder once all the air was pumped out.  
 c) The sound could not be heard anymore.  
 d) The sound was the same as before.
- xi) PCRA refers to: 1  
 a) Petrochemical Consumption Research Association  
 b) Petroleum Conservation Resource Association  
 c) Petroleum Conservation Research Association  
 d) Petroleum Consumption Research Association
- xii) Which of the following is expressed in decibels? 1  
 a) Loudness and amplitude of sound  
 b) Loudness and pitch of sound  
 c) Amplitude and pitch of sound  
 d) Frequency of sound
- xiii) The image shows two blocks resting on ground. 1



Block X is easier to move than Block Y. Why is block X easier to move?

- a) The surface is pressed harder by block X because of lesser mass, so greater is the friction.  
 b) The surface is pressed harder by block Y because of greater mass, so greater is the friction.  
 c) The surface is pressed harder by block X because of lesser mass, so lower is the friction.  
 d) The surface is pressed harder by block Y because of lesser mass, so lower is the friction.
- xiv) A boat moves in water for a while and then comes to rest, when rowing is stopped. This is an example of: 1  
 a) frictional force b) magnetic force  
 c) gravitational force d) electrostatic force

- xv) If the sliding friction between two surfaces is found to be 8N, then the static friction between these two surfaces is most likely to be: 1  
 a) 5N b) 10N  
 c) 4N d) 2N
- xvi) Highly inflammable substances: 1  
 a) have high ignition temperature  
 b) have low ignition temperature  
 c) cannot catch fire easily  
 d) show both (b) and (c)

Question No. xvii) to xx) 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.
- xvii) **Assertion (A):** As we move to higher altitudes, breathing can become difficult. 1  
**Reason (R):** At higher altitude there is decrease in the atmospheric pressure.
- xviii) **Assertion (A):** Camels can run in the desert more easily than humans. 1  
**Reason (R):** Wide feet of camel have a larger surface area that distributes their weight and exerts more pressure on the sand.
- xix) **Assertion (A):** Bacteria or fungi are used to make medicines. 1  
**Reason (R):** These medicines are used to cure viral diseases. 1
- xx) **Assertion (A):** Combustion is a reversible process. 1  
**Reason (R):** During combustion a substance burns in the presence of oxygen.

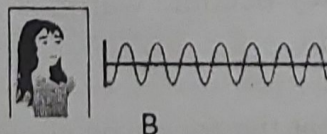
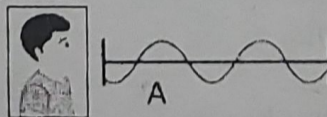
### Section-B

Question No. 2 to 7 are very short answer questions.

- 2/ Name the common type of shape possessed by the following objects. How does this shape help in the motion of these objects? 2



- 3/ A student learns that the sound travels in a waveform. The image shows the sound waves produced by a man and a woman. 2



Which of the above wave diagrams represent shriller voice and why?

- 4/ During dry weather, clothes made of synthetic fibre often stick to the skin. Define the force which is responsible for this phenomenon. Also write the SI unit of this force. 2

- 5 A student rolls a marble on two different surfaces with the same force. The table shows the distance travelled in each trial. 2

Trial	Surface	Distance Travelled (cm)
1	Glossy paper	80
2	Sand paper	65

Why does the marble travel a greater distance on a glossy paper but not on a sandpaper? Explain.

- 6 a) Why is petroleum obtained from deposits needs to be refined?  
b) On what basis the process of refining is done? 2

OR

What is black gold? Why is it called so?

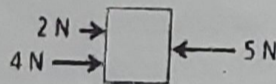
Name and define the term used to measure efficiency of a fuel. 2

### Section-C

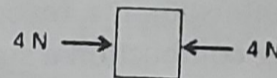
Question No. 8 to 14 are short answer questions.

- 8 a) It is much easier to burst an inflated balloon with a needle than by a finger. Explain. 3  
b) Two rods A and B, having same weight and equal length have different thickness. Rod A is thinner while Rod B is thicker. They are held vertically on the surface of sand. Which one of them will sink more and why?

- 9 Observe the pictures given below and answer the questions that follow: 3



Object A

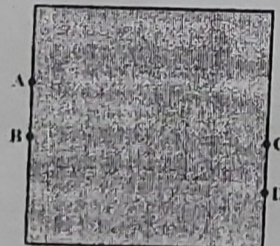


Object B

- a) Calculate net force on objects A and B.  
b) In which direction will each object move?

OR

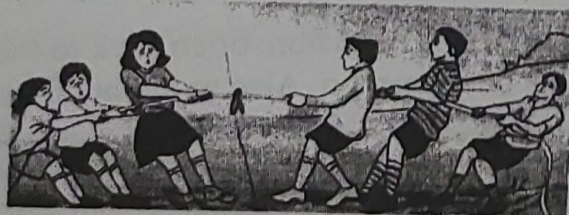
- a) Atmospheric pressure decreases as we go higher up above the earth surface. Explain.  
b) A water tank has four taps fixed at points A, B, C, D as shown in the figure given below. From which two taps water will flow out at the same pressure? Justify your answer.



- 10 Give a reason for the following statements. 3

- a) Lubricants help to reduce friction.  
b) When you rub your hands together, they become warm.  
c) We prefer to carry luggage with wheels.

- 11 a) While playing tug of war, Preeti felt that the rope was slipping through her hands. Suggest a way out for her to prevent this. 3



- b) The handle of a cricket bat or a badminton racquet is usually rough.  
Explain the reason.
- c) While travelling on a rickshaw, you might have experienced that if the seat cover is very smooth, you tend to slip when brakes are applied suddenly. Explain.
- 12 a) What is meant by Nitrogen fixation? 3  
b) Draw a neat and well labelled diagram of Nitrogen cycle in nature.
- 13 On throwing a pebble into a pond, ripples are observed with water molecules vibrating at the rate of 1200 times per minute. Determine the frequency and time period of the wave. 3
- 14 Account for the following: 3  
a) A sugar solution with yeast powder becomes alcoholic in taste.  
b) Viruses are considered to be on borderline between living and non-living.  
c) A mango gets spoilt and rotten after a few days, but a mango pickle does not spoil for a long period of time.

#### Section-D

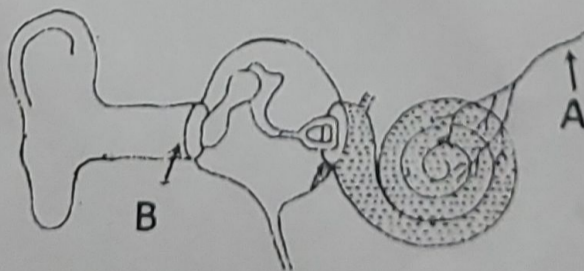
Question No. 15 to 17 are long answer questions.

- 15 a) Distinguish between inexhaustible natural resources and exhaustible natural resources based on the following parameters: 5  
i) availability ii) effects of human activities  
b) How is combustion of fuel contributing to acid rain? Explain.  
c) Which petroleum product is used in the following?  
i) Road surfacing ii) Fuel for heavy motor vehicles
- 16 a) Where will the sound travel faster, in wood or water? Justify your answer. 5  
b) Raju saw a cracker burst at night at a distance from his house. He heard the cracker a little later after seeing the cracker burst. Give reason for the delay in hearing the sound.  
c) We have learnt that vibration is necessary for producing sound. Explain why the sound produced by every vibrating body cannot be heard by us.  
d) Identify the vibrating part in the following:



OR

- a) Write one difference between music and noise.  
b) How do trees planted along roadside help in the reduction of noise pollution?  
c) Observe the diagram of human ear given below and answer the questions:  
i) Identify parts A and B.  
ii) Write function of A and B.



- 17 a) In an experiment, 4 kg of a fuel was completely burnt. The heat produced was measured to be 1,60,000 kJ. Calculate the calorific value of the fuel. 5  
b) Justify the following by giving appropriate reasons:  
i) Burning of crackers is an explosive combustion.  
ii) Water can be used as a fire extinguisher.  
iii) Charcoal does not produce a flame on burning.

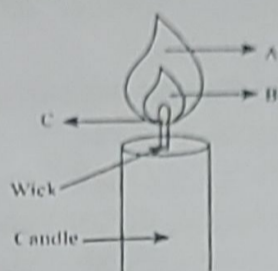
SECTION - E

Question No. 18 to 20 are case-based/data -based questions with 2 to 4 short sub-parts.

18 Manish dug two pits X and Y. He placed fruit peels, tea leaves and vegetable waste in pit X and polythene bag, glass bottle and plastic toy in pit Y. He then covered both the pits with soil. After 3-4 weeks, he observed the contents of both the pits. 4

- a) What will he observe in both pits X and Y?
- b) What could be the reason for the above changes?
- c) How can microorganisms be used to clean the environment?

19 A student was observing a candle flame with different zones. To his surprise, he noted that each zone has specific characteristics. He also noticed that the different zones vary in temperature and their colour as well. 4



- a) Identify zones A, B and C.
- b) Which zone out of A, B and C shows bright glow?
- c) When a glass plate is placed near zone B, a circular blackish ring is observed. Why?
- d) Explain why goldsmiths prefer to use zone A?

20 On Rahul's birthday, his mother prepared many dishes for him. After having their meal, they found that many food items were left over. Rahul's mother kept these leftovers in an air-tight container and refrigerated them. 4

- a) What is food preservation?
- b) What will happen to the food if it is not refrigerated?
- c) What is the role of refrigeration in food preservation method?
- d) Mention any one method of food preservation other than refrigeration.