

**KOTHARI INTERNATIONAL SCHOOL, NOIDA**  
**HALF YEARLY EXAMINATION, SESSION: 2025-26**  
**GRADE: 7 SUBJECT: SCIENCE**  
**SET B SECTION B (SUBJECTIVE)**

DAY & DATE: TUESDAY – SEPTEMBER 16, 2025

MAXIMUM MARKS: 60

TIME ALLOTTED: 2 HOURS 30 MINUTES

NAME: \_\_\_\_\_

ROLL NO: \_\_\_\_\_

**GENERAL INSTRUCTIONS:**

1. This question paper consists of 4 pages and contains 19 questions.
2. Read the question paper carefully
3. All questions are compulsory to attempt.
4. No question to be attempted on the question paper.

**Q1.** Rohan observes the following while doing an experiment.

Litmus Paper	P	Q	R	S
Blue	Red	Deep Red	No change	Mauve
Red	No change	No change	Blue	Mauve

- a) Which of these is strongly acidic or basic? (2)
- b) Which two solutions will react to show neutralization reaction?

**Q2.** Emma, a science enthusiast saw an onion peel with the help of device 'M'. But before putting it under the slide. She added a liquid 'N' and a dye name 'O'.

Name the device 'M', liquid 'N' and dye 'O'. Mention the role of the dye. (2)

Device M

**Q3.** Ramjas lived in an old house. His father brought home a new house plan design for reconstruction. While everyone was observing, Ramjas noticed that the house lacked ventilators and expressed his concern.

- a) Are ventilators important in a house? Give one reason to support your answer. (2)
- b) Which colour would you choose to paint the outer walls of your house in summer? State the reason for your choice.

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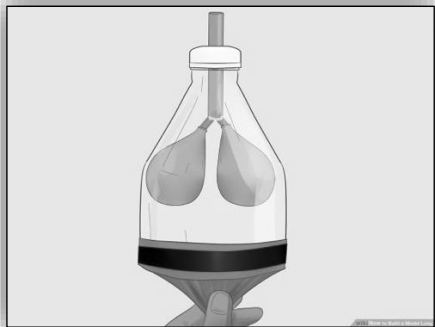
KIS/2025-26/SCIENCE-7/HALF YEARLY EXAMINATION SETB SECTION B - SUBJECTIVE/1 of 4

**Q4. Case Study:**

A group of students performed an activity showing how saliva helps in digesting starch. They chewed a piece of bread and observed how it turned sweet in the mouth. Their teacher explained that the enzyme in saliva breaks down starch into sugar, which shows the importance of digestion beginning in the mouth.

**In an activity, students chewed a piece of bread and noticed it tasted sweet after some time. Why did this change in taste occur? Explain briefly.** (2)

**Q5.** The figure given below shows a model of lungs using a pair of balloons and an elastic membrane-tied to a bottle whose wide end has been removed. When the elastic membrane is pulled, the balloons expand.

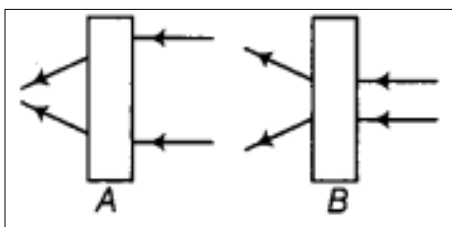


On the basis of above statement answer the following questions.

**a) The elastic membrane represents which part of the respiratory system?** (1)

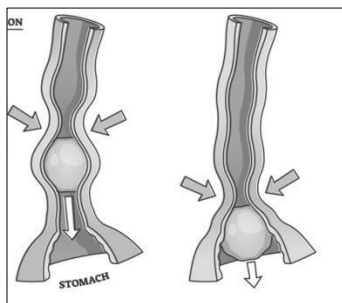
**b) Why balloons are expanding when the thin elastic membrane is pulled downwards?** (1)

**Q6.** (2)



The given figures show the path of light through curved mirrors of two different types represented by rectangular boxes A and B. **What is the nature of mirrors A and B?**

**Q7.** (2)



**a) Identify the process shown in the given figure of the food pipe. Also, state its function in digestion.** (2)

**b) If the shown movement stops in the food pipe, what immediate problem will a person face?** (1)

**Q8. Case Study:**

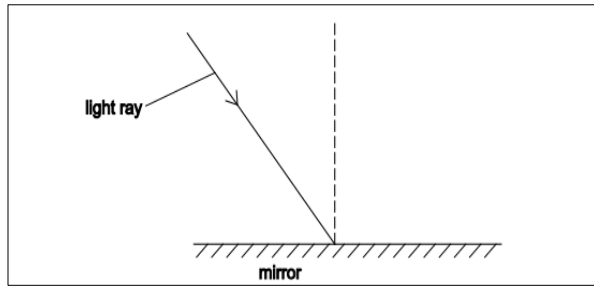
Ravi's father is a farmer. This year, the crops in their field did not grow well. Ravi's science teacher suggested testing the soil. When tested with litmus paper, the soil sample turned **red litmus blue**, showing it was basic in nature. Another farmer nearby tested his field's soil and found it turned **blue litmus red**, showing it was acidic.

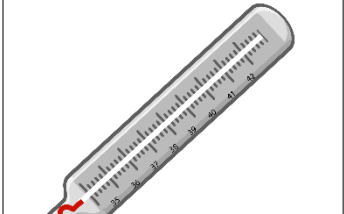
**Based on the above case study answer the following questions.** (1)

**a) Why is it important for farmers to test the nature of soil before sowing crops?** (2)

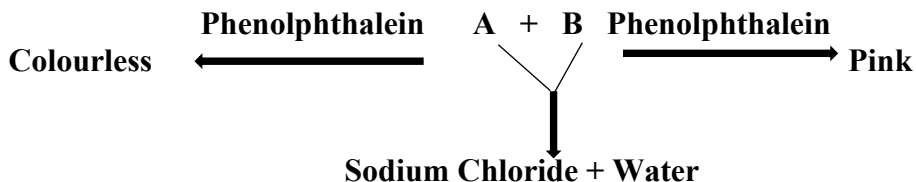
**b) In the case study, Ravi's neighbour found his soil to be acidic but wanted to grow wheat which requires basic soil. Suggest how the farmer can use the concept of **neutralisation reaction** to solve this problem.** (2)

- Q9. Shaurya investigates what happens when light hits a mirror and a glass block. (3)  
**Complete the diagram to show what happens to a light ray that hits the surface of a mirror.**



- Q10.  (1)  
 a) In a clinical thermometer, part **K** is marked. Identify this part. (1)  
 If this part were not present, how would it affect the temperature reading? (2)  
 b) Give a similarity and difference between a laboratory and clinical thermometer.

- Q11. Write an experiment to test the presence of starch in the leaves. (3)
- Q12. There are three animals X, Y and Z. The animal X can stay in water as well as on land and can breathe through its moist skin as well as lungs. The animal Y lives in water and has gills for breathing. On the other hand, animal Z lives in soil and breathes only through its skin. (3)
- a) Which animal (X, Y, or Z) is most likely to survive both on land and in water?  
 b) If water is polluted and oxygen level decreases, which animal (X, Y, or Z) will face the greatest difficulty in breathing? (3)  
 c) Which animal (X, Y, or Z) would not survive if its skin dries up?
- Q13. a) Study the following diagram and identify A and B. (2)



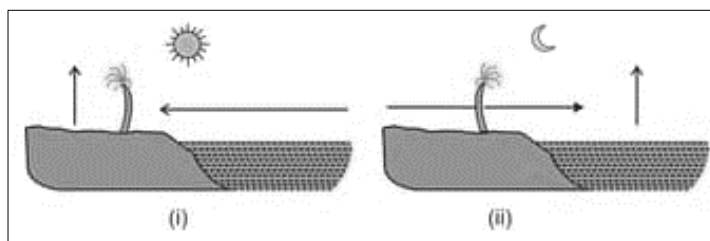
- b) If instead of phenolphthalein, litmus was used in the reaction between A and B, what colour change would you observe? (1)
- Q14. When sunlight passes through a glass prism, it splits into a band of seven colours. If all these colours are again passed through a second identical prism kept in an inverted position, the colours recombine to form white light. (2)  
**Why does the first prism split the light into different colours while the second prism recombines them into white light?** (2)
- b) How can you distinguish between a plane mirror, a concave mirror and a convex mirror without touching them? (3)

- Q15.** a) Why should factory wastes be neutralised before discharging them into water bodies? (2)
- b) Ravi noticed that the marble statue in his city park has become dull and rough after several years due to acid rain. **Explain how acid rain damages marble and suggest one way to reduce this effect.** (3)

**Q16. Nitika is practising for the upcoming athletic championship. Suddenly, while running, she sits down and starts crying because of pain in her legs. Monika immediately brings a hot water bath for her.**

- a) Why did Nitika suddenly feel the pain in her legs while running? (1)
- b) How does a hot water bath help in relieving muscle pain? (2)
- c) If instead of a hot water bath, Monika had given Nitika an ice pack immediately after the injury, how would it have helped in a different way? Compare the effect of heat and cold treatment. (2)

**Q17.**



**Observe the given pictures carefully and answer the question that follows:**

- a) In the day-time picture, the arrows show air moving from sea to land. **What does this tell you about which surface (land or sea) gets heated faster?** (1)
- b) At night, the arrows in the picture reverse direction. Why does the air now move from land to sea? (1)
- c) **Convert 104 °C into degree Fahrenheit.** (2)
- Q18.** a) Describe briefly, how digestion and absorption take place in *Amoeba*. (2)
- b) Sehaj took some grains of boiled rice in test tube 'A' and Ramesh took boiled and chewed rice in test tube 'B'. Both of them poured 1-2 drops of iodine solution into the test tubes and observed the colour change. What colour would they have observed? Give reason for your answer. (2)
- Q19.** a) Explain the symbiotic relationship between leguminous plants and *Rhizobium* bacteria. (2)
- b) Why does wheat dough spoil and give a bad odour if it is kept uncovered for some days? (2)