Brain International School

Vikas Puri, New Delhi

ASSIGNMENT NO. 3

SUBJECT: SCIENCE CLASS-VII JULY'2025

Chapter -5: Acids Bases and salts

1**. Choose the correct option:**

i. Phenolphthalein is a synthetic indicator and its colours in acidic and basic solutions respectively are

a) red and blue b) blue and red

c) pink and colourless d) colourless and pink

ii. When the soil is too basic, plants do not grow well in it. To improve its quality, what must be added to the soil?

a) organic matter b) quick lime

c) slaked lime d) calamine solution

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) Both assertion and reason are false.

(i) **Assertion**: Acids are sour in taste.

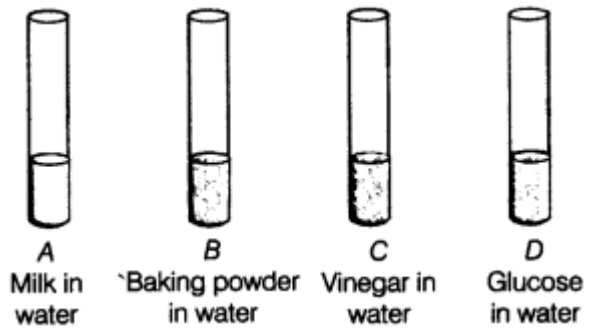
Reason: phenolphthalein is an indicator used to test acidic and basic nature of the substance.

(ii) **Assertion**: litmus is a natural indicator.

Reason: they are obtained from lichens.

3. Answer the following question.

1. Why are sodium bicarbonate and lemon juice used during indigestion?
2. A small amount of hydrochloric acid is always produced in the stomach. Is it useful or harmful for us? If excess of acid is produced in the stomach, what should we do?
3. A farmer was unhappy because of his low crop yield. He discussed the problem with an agricultural scientist and realized that the soil of his field was either too acidic or too basic. What remedy would you suggest the farmer to neutralize the soil?
4. Differentiate between Natural and Artificial indicator.
5. Look at the figure which shows solutions taken in test tubes A, B, C and D. What colour is expected, when a piece of red litmus paper is dropped in each test tube? Nature of the solutions is given in the table for your help.



4. Answer the following case study-based question

Ananya's mother was preparing pickles. She asked Ananya to help clean the container with baking soda before putting in the lemon pieces. Ananya noticed that when her mother added lemon juice to the pickle, a fizzing sound was produced. Curious, Ananya dipped litmus paper into lemon juice and baking soda solution.

Her observations were:

Lemon juice turned blue litmus red.

Baking soda solution turned red litmus blue.

Fizzing occurred when lemon juice was added to baking soda.

1. Why did lemon juice turn blue litmus red? What does this indicate?
2. What does the color change caused by baking soda solution indicate about its nature?
3. Why was fizzing observed when lemon juice was added to baking soda? Name the gas released.
4. Write a simple word equation for the reaction between lemon juice and baking soda.
5. Name two natural indicators Ananya could use to test acids and bases.

Chapter-13 Motion and Time

1. **Choose the correct option:**

i. The distance-time graph for the motion of an object moving with a constant speed

a) a curved line leaving towards x-axis

b) a curved line inclined towards y-axis

c) a straight line inclined at some angles towards x-axis

d) None of the above

ii. A bus travels 54 km in 90 min. The speed of the bus is

a) 0.6 m/s b) 10 m/s c) 5.4 m/s d) 3.6 m/s

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: The basic unit of time is second.

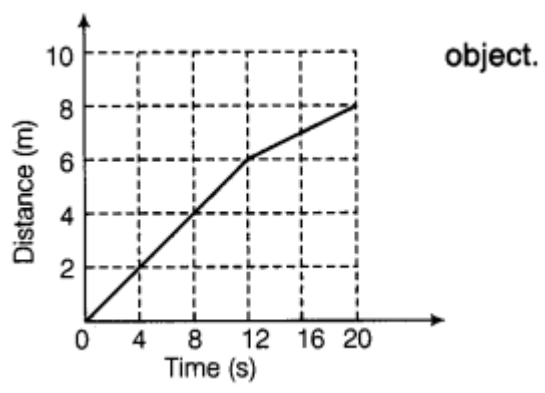
Reason: quartz Clock give more accurate measurement of time as compared to the normal wheel clock

(ii) Assertion: The distance moved by an object in unit time is called speed

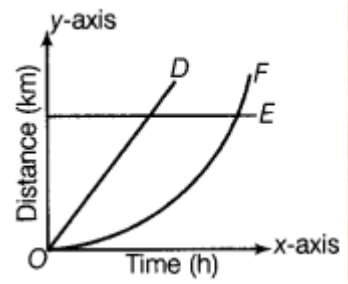
Reason: Faster vehicles have higher speed.

3. Answer the following question.

1. Differentiate between uniform and non-uniform motion.
2. The average age of children of class VII is 12 years and 3 months. Express this age in second.
3. Plot a distance-time graph of the tip of the second hand of a clock by selecting 4 points on X-axis and /-axis, respectively. The circumference of the circle traced by the second hand is 64 cm.
4. Given below as a figure is the distance-time graph of the motion of
   (a) What will be the position of the object at 20 s?
   (b) What will be the distance travelled by the object in 12 s?
   (c) What is the average speed of the object?



5. The following distance-time graph of three objects (D, E and F) are given (see figure given alongside). What can you say about the motion of the objects?



4. Answer the following case study-based questions

Students of Class 7 went on a field trip to a Science Park. They recorded the time taken by different vehicles to travel from school to the park, which is 6 km away. The table below shows their observations:

Vehicle	Time Taken
School Bus	20 minutes
Bicycle	40 minutes
Car	10 minutes

One of the students used a stopwatch to record the time and calculated the speed of each vehicle. She noticed that the car reached first, followed by the bus, and then the bicycle.

1. Calculate the speed of each vehicle in km/h.
2. Which vehicle was the fastest? How do you know?
3. Which vehicle had the slowest speed?
4. If a student walked at a speed of 4 km/h, how much time would they take to reach the park?
5. Why is it important to measure time accurately in motion-related experiments?