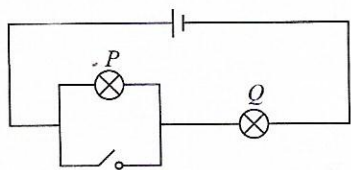


21. During dry weather, while combing hair, sometimes we experience hair flying apart. The force responsible for this is
- A. Force of gravity B. Electrostatic force
C. Force of friction D. Magnetic force.

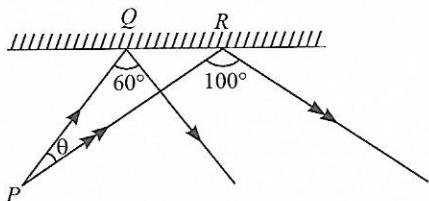
22. A beggar wrapped himself with a few layers of newspaper on a cold winter night. This helped him to keep himself warm because
- A. Friction between the layers of newspaper produces heat
B. Air trapped between the layers of newspaper is a bad conductor of heat
C. Newspaper is a conductor of heat
D. Newspaper is at a higher temperature than the temperature of the surroundings.

23. The figure shows a circuit which contains two identical lamps.



Which of the following statements best describes what happens to lamps *P* and *Q* when the switch is closed?

- A. *P* becomes brighter than before and *Q* does not light up.
B. *P* does not light up and *Q* becomes brighter than before.
C. Both *P* and *Q* become brighter than before.
D. Both *P* and *Q* will not light up.
24. The given ray diagram shows the paths of two rays from a point source at *P* when reflected by the plane mirror.



What is the angle θ between the two rays *PQ* and *PR*?

A. 20° B. 30° C. 40° D. 50°

25. Which of the following statements is/are incorrect?
- I. If wind flows from land to the ocean, then it is daytime.
II. A very high pressure system, with very high speed wind surrounding it forms a cyclone.
III. The coastline of India is not vulnerable to cyclones.
IV. Warm air is lighter than cool air.
- A. I only B. IV only
C. I and II only D. I, II and III only

26. Read the given statements and select the correct option.
- Statement 1 : Kerosene oil and wood do not catch fire on their own at room temperature.
Statement 2 : A combustible material cannot catch fire as long as its temperature is lower than its ignition temperature.

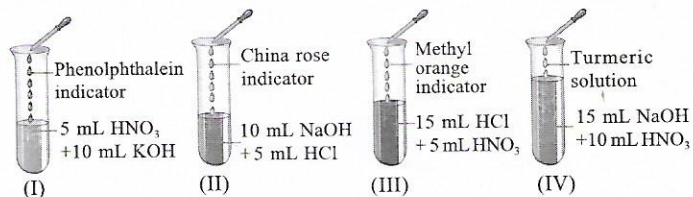
- A. Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.
B. Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.
C. Statement 1 is true and statement 2 is false.
D. Both statements 1 and 2 are false.

27. Neetu took a few samples of metals and non-metals *P*, *Q*, *R* and *S* and classified them as shown in the given table.

| Sample | Conductor of electricity | Malleability | Lustrous |
|----------|--------------------------|--------------|----------|
| <i>P</i> | ✓ | ✓ | ✓ |
| <i>Q</i> | ✗ | ✗ | ✓ |
| <i>R</i> | ✓ | ✗ | ✓ |
| <i>S</i> | ✗ | ✗ | ✗ |

| | <i>P</i> | <i>Q</i> | <i>R</i> | <i>S</i> |
|----|-----------|----------|-----------|-----------|
| A. | Copper | Iron | Potassium | Graphite |
| B. | Aluminium | Iodine | Graphite | Sulphur |
| C. | Calcium | Sodium | Graphite | Aluminium |
| D. | Graphite | Zinc | Sodium | Potassium |

28. Different solutions of same concentration are taken and mixed as shown :

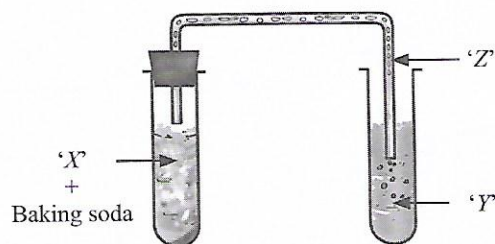


Read the given passage and select the correct option.

In test tube I, phenolphthalein indicator turns (*p*) while in test tube II, China rose indicator turns (*q*). In test tube III, methyl orange indicator turns (*r*) while in test tube IV, turmeric solution turns (*s*).

| | <i>p</i> | <i>q</i> | <i>r</i> | <i>s</i> |
|----|------------|------------|----------|----------|
| A. | Pink | Green | Red | Yellow |
| B. | Pink | Green | Red | Red |
| C. | Colourless | Magenta | Orange | Red |
| D. | Pink | Light pink | Yellow | Yellow |

29. Observe the given figure carefully.



Which of the following statements is/are incorrect?

- I. 'X' is milk of magnesia which reacts with baking soda to evolve gas 'Z'.
II. Gas 'Z' burns with a pop sound.
III. Gas 'Z' extinguishes the burning splinter.