CHEMISTRY

BOOKS - LAKHMIR SINGH & MANJIT KAUR

PHYSICAL AND CHEMICAL CHANGES

Example

1. What is the product of Burning of Magnesium Ribbon?

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2. What is the reaction between Baking Soda and Vinegar ?

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3. What is the reaction between Copper Sulphate Solution and Iron ?

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4. What is the importance of Chemical Changes ?

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5. What is the differences between Physical and Chemical Changes ?

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6. What is a 'Protective Shield of Ozone' ?

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7. What is the conditions necessary for Rusting ?

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8. How do we prevent Rusting of Iron ?

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Exercise

1. Name the metal which is used for galvanising iron.

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2. Name the susbtances which are mixed (allowed) with iron to make stainless steel.

A. Nickel

B. Chromium

C. Aluminium

D. Both A and B

Answer: D

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3. Name the process which can be used to purify an impure sample of copper sulphate.

A. Crystallization

B. Evaporation

C. Sublimation

D. Condensation

Answer: A

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4. Name the process by which common salt is obtained from sea-water.

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5. Name the process by which common salt is purified.

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6. Name a substance which can be purified by crystallisation.

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7. Name the gas that turns lime water milky is

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8. State whether the following statements are true or false :

Cutting a log of wood Into pieces is a chemical change.

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9. State whether the following statements are true or false :

Formation of manure from leaves is a physical change.

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10. State whether the following statements are true or false :

Condensation of steam Is not a chemical change.

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11. State whether the following statements are true or false :

Iron and rust are the same substance .

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12. State whether the following statements are true or false :

Iron pipes coated with zinc do not get rusted easily.

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13. Classify the changes involved In the following processes as physical or chemical changes :

Photosynthesis

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14. Classify the changes involved In the following processes as physical or chemical changes :

Burning of Coal

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15. Classify the changes involved In the following processes as physical or chemical changes :

Digestion of food

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16. Classify the changes involved In the following processes as physical or chemical

changes :

Dissolving sugar in water

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17. Classify the changes involved In the following processes as physical or chemical changes :

Melting of wax

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18. Classify the changes involved In the following processes as physical or chemical changes :

Beating aluminium to make aluminium foil

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19. Which of the following are physical changes and which are chemical changes ?

A glass bottle breaking

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20. Which of the following are physical changes and which are chemical changes ?

Making a cake

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21. Which of the following are physical changes and which are chemical changes ?

Wool being knitted into a sweater

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22. Which of the following are physical changes and which are chemical changes ?

Burning of incense stick

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23. Which of the following are physical changes and which are chemical changes ?

Tearing of paper

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24. Which of the following are physical changes and which are chemical changes ?

Cooking of food

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25. Which of the following are physical changes and which are chemical changes ?

Formation of clouds

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26. Which of the following are physical changes and which are chemical changes ?

Drying of clothes

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27. Which of the following are physical changes and which are chemical changes ?

Burning of paper

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28. Which of the following are physical changes and which are chemical changes ?

Formation of rust

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29. Fill in the following blanks with suitable words :

Changes in which new substances are formed are called _____ changes.

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30. Fill in the following blanks with suitable words :

Melting of wax is a _____ change but burning of wax is a _____change.

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31. Fill in the following blanks with suitable words :

Souring of milk is a _____change.

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32. Fill in the following blanks with suitable words :

The chemical name of baking soda is _____

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33. Fill in the following blanks with suitable words :

When carbon dioxide is passed through lime

water. It turns milky due to the formation of _____.

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34. Fill in the following blanks with suitable words :

The two methods by which rusting of iron can be prevented are ____ and ____.

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35. Fill in the following blanks with suitable words :

The process of depositing a thin layer of zinc on iron objects is called _____.

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36. Fill in the following blanks with suitable words :

The presence of _____ in sea water makes the process of rust formation on ships faster.

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37. Fill in the following blanks with suitable words :

Some susbtances can be obtained in pure state from their solutions by _____.

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38. Why is an Iron grill painted frequently ?

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39. Explain why, iron pipes for carrying water are coated with zinc.

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40. Why are the tools and machine parts made of iron smeared with grease or oil ?

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41. Explain how, painting of an Iron gate prevents it from rusting.

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42. Explain why, rusting of Iron objects is faster in coastal areas than in deserts.

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43. What is meant by galvanisation? Why is it done?

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44. State two ways to prevent the rusting of iron.

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45. What is stainless steel ? How is stainless steel made ? State an important property of stainless steel.

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46. State three differences between a physical change and a chemical change.

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47. Write a word equation to represent the process of rusting of iron. Also write the chemical symbols and formulae of all the substances involved.

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48. Explain why, explosion of a firework (such as cracker) is said to be a chemical change.

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49. Explain why, melting of ice to form water is said to be a physical change.

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50. What is meant by crystallisation ? State its one use.

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51. Describe how, crystals of copper sulphate are prepared.

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52. Give example of a chemical change which occurs by the action of heat.

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53. Give example of a physical change which occurs by the action of heat.

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54. What is a (a) physical change, and (b) chemical change ? Give two examples of physical changes and two examples of chemical changes.

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55. What is meant by the rusting of iron ? State two conditions necessary for the rusting of iron to occur. Explain how, rusting damages iron objects.

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56. What happens when an iron nail is kept immersed in copper sulphate solution ? Write a word equation for this process. Name the type of change involved.

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57. What happens when baking soda is added to vinegar ? Write a word equation for this reaction. Name the type of change which takes place.

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58. What happens when carbon dioxide gas is passed through lime water ? Write a word

equation for this process. Name the type of change which takes place.

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59. When baking soda is mixed with lemon juice, bubbles are formed with the evolution of a gas. What type of change is this ? Explain.

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60. When a candle burns, both physical and chemical changes take place. Identify these changes.

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61. Explain why, burning of wood and cutting of wood into small pieces are considered as two different types of changes.

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62. What happens when magnesium ribbon is burned in air ? Write a word equation for this process. Name the type of change which takes place.

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63. What happens when magnesium oxide is dissolved in water ? Write a word equation for this process. Name the type of change which takes place.

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64. Which one of the following is not a chemical change ?

A. formation of curd

B. ripening of banana

C. sublimation of naphthalene

D. corrosion of photo frame

Answer: C

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65. Which of the following are physical changes?

(i) Melting of iron metal

(ii) Rusting of iron

(iv) Bending of an iron rod

(v) Drawing a wire of iron metal

A. A and B

B. B and C

C. A and D

D. B and D

Answer: C

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66. Which of the following are chemical changes?

(i) Decaying of wood

(ii) Burning of wood

(iii) Sawing of wood

(iv) Hammering of a nail into a piece of wood

A. A and B

B. B and C

C. A and C

D. B and D

Answer: A

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67. Which one of the following change can be reversed ?

A. water changing into ice

B. nails becoming rusty

C. bread turning mouldy

D. paper burning into ash

Answer: A

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68. Which of the following is not a physical change ?

A. salt is added to water

B. charcoal burns

C. ice melts

D. iron nail is magnetised

Answer: B

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69. When ice-cream melts :

A. Heat is lost from the ice-cream

B. Heat is gained by the ice-cream

C. Heat is lost from the surroundings

D. Heat is gained by the surroundings

A. A and B

B. B and C

C. A and C

D. C and D

Answer: B

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70. Which of the following is a chemical change ?

A. Lifting up a chair

B. Filling a glass with orange juice

C. Cooking a pot of rice

D. Bursting a balloon

Answer: C

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71. One of the following is not a chemical change. This one is

A. ripening of bananas

B. souring of milk

C. decaying of jute bag

D. drying of cotton cloth

Answer: D

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72. Which of the following is not a characteristic of a physical change ?

A. no new substance formed

B. can be reversed

C. temporary change

D. permanent change

Answer: D

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73. The gas that turns lime water milky is

A. sulphur dioxide

B. nitrogen dioxide

C. hydrogen chloride

D. carbon dioxide

Answer: D

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74. The ozone layer in the atmosphere absorbs

A. infrared radiations

B. infrasonic radiations

C. ultraviolet radiations

D. ultrasonic radiations

Answer: C

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75. The rusting of iron can be prevented by coating it with a layer of :

A. Zinc

B. Sodium

C. Chromium

D. Carbon

A. A and B

B. B and C

C. A and C

D. B and D

Answer: C

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76. Impure copper sulphate powder can be purified by the process of :

A. galvanisation

B. crystallisation

C. evaporation

D. sublimation

Answer: B

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77. The gas we use in the kitchen is called liquefied petroleum gas (LPG). In the cylinder it exists as liquid. When it comes out from the cylinder, it becomes a gas (change - A), then it burns (change - B). The following statements pertain to these changes. Choose the correct one.

A. Process A is a chemical change.

B. Process B is a physical change.

C. Process A is a physical change but B is a chemical change.

D. Process A is a chemical change but B is a physical change.

Answer: C

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78. Anaerobic bacteria digest animal waste and produce biogas (change A). The biogas is then burnt as fuel (change B). The following

statements pertain to these changes. Choose the correct one :

A. A is a chemical change whereas B is a physical change.

B. B is a chemical change whereas A is a physical change.

C. Both A and B are physical changes.

D. Both A and B are chemical changes.

Answer: D

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79. When magnesium is burned in air, a powdery ash X is formed. X on dissolving in water forms Y.

What is X?

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80. When magnesium is burned in air, a powdery ash X is formed. X on dissolving in

water forms Y.

What is Y ?

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81. When magnesium is burned in air, a powdery ash X is formed. X on dissolving in water forms Y.

What is the action of Y on litmus paper ?

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82. When magnesium is burned in air, a powdery ash X is formed. X on dissolving in water forms Y.

What conclusion do you get about the nature of Y from its action on litmus paper ?

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83. When magnesium is burned in air, a powdery ash X is formed. X on dissolving in water forms Y.

What is the common name of the indigestion-relieving medicine which contains Y ?

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84. When a grey coloured object made of metal A is left exposed to damp air for a considerable time, it gets covered with a red-brown flaky coating by the process called B which eats up the whole object gradually. It is said that the presence of C and D is necessary for this process to take place. If this object is

galvanised by metal E, then the process B does not occur.

Name the metal A of which the object is made.

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85. When a grey coloured object made of metal A is left exposed to damp air for a considerable time, it gets covered with a red-brown flaky coating by the process called B which eats up the whole object gradually. It is said that the presence of C and D is necessary

for this process to take place. If this object is galvanised by metal E, then the process B does not occur.

Name the process B.

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86. When a grey coloured object made of metal A is left exposed to damp air for a considerable time, it gets covered with a red-brown flaky coating by the process called B which eats up the whole object gradually. It is

said that the presence of C and D is necessary for this process to take place. If this object is galvanised by metal E, then the process B does not occur.

What is C?

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87. When a grey coloured object made of metal A is left exposed to damp air for a considerable time, it gets covered with a red-brown flaky coating by the process called B

which eats up the whole object gradually. It is said that the presence of C and D is necessary for this process to take place. If this object is galvanised by metal E, then the process B does not occur.

What is D ?

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88. When a grey coloured object made of metal A is left exposed to damp air for a considerable time, it gets covered with a red-

brown flaky coating by the process called B which eats up the whole object gradually. It is said that the presence of C and D is necessary for this process to take place. If this object is galvanised by metal E, then the process B does not occur.

Name the metal E.

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89. When electricity is passed through water, then a change V occurs which leads to the

formation of two gases W and X. On the other hand, when water is heated strongly, then a change Y takes place leading to the formation of gas Z.

What is the gas W?

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90. When electricity is passed through water, then a change V occurs which leads to the formation of two gases W and X. On the other hand, when water is heated strongly, then a

change Y takes place leading to the formation of gas Z.

What is the gas X?

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91. When electricity is passed through water, then a change V occurs which leads to the formation of two gases W and X. On the other hand, when water is heated strongly, then a change Y takes place leading to the formation

of gas Z.

What is the gas Z?

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92. When electricity is passed through water, then a change V occurs which leads to the formation of two gases W and X. On the other hand, when water is heated strongly, then a change Y takes place leading to the formation of gas Z.

What type of change is V?

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93. When electricity is passed through water, then a change V occurs which leads to the formation of two gases W and X. On the other hand, when water is heated strongly, then a change Y takes place leading to the formation of gas Z.

What type of change is Y ?

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94. When an ant stings a person, the solution of substance A is rubbed on the stung area of the skin to get relief from pain. The substance A is also used in kitchen for cooking purposes. Another susbtance B is sour in taste and contains an organic acid C. It is used in making pickles. When a solution of A is mixed with B, then a change D takes place to produce bubbles of gas E.

What are substances A ?

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95. When an ant stings a person, the solution of substance A is rubbed on the stung area of the skin to get relief from pain. The substance A is also used in kitchen for cooking purposes. Another susbtance B is sour in taste and contains an organic acid C. It is used in making pickles. When a solution of A is mixed with B, then a change D takes place to produce bubbles of gas E.

What are substances B ?

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96. When an ant stings a person, the solution of substance A is rubbed on the stung area of the skin to get relief from pain. The substance A is also used in kitchen for cooking purposes. Another susbtance B is sour in taste and contains an organic acid C. It is used in making pickles. When a solution of A is mixed with B, then a change D takes place to produce bubbles of gas E.

Name the acid C.

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97. When an ant stings a person, the solution of substance A is rubbed on the stung area of the skin to get relief from pain. The substance A is also used in kitchen for cooking purposes. Another susbtance B is sour in taste and contains an organic acid C. It is used in making pickles. When a solution of A is mixed with B, then a change D takes place to produce bubbles of gas E.

What type of change is D ?

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98. When an ant stings a person, the solution of substance A is rubbed on the stung area of the skin to get relief from pain. The substance A is also used in kitchen for cooking purposes. Another susbtance B is sour in taste and contains an organic acid C. It is used in making pickles. When a solution of A is mixed with B, then a change D takes place to produce bubbles of gas E.

Name the gas E.

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99. When an object made of material P is kept immersed in the blue coloured solution Q, then a chemical change takes place to form a green coloured solution R and a brown layer of substance S is deposited on the object. P is used for making nails and S is used for making electric wires.

What could the material P be ?

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100. When an object made of material P is kept immersed in the blue coloured solution Q, then a chemical change takes place to form a green coloured solution R and a brown layer of substance S is deposited on the object. P is used for making nails and S is used for making electric wires.

Name the blue coloured solution Q.

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101. When an object made of material P is kept immersed in the blue coloured solution Q, then a chemical change takes place to form a green coloured solution R and a brown layer of substance S is deposited on the object. P is used for making nails and S is used for making electric wires.

Name the green coloured solution R.

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102. When an object made of material P is kept immersed in the blue coloured solution Q, then a chemical change takes place to form a green coloured solution R and a brown layer of substance S is deposited on the object. Pis used for making nails and S is used for making electric wires.

What could the substance S be ?

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