



CHEMISTRY

BOOKS - HT Olympiad Previous Year Paper

NSO QUESTION PAPER 2017-18 SET A

Science

1. Which of the following statements is/are correct?

- I. Acids are sour in taste and corrosive in nature.
- II. Fruits and vegetables contain inorganic acids.
- III. All bases are soluble in water.
- IV. Bases produce salts with all metals.
- V. Milk of magnesia is an aqueous solution of magnesium carbonate.

A. II and IV only

B. I only

C. III and V only

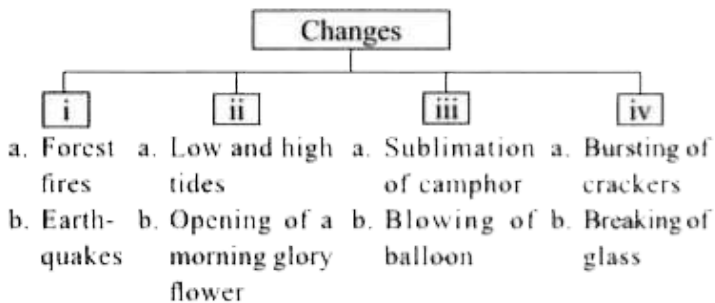
D. I, II, III, IV and V

Answer: B



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2. Study the given flow chart carefully.



Changes i, ii, iii and iv could be respectively

A. Fast, non-periodic, reversible and chemical

B. Undesirable, periodic, reversible and fast

C. Fast, chemical, irreversible and non-periodic

D. Undesirable, reversible, chemical and irreversible.

Answer: B



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3. A few changes are listed in the box :

(i) Cutting of hair (ii) Mixing fruits and cornflakes
(iii) Adding baking soda to vinegar (iv) Spoiling
of food (v) Bending of a piece of metal on heating
(vi) Decomposition of old leaves (vii) Shredding
of paper

Which of the following represents their
correct classification?

	Physical (Irreversible)	Physical (Reversible)	Chemical (Irreversible)
A.	(i), (vii)	(ii), (v)	(iii), (iv), (vi)
B.	(ii), (v)	(i), (vii)	(iii), (iv), (vi)
C.	(ii), (iii)	(i), (iv)	(v), (vi), (vii)
D.	(i), (vi)	(v), (vii)	(ii), (iii), (iv)

A. Physical (irreversible)- i, vii Physical

(reversible)- ii, v Chemical (irreversible)-

iii, iv, vi

B. Physical (irreversible)- ii, v Physical
(reversible)- i, vii Chemical (irreversible)-
iii, iv, vi

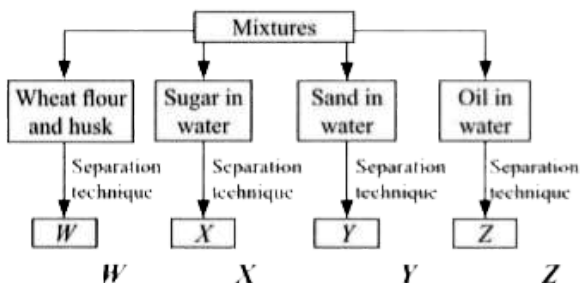
C. Physical (irreversible)- ii, iii Physical
(reversible)- i, iv Chemical (irreversible)- v,
vi, vii

D. Physical (irreversible)- i, vi Physical
(reversible)- v, vii Chemical (irreversible)-
ii, iii, iv

Answer: A



4. Identify W, X, Y and Z in the given flow chart.



- | | <i>W</i> | <i>X</i> | <i>Y</i> | <i>Z</i> |
|----|---------------|---------------|---------------|-------------------|
| A. | Winnowing | Filtration | Sedimentation | Evaporation |
| B. | Sedimentation | Winnowing | Filtration | Separating funnel |
| C. | Sieving | Evaporation | Filtration | Separating funnel |
| D. | Handpicking | Sedimentation | Winnowing | Evaporation |

A. W- winnowing, X- Filtration, Y- Sedimentation, Z- Evaporation

B. W- Sedimentation, X- Wnnowing, Y-
Filteration, Z- Seperating funnel

C. W- Sieving, X- Evaporation, Y- Filteration,
Z- Seperating funnel

D. W- handpicking, X- Sedimentation, Y-
Wnnowing, Z- Evaporation

Answer: C



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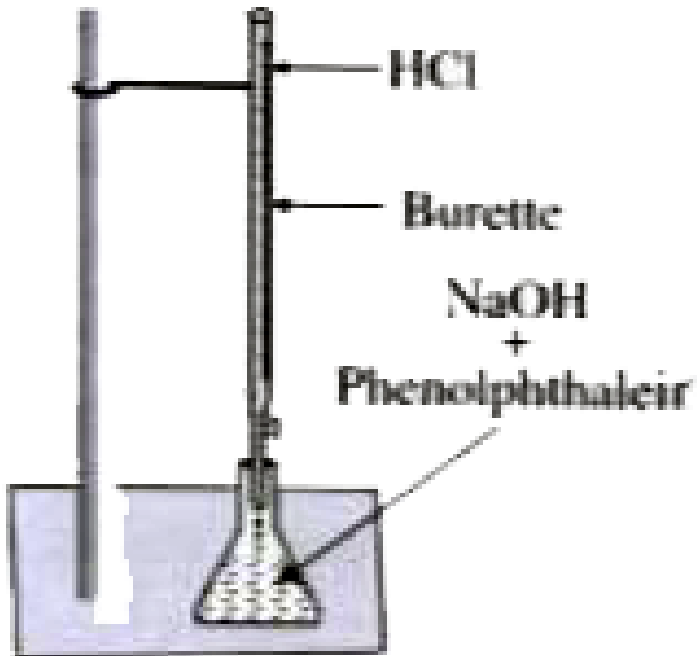
5. Observe the given figure carefully and select the correct statements.

I. Heat is evolved in this reaction.

II. The colour of the mixture in the conical flask is pink in the beginning.

III. It represents a neutralisation reaction.

IV. No new substance is formed in the reaction.



A. I, II and III only

B. II and III only

C. III and IV only

D. I, II, III and IV

Answer: A



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6. Somya took water in five different tumblers (I-V) and added different substances to each tumbler. She stirred the contents with spoon and then recorded her observations in the given table.

S. No.	Substance added	Observation	Inference
I.	Sand	Disappear in water	Soluble
II.	Soap powder	Disappear in water	Insoluble
III.	Talcum powder	Does not disappear	Insoluble
IV.	Sawdust	Disappear in water	Soluble
V.	Grounded wax	Does not disappear	Insoluble

The correct observations and inferences are

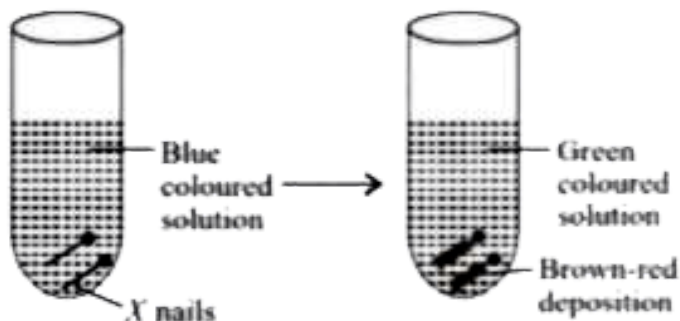
- A. I, II and IV only
- B. III and V only
- C. IV and V only
- D. None of these

Answer: B

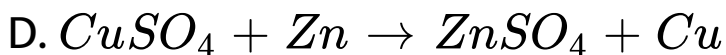
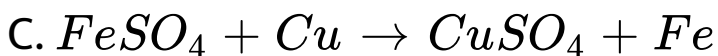
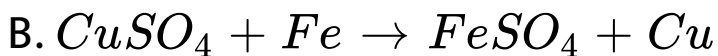
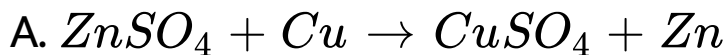


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7. Study the given figure carefully.



Which of the following reactions explains the above change most appropriately?



Answer: B



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8. Match column I with column II and select the correct option from the given codes.

Column I

- P. Used as a preservative
- Q. Used in medicines as well as in fire extinguishers
- R. Used as a fungicide and in electroplating
- S. Used in fireworks

Column II

- (i) KNO_3
- (ii) $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
- (iii) NaCl
- (iv) NaHCO_3



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9. Aryan took two food samples X and Y in separate test tubes. He added 2-3 drops of Benedict's solution in food sample X and heated it while he added two drops of copper sulphate solution and few drops of caustic soda solution in food sample Y. He observed that sample X turned orange while sample Y turned violet.

Which of the following is correct regarding X and Y?

A. X could be egg while Y could be boiled potato.

B. X could be ripened banana while Y could be milk.

C. X could be wheat while Y could be butter.

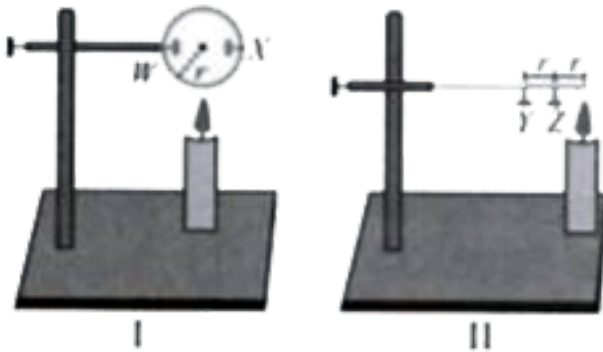
D. X could be milk while Y could be rice.

Answer: B



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10. In the arrangements I and II shown in figure, four pins W, X, Y and Z are fixed to a metal loop and metal rod with the help of wax. Loop and rod are made of same material and equal thickness. Which set of pins will fall simultaneously? (r is the radius of the loop.)



A. Y and Z only

B. W, X and Y only

C. W and X only

D. W, X, Y and Z

Answer: C



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11. A few solutions were tested with different indicators and results were noted down in the given table.

S. No.	Solution	Colour with China rose indicator	Colour with methyl orange indicator
1.	V	Dark pink	Red
2.	W	Dark pink	Red
3.	X	Light pink	Orange
4.	Y	Green	Yellow
5.	Z	Light pink	Orange

Study the given table carefully and fill in the blanks by choosing an appropriate option.

Solution(s) (i) will have no effect on blue litmus paper while solution(s) (ii) will turn blue litmus red. Phenolphthalein remains colourless in solution(s) (iii) while it changes to pink colour in solution(s) (iv).

- | | | | | |
|----|------------|-------------|--------------|-------------|
| | (i) | (ii) | (iii) | (iv) |
| A. | X, Y | V | W, Z | Z |
| B. | X, Y, Z | V, W | V, W, X, Z | Y |
| C. | V, W, X, Z | V, W | Y | X, Y, Z |
| D. | X, Y, Z | V, W | V, W | Y, Z |

A. i- X,Y ii-V iii- W,Z iv-Z

B. i- X,Y,Z ii-V,W iii- V,W,X,Z iv-Y

C. i- V,W,X,Z ii-V,W iii- Y iv-X,Y,Z

D. i- X,Y,Z ii-V,W iii- V,W iv-Y,Z

Answer: B



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