



CHEMISTRY

BOOKS - EVERGREEN CHEMISTRY (ENGLISH)

STUDY OF NITRIC ACID (HNO_3)

Questions

1. When nitric acid is prepared by the action of concentrated sulphuric acid on potassium

nitrate , what is the special feature of the apparatus used.



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2. Write a balanced equation for the following:

Preparation of nitric acid from potassium nitrate.



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3. Potassium nitrate is prepared from KOH and nitric acid .State the type of reaction involved.



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4. Which gas is produced when potassium nitrate is heated? Write the equation for the reaction.



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5. What is the special feature of the apparatus that is used in the laboratory preparation of nitric acid?



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6. Why should the temperature of the reaction mixture of nitric acid not be allowed to rise above $200^{\circ}C$?



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7. Choose the correct answer from the options given below :

The brown ring test is used for detection of :



Answer:



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8. Choose from the list of substances, as to what matches the description given below:

[Acetylene gas, aqua fortis, coke, brass, barium chloride, bronze, platinum].

A catalyst used in the manufacture of nitric acid by Ostwald's process.



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9. Write balanced chemical equation for the following:

Action of hot and concentrated Nitric acid on copper.



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10. Give balanced equation for the following reaction :

Dilute nitric acid and Copper carbonate.



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11. Give balanced equation for the following:
Oxidation of carbon with concentrated nitric acid.



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12. Give a balanced chemical equation for each of the following:

Action of conc. Nitric acid on Sulphur.



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13. Give a balanced chemical equation for the following:

Catalytic oxidation of Ammonia.



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14. Give a balanced chemical equation for each of the following:

Laboratory preparation of Nitric acid.



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15. Give a balanced chemical equation for each of the following:

Reaction of Ammonia with Nitric acid.



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Questions For Practice

1. Write the molecular formula of nitric acid. Write the type and number of atoms which constitute a molecule of nitric acid.



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2. Write balanced chemical equation of the reaction for the preparation of nitric acid in the laboratory. What type of change is observed if the reaction mixture is heated above $200^{\circ}C$?



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3. When nitric acid is prepared by the action of concentrated sulphuric acid on potassium

nitrate , what is the special feature of the apparatus used.



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4. What compounds are required for the laboratory preparation of nitric acid.



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5. State why pure nitric acid takes on a yellowish brown colour when exposed to light.



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6. Write a balanced equation for the following:

Preparation of nitric acid from potassium nitrate.



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7. Commercial nitric acid is yellow in colour.

Give reason.



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8. Explain the following: Concentrated nitric acid appears _____ when it is left standing in a glass bottle.



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9. How is commercial nitric acid decolourised?



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10. In the laboratory preparation of nitric acid, the mixture of concentrated sulphuric acid and sodium nitrate should not be heated very strongly above $200^{\circ}C$. Give reasons.



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11. In the preparation of nitric acid from KNO_3 , concentrated hydrochloric acid is not used in place of concentrated sulphuric acid. Give reason.





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12. State the conditions for the oxidation of ammonia to nitric oxide in the manufacture of nitric acid by the Ostwald process. Also write the balanced chemical equation of the reaction which takes place.



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13. Name the catalyst which is used in the oxidation of ammonia to nitric oxide. Name

the other product of the oxidation reaction.



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14. A gas 'X' reacts with another gas 'Y' in the presence of a catalyst to give a colourless gas 'Z'. The gas 'Z' when comes in contact with air produces a brown gas 'D'. The solution of 'X' in water turns red litmus blue. Explain the observations.



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15. The first step in the manufacture of nitric acid is the catalytic oxidation of ammonia.

What is the name of the catalyst?



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16. Give balanced chemical equation for the reactions of nitric acid with carbon.



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17. Write balanced chemical equation for the action of concentrated sulphuric acid on sodium nitrate.



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18. Name the oxide of nitrogen which is a brown gas.



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19. Write equations for the following reactions:

zinc and concentrated nitric acid.



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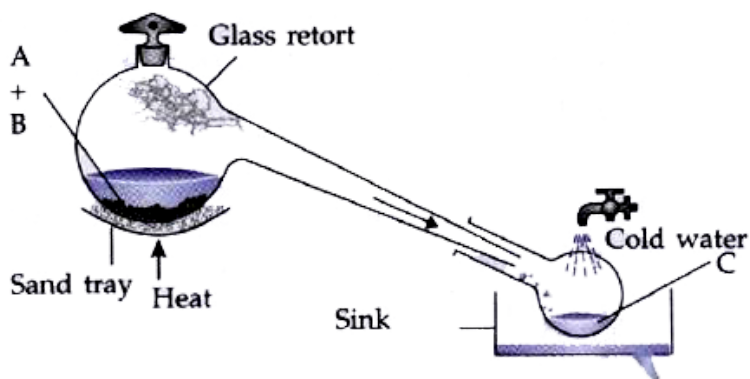
20. Write equations for the following reactions:

Copper and dilute nitric acid.



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21. The figure given alongside illustrates the apparatus used in the laboratory preparation of nitric acid.

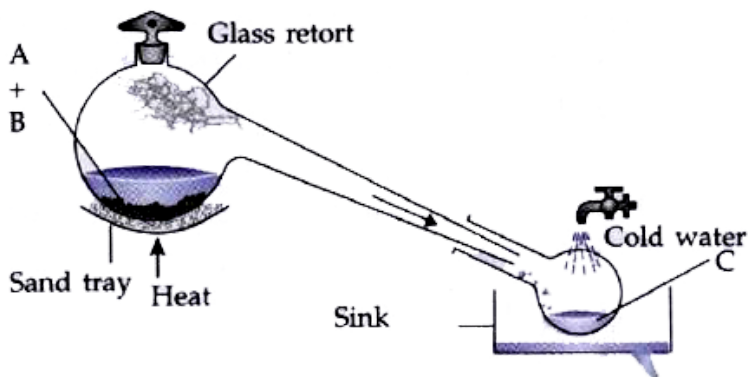


Name A (a liquid), B (a solid) and C (a liquid)
(Do not give the formulae)



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22. The figure given alongside illustrates the apparatus used in the laboratory preparation of nitric acid.



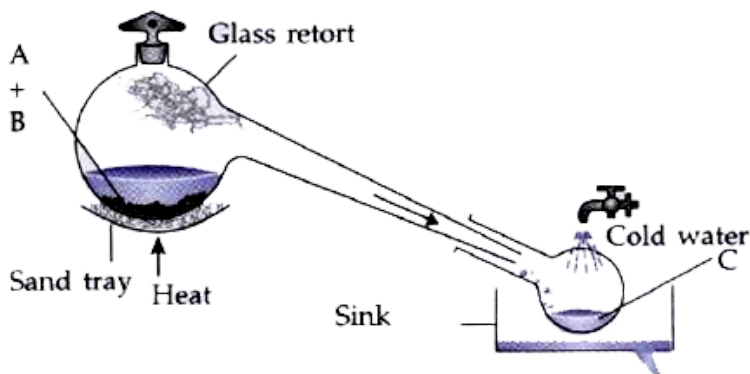
Name A (a liquid), B (a solid) and C (a liquid)

(Do not give the formulae)



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23. The figure given alongside illustrates the apparatus used in the laboratory preparation of nitric acid.



Write the equation for the reaction in which copper is oxidized by concentrated nitric acid.

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