

8323 INVESTIGATING CHEMISTRY REVISION

NAME: _____ **MARK:** ____ /50 = _____ %

- The study of materials, how they are composed and the changes they undergo is known as Chemistry.
- Complete the three phases (states) of matter and their properties in the table below. [6 marks]

| STATE | SHAPE | VOLUME | COMPRESSIBILITY |
|--------|--------------------|------------------------------|-----------------|
| Solid | Fixed | Fixed | None |
| Liquid | Shape of container | Fixed | None/Little |
| Gas | Shape of container | Takes up volume of container | Lots |

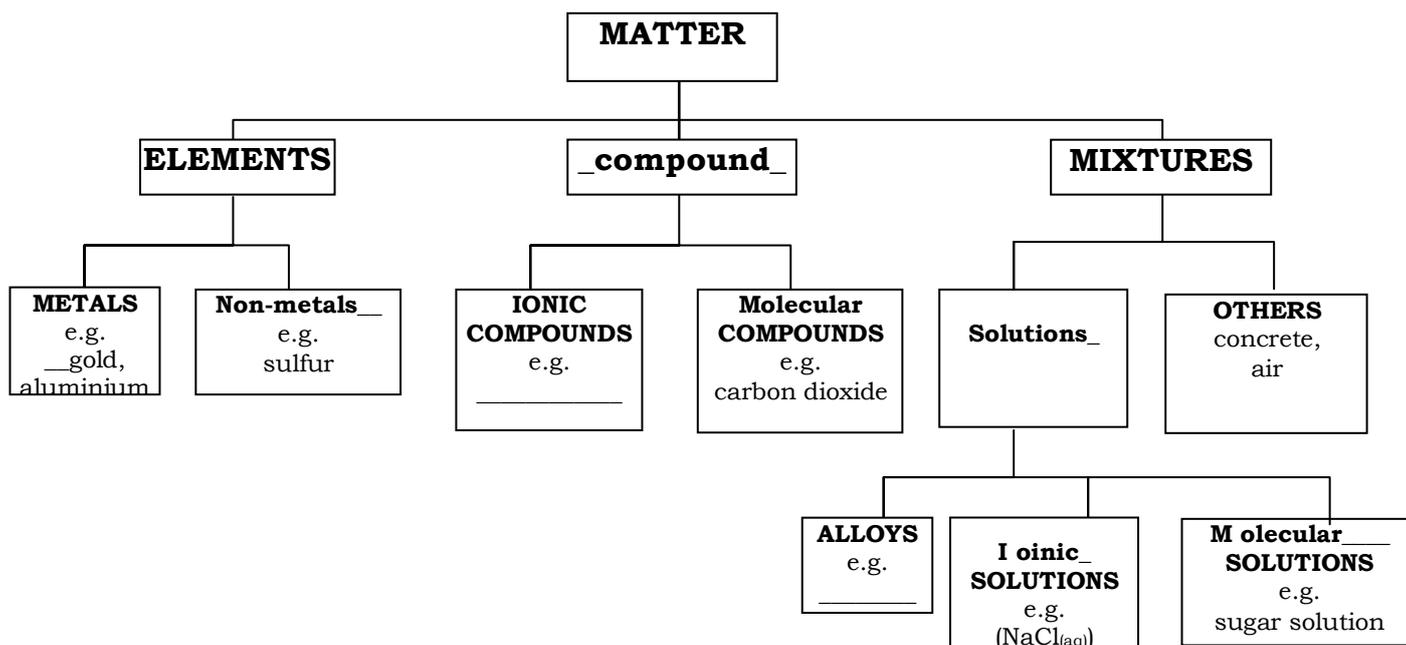
- Anything which takes up space and has mass is matter.
- To melt a solid it must be heated and it turns into a liquid.
Further heating will cause it to become so hot that it might evaporate and become a gas.
- Complete the table below:

| NAME | Phase (states) of matter | |
|------------------|--------------------------|---------------------|
| | From | To |
| vaporisation | Liquid | Gas |
| sublimation | Solid | Gas (or vice versa) |
| condensation | Gas | Liquid |
| melting (fusion) | Solid | Liquid |
| evaporation | Liquid | gas |

[5 marks]

- Materials which dissolve easily in water are called soluble.
Those which dissolve slightly are called slightly soluble while those whose solubility is negligible are called insoluble.
- The most common solvent is water.
- When dissolving sugar in water, the sugar is the solute and the water is the solvent and the resulting sugary water mixture is called the solution.
- Undissolved or insoluble material can be separated from a liquid by the methods of filtration or evaporation or sedimentation and decantation.
- Dissolved material can be separated from solution by the methods of evaporation or distillation.
- If the undissolved material is in suspension the method of filtration may be used.

12. Name the process when:
- (a) water is carefully poured out of a saucepan to leave the cooked vegetables in the saucepan. decantation .
- (b) after cooking peas, the saucepan is tipped over a sieve, the peas are held in the sieve but the water passes through. filtration .
- (c) puddles of water on the road after a shower of rain soon dry when the sun comes out. evaporation - .
13. chemical changes involve the formation of NEW substances.
14. When two or more elements are chemically combined they form a compound which has different properties from those of the original elements.
15. A mixture retains the properties of its constituents or components.
16. Physical (mechanical) methods of separation will separate the components of a mixture, but chemical methods are necessary to separate the components in a compound .
17. Complete the following Classification of Matter chart: [5 marks]



18. Write down formulae or name of the following chemicals: [5 marks]

| name | formula | name | formula | name | formula | name | formula |
|--------------------|---------------------------------|--------------------|---|------------|-----------------|-------------------|--------------------------------|
| water | H ₂ O | Sulfur dioxide | SO ₂ | ammonia | NH ₃ | sulfuric acid | H ₂ SO ₄ |
| Sodium Carbonate | Na ₂ CO ₃ | copper sulfate | CuSO ₄ | zinc oxide | ZnO | potassium nitrate | KNO ₃ |
| Magnesium chloride | MgCl ₂ | Ammonium phosphate | (NH ₄) ₃ PO ₄ | | | | |