

Below, we are going to see a series of questions for the 3° ESO technology students.
".Choose the correct answer

1. Plastics are:

- a) Elastomers which form atoms.
- b) The result of the polymerization of monomers.
- c) Light and resistant to high temperatures.
- d) Thermoplastics which melt at high temperatures.

3 Elastomers

- a) Is a polymer with the property of elasticity
- b) Is usually made of carbon, *Nitrogen* and elastine.
- c) PET belongs to elastomers

2. To make plastic, one can use:

- a) Monomers, polyvinyl alcohol and pigments.
- b) Monomers, ethanol alcohol and solvents.
- c) By-products of oil, natural gas, or mainly carbon.
- d) None of the above, as they come directly from nature.

4. Plastics are:

- a) Good heat, electricity and sound conductors.
- b) More resistant than metals, which is why they are used.
- c) Contaminants, which is why they should not be burned.
- d) Good heat, electricity and sound insulators.

5. Thermosetting plastics are those that:

- a) Can be processed indefinitely.
- b) If stretched, don't return to their original state.
- c) Can only be processed once.
- d) Hold heat well and don't melt.

6. Thermoplastics are those that:

- a) Don't hold heat well and melt.
- b) Can be processed indefinitely.
- b) If stretched, don't return to their original state.
- c) Can only be processed once.

7. Plastics that are recycled to make other plastics are:

- a) Thermoplastics.
- b) Thermosetting plastics.
- c) Elastomers.
- d) All of the above, but they are processed differently.

8. Thermoplastics:

- a) Can be re-processed various times like Thermosetting plastics.
- b) Are formed by macromolecules in a linear or complex way.
- c) Are, for example, polyethylene, polypropylene and neoprene.

9. Nylon:

- a) Is a synthetic fiber that is stronger than any natural fiber.
- b) Is used to make jeans, shirts and socks.
- c) Is very stretchy.



10. The figure on the left is made from a very common plastic. What type of plastic are we talking about?

11 -Plastics are often called good thermal conductors because they are frequently used to store materials at very high temperatures. a) That is why they are called thermal conductors

- b) They are conductors until they change state
- c) They are electrical conductors, but not thermal conductors

d) They are not thermal conductors, but they are electric conductors

12-. Thermoplastics have a simple or complex macromolecular structure, which causes this type of plastic to be:

- a) good at holding heat
- b) in general, good at adjusting to changes in temperature.
- c) change shape due to heat.
- d) once it solidifies, it cannot change shape

13. In the group of thermoplastics, one stands out as holding high temperatures. This plastic is called:

- a) PET
- b) PVC
- c) Polyvinyl
- d) Teflon

14 A plastic used for decoration, sometime have the function of glass and belonging to the thermoplastic family is called ..

- a. PVC
- b. methacrylate
- c. Polypropylene
- d. Polycarbonate

15. PVC is often used for windows and their insulation, with regard to thermal and acoustic insulation. It has a bad reputation because:

- a. The color changes with time
- b. It doesn't hold well against direct sun light.
- c. It's fragile.
- d. Environmental problems due to additives like dust, [Phthalate](#),

* Substances added to plastics to increase their flexibility, transparency, durability, and longevity

16. When creating plastics, besides monomers, what else is added?

- a. Specific additives to achieve certain properties. Antioxidants to protect chemical changes caused by oxygen or the ozone layer, stabilizers to protect from elements , lubricants to reduce friction, etc.
- b. Dyes are added to give color and thickeners so there is not excess liquid.
- c. Oxygen is added to the mix so it combines with the monomers. A pressure tube is

used.

d. Solvents, catalysts and reaction retardants.

17. Elastomers are characterized because:

- a. They consist of short chains, allowing for an ideal strength between structures and granting elasticity to this compound.
- b. Elasticine are added, giving them their name.
- c. They don't contain additives, meaning they are a very elastic substance.
- d. Their molecules form long macromolecules.
- e. Like all plastics, they hold heat well.

18. Swimsuits are made from a material called neoprene. Which group of plastics does neoprene belong to?

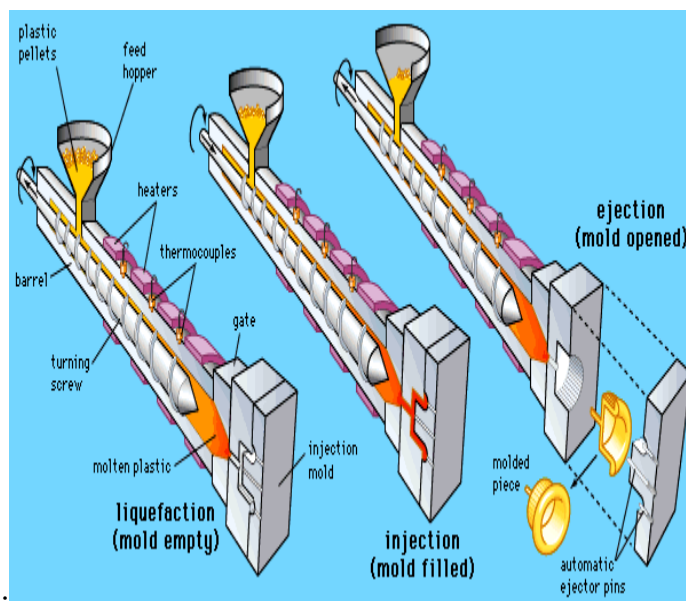
- a. Natural rubber
- b. Thermoplastics
- c. Thermosetting
- d. Elastomers

19. Plastic water bottles are made from which of the following processes?

- a. Extrusion
- b. Injection molding
- c. Blow molding
- d. Compression molding

20. In injection molding:

- a. Liquid is passed through a [funnel](#) and pushed through an endless screw.
- b. Liquid is injected by a [nozzle](#)
- c. A lot of pressure is used for the right injection
- d. It is the method used to create watering hoses.
- e. Heating bands are used.



21. The image below represents:

- a. Compression molding.
- b. Blow molding.
- c. Extrusion
- d. Injection molding