



7. Give one example of a type of fibre from each of these categories: (2)

Natural fibre –

Synthetic fibre –

8. Explain in detail the impacts that deforestation has on the environment (6).

9. Explain a reason why mining has a negative impact on the environment (2).

10. Explain how obtaining the raw material cotton has a negative impact on the environment (2).

11. Describe the process of converting a raw material of your choice into a stock form(4).

12. Describe two factors that influence the sustainability of a product (4).

13. Explain how transportation of a product throughout its life-cycle can increase the product's carbon footprint (3).

14. Give two reasons why using a product that features electricity can contribute to its carbon footprint (2).

15. State and describe two reasons why a company which regularly releases new versions of their products, can be environmentally damaging (4).

16. Explain how the 'Fair Trade' initiative has had a positive impact on the working conditions of employees from companies within third world countries (4).

17. Select one of the commercial manufacturing processes listed below and describe the process in detail you may use sketches to support your answer (5).

- a) Batik.
- b) Printing.
- c) Vacuum forming.
- d) Injection moulding.

18. Describe the term tolerance and explain why it is important in the production of mass produced products (2).

19. A manufacturer is producing a plastic drinks bottle on a mass scale.

The thickness of the wall of the bottle is 2mm. The manufacturer is working to a tolerance of  $<0.2\text{mm}$ . Give the minimum and maximum tolerances that would be acceptable for the thickness of the wall of the bottles (2).

20. Explain an issue that may arise if the manufacturer does not use a tolerance within the manufacture of the drinks bottle (2).

21. Explain one of the below manufacturing techniques in detail (3).

- a) CNC routing.
- b) Weaving.

22. TIMBER STUDENTS ONLY - Explain the function of a go/no go fixture when working with Timber based materials (2).

23. TEXTILES STUDENTS ONLY - Explain how a manufacturer would check dimensional accuracy when printing a repeat pattern onto fabric (2).

24. Explain how nesting or tessalation can be used to reduce material waste when manufactruing a product from timber or fabric (3).

25. Describe the importance of recycling when producing single use products such as plastic cutlery or a plastic drinks bottle (5).

26. A manufacturer is producing a range of seating for school children. Explain the considerations the manufacturer will have to take in relation to the key words listed below (8)

a) Ergonomics

b) Anthropometrics

c) Functionality

d) Aesthetics

27. A design company is intending to release a range of soft toys for children age 3-5. The soft toys will have an animal theme and be based around interactive learning.

Explain 5 specification points for the soft toys before design and production (5)

1.

2.

3.

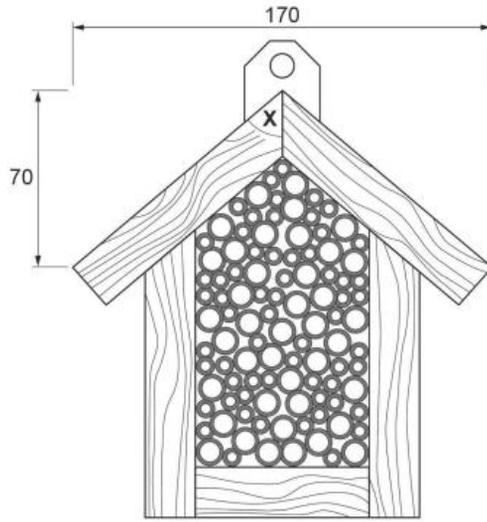
4.

5.

28. Explain with examples how a template, cutting jig or pattern can be used to accurately manufacture large quantities of handmade products (5).

29. Designers often produce a prototype model or toile within the development process of producing a new product. Explain the benefits of producing a model or toile before manufacturing products on a large scale. (4).

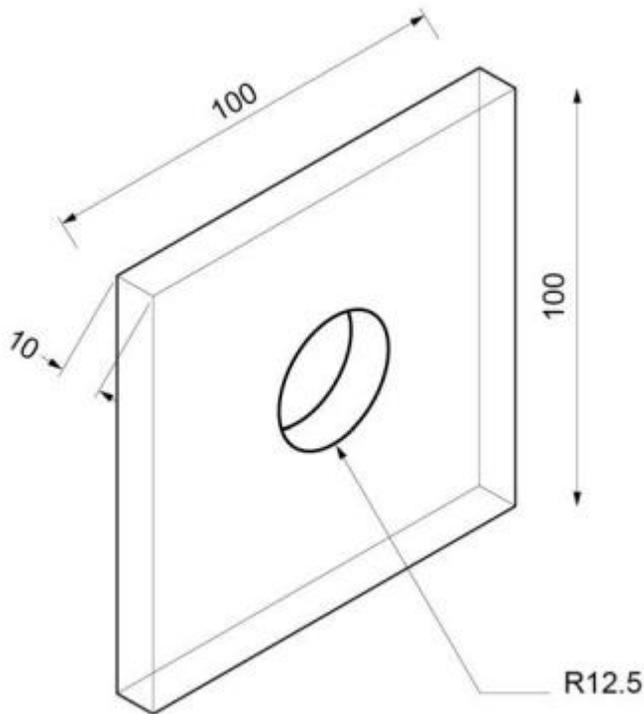
30.  
A manufacturer is producing a simple birdhouse using a template for marking.



All dimensions are in millimetres  
Not drawn to scale

Calculate the size of the angle X to the nearest whole degree to ensure an accurate fit is provided for the template of the two roof pieces, show your working and answer (3).

31.



The above component is made by pouring a liquid material into a mould.  
Calculate the volume of material required to make one component. All measurements are displayed in mm (3).