31 DRESSING bowl

Description
Large semi-spherical bowl with lip and flat base. Excellent for use in the kitchen or bathroom.

Materials
Bowl - stainless steel

Process of manufacture
Bowl - spun

Method of assembly
None

Questions ?
1 Describe how the bowl would be manufactured from flat sheet.

2 State two properties of stainless steel which make it a suitable material for this process of manufacture.

3 State three properties of stainless steel which make it a suitable material for this product.

4 The bowl could have been manufactured using mild steel. If mild steel had been used, state two finishes which could have been applied to prevent corrosion.

5 Describe how one of the finishes you have given above is applied to the mild steel.

6 State an alternative process for manufacturing the bowl and describe how the process would be carried out.

Assignment
To help give the bowl added appeal it is decided to add a pair of handles. The handles should be manufactured as separate items and attached to the bowl in the factory.
Produce a design solution for a pair of handles for the bowl. Give detailed information about the process(es) for manufacturing the handles and the method of attaching them to the bowl.

32 ATLANT chopping board

Description
A solid wood chopping board designed to fit over a rectangular sink opening. Also available as a round board.

Materials
Board - beech

Process of manufacture
Board - laminated / cut and routed

Method of assembly
None

Questions ?
1 Explain the advantages of producing the board by laminating as opposed to using a single solid piece of timber.

2 Describe the processes of laminating.

3 State a suitable finish for the board and explain why it may be necessary.

4 The board could be manufactured using a plastic. State the name of a plastic which would be suitable for this product.

5 Describe the process which would be used to manufacture the board from your named plastic.

6 Explain the advantages of using plastic for the manufacture of the board as opposed to beech.

7 State one area of the board design where the designed would have considered ergonomics.

Assignment
The function of the board is to act as a cutting surface for foods. To extend a products market it can be shown to have other functions often not related to it's primary function.
Produce a list of other uses for the chopping board and for each describe how it would be used in its new role.

33 GRUNDTAL hanging rail

Description
A hanging rail available in a number of lengths.Used to hang kitchen utensils and accessories.

Materials
Brackets - stainless steel
Rail - stainless steel

Process of manufacture
Brackets - stamped and formed
Rail - extruded

Method of assembly
Rail to brackets - screw fitting

Questions ?
1 State an alternative metal for manufacturing the brackets.

2 State an alternative process for manufacturing the brackets using your stated metal.

3 State two ergonomic factors which the designer would have considered when designing the rail.

4 Describe the process of extrusion. Sketches should be used in your answer.

5 State three aspects of *fitness for purpose* which the designer would have considered in the design of the hanging rail.

6 Describe how the designer would have researched these three areas and explain how he would have used the information to help in the design of the hanging rail.

Assignment
It has been decided to produce another item for this range of stainless steel kitchen products. A kitchen paper towel roll holder and a wine rack are the selected products for further development. Produce a design solution for one of the selected products which will complement the hanging rail.

34 TRAD decoration

Description
This ‘modern’ looking’ decoration is of a small jacket on a stand.

Materials
Stand - galvanised steel wire
Jacket - galvanised steel wire

Process of manufacture
Stand - cut and formed
Jacket - woven mesh

Method of assembly
Jacket to stand - placed

Questions ?
1 Explain which aesthetic aspects allow the decoration to be described as ‘modern’.

2 Describe how the wire stand would have been manufactured. Sketches should be used in your answer.

3 State two reasons why steel was probably not used as the material for the stand.

4 Describe the decoration in terms of its aesthetic appeal and state its possible market niche.

5 Describe three marketing strategies which a company could use to encourage sales when first introducing this product.

Assignment
It is decided to redesign the decoration with a ‘solid’ base.
Produce a design solution for a solid base for the decoration. A range a suitable materials and processes should be considered.

35 JULES chair

Description
A computer swivel chair with height adjustment.

Materials
Seat - beech plywood
Fixing plate - steel / lacquered

Process of manufacture
Seat - laminated
Fixing plate - Blanked and pressed

Method of assembly
Fixing plate to seat - screwed

Questions ?
1 Describe which properties of plywood make it a suitable choice for the manufacture of the seat.

2 Describe the process used for manufacturing the seat. Sketches should be used in your answer.

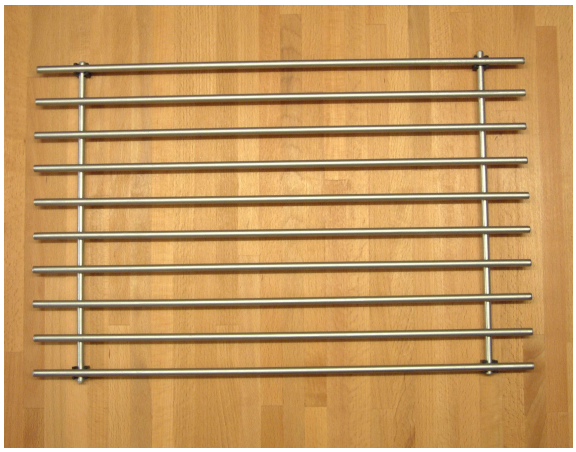
3 Explain the purpose of the holes in the seat.

4 Describe how the holes in the seat could have been made.

5 State an alternative material suitable for the manufacture of the seat.

6 State three advantages of manufacturing the fixing bracket by pressing as opposed to sand casting.

Assignment
The chair has to be redesigned with armrests. Produce a design solution for a pair of armrests for the chair.



36 LAMPLIG pot stand

Description
A pot stand designed to keep hot pots and pans from marking kitchen surfaces.

Materials
Rods - steel
Feet - polypropylene

Process of manufacture
Rods - cold drawn
Feet - injection moulding

Method of assembly
Rods to rods - welded
Feet to rods - push fit

Questions ?
1 State a suitable finish for the pot stand and describe how this would be applied.

2 State two functional reasons for the four feet fitted to the pot stand.

3 Describe the process of welding. Sketches should be used in your answer.

4 State and describe two alternative methods of joining the rods together to make the pot stand.

5 State three aspects of *fitness for purpose* which the designer would have considered in the design of the pot stand.

6 Describe how the designer would have researched these three areas and explain how he would have used the information to help in the design of the pot stand.

Assignment
The function of the stand is to protect kitchen surfaces form being marked by hot pots. To extend a products market it can be shown to have other functions often not related to it's primary function. Produce a list of other uses for the pot stand and for each describe how it would be used in its new

37 steel vacuum flask

Description
This drinks flask is designed to keep liquids hot or cold. The stopper only requires a slight turn to allow liquid to pour out. The lid doubles as a cup.

Materials
Flask tube/base/inside - stainless steel
Stopper - polypropylene / elastomer seal
Lid - stainless steel / polypropylene

Process of manufacture
Flask tube/base/inside - spun / pressed / formed
Stopper & seal - injection moulding
Lid - spun
Lid insert - injection moulding

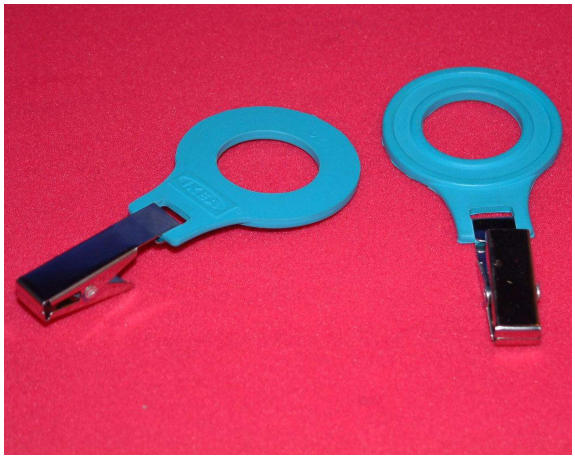
Method of assembly
Flask inside to flask tube - welded
Lid insert to lid - push fit with glue

Questions ?
1 State three properties of stainless steel which make it a suitable material for this product.

2 State the evidence you would expect to find on this product which would indicate that it had been manufactured by spinning.

3 Describe two aspects of safety which would have been considered in the design of this product.

Assignment
A larger version of the flask is to be manufactured but with the addition of a carrying handle.
Produce a design solution for a vacuum flask with a carrying handle.



38 MALLEN towel holder

Description
This product is designed for hanging up towels. The towel is gripped by the spring peg and the plastic hoop allows it to be hung on a hook.

Materials
Spring peg - steel / chrome plated
Hoop - rubber

Process of manufacture
Spring peg - blanked and pressed
Hoop - injection moulding

Method of assembly
Hoop to peg - inserted

Questions ?
1 State the name of a metal which would be suitable for the manufacture of the hoop.

2 State two suitable processes which could be used to manufacture the hoop from your stated metal.

3 Describe one of the processes which you have stated as being suitable.

4 Describe the aesthetics of the product in terms of shape, contrast and symmetry.

5 State three ergonomic factors which the designer would have considered when designing the hanger.

6 During the evaluation of this product user trials were carried out.Describe two tests which could be carried out during user trials to aid evaluation of the hanger.

Assignment
It is decide to redesign the hoop component of the hanger for a different market niche. The market niche chosen is children between the ages of 5 and 9 years of age.
Produce a design solution for the hoop (hanger) for this new market niche.

39 LOVIKEN mixer tap

Description
This mixer tap has a single rotating tap. Water flow and temperature are controlled by two levers, one for hot and one for cold.

Materials
Tap - chrome-plated brass.
Control and levers - chrome-plated brass

Process of manufacture
Tap - extruded tube / formed
Control and levers - die cast

Method of assembly
Push fit and screw

Questions ?
1 Explain why brass has been used for this product.

2 Describe the process of die casting. Sketches should be used in your answer.

3 Explain why the brass has been given a chrome-plated finish.

4 During the design of the tap the designer would have considered *obsolescence*. Explain the term *planned obsolescence* and describe how it may have effected the design of this product.

5 Explain the effect on the cost/aesthetics of the tap if the levers had been manufactured from plastic.

6 State the name of a suitable plastic for the levers of the tap.

Assignment
It is decided to produce a pair of individual taps for hot and cold water based on this design. Produce a design solution for a pair of taps which would complement and extend the LOVIKEN range.

40 ARTISTS DUMMY

Description
This is a traditional artists dummy used to help visualise the human form when sketching and painting.

Materials
Base and body parts - hardwood
Stand - steel wire

Process of manufacture
Base and body parts - turned
Stand - cold drawn

Method of assembly
Stand to base and body - push fit

Questions ?
1 A similar figure is available to the designer which is used as an aid to designing. State the name given to this figure and describe where and how in the design process it may be used.

2 State the name of a suitable hardwood for this product.

3 Describe the process of wood turning, use sketches to illustrate your answer.

Assignment
The different parts of the body are free to move allowing the dummy to be placed into various poses.
Produce annotated sketches to show three different methods of fixing the body parts together.These methods should allow for full movement of all parts.