



GCE AS/A LEVEL – **NEW**

2603U10-1

DESIGN AND TECHNOLOGY – AS unit 1

Product Design

MONDAY, 14 MAY 2018 – AFTERNOON

2 hours plus your additional time allowance

Surname _____

Other Names _____

Centre Number _____

Candidate Number 2 _____

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1.	8	
2.	8	
3.	8	
4.	8	
5.	8	
6.	40	
Total	80	

ADDITIONAL MATERIALS

A calculator, ruler, pencil and coloured pencils.

INSTRUCTIONS TO CANDIDATES

Use black ink, black ball-point pen or your usual method.

Answer ALL questions.

Write your name, centre number and candidate number in the spaces provided on the front cover.

Write your answers in the spaces provided in this booklet. If you run out of space, use the continuation pages at the back of the booklet, taking care to number the question(s) correctly.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets at the end of each question or part-question. You are advised to divide your time accordingly.

The total number of marks available is 80.

You are reminded of the need for good English and orderly, clear presentation in your answers. The quality of your written communication, including appropriate use of punctuation and grammar, will be assessed in your answer to question 5.

Answer ALL questions.

1. Computer Aided Design/Computer Aided Manufacture (CAD/CAM) is a common method of designing and manufacturing products used by many companies.

(a) Explain the basic principle used by the TWO CAM machines named below.

(i) Machine: Laser cutter [2]

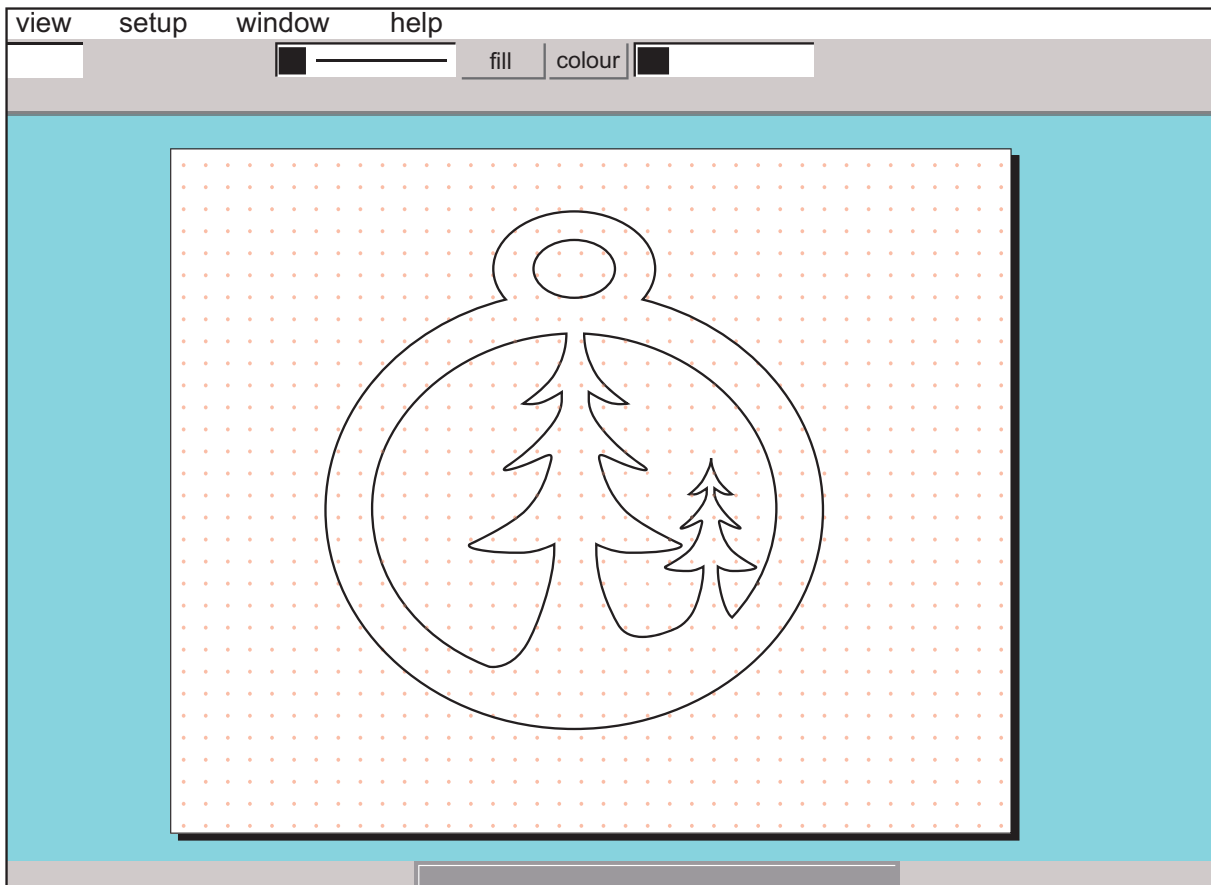
Principle: _____

1(a) (ii) Machine: 3D printer [2]

Principle: _____

- 1(b) The CAD drawing below shows a proposed design for a wooden hanging decoration. The decoration will be manufactured from 3 mm plywood.

State an appropriate CAM machine for the batch manufacture of this decoration and explain the advantages and disadvantages of your selected machine. [4]



2. Working in a manufacturing environment can be a hazardous activity and as a result suitable safe working practices must be employed.

(a) Explain the meaning of the sign shown below. [2]





3. Products are often manufactured from a range of individual components. Study the photographs opposite of a stackable chair.

(a) State a possible method of manufacture for the seat and shaping the legs.

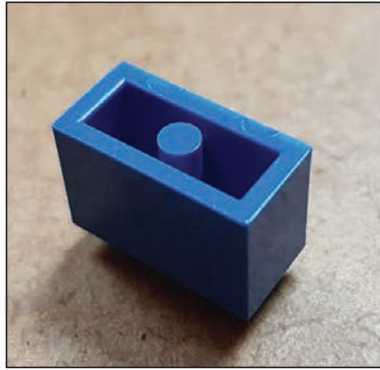
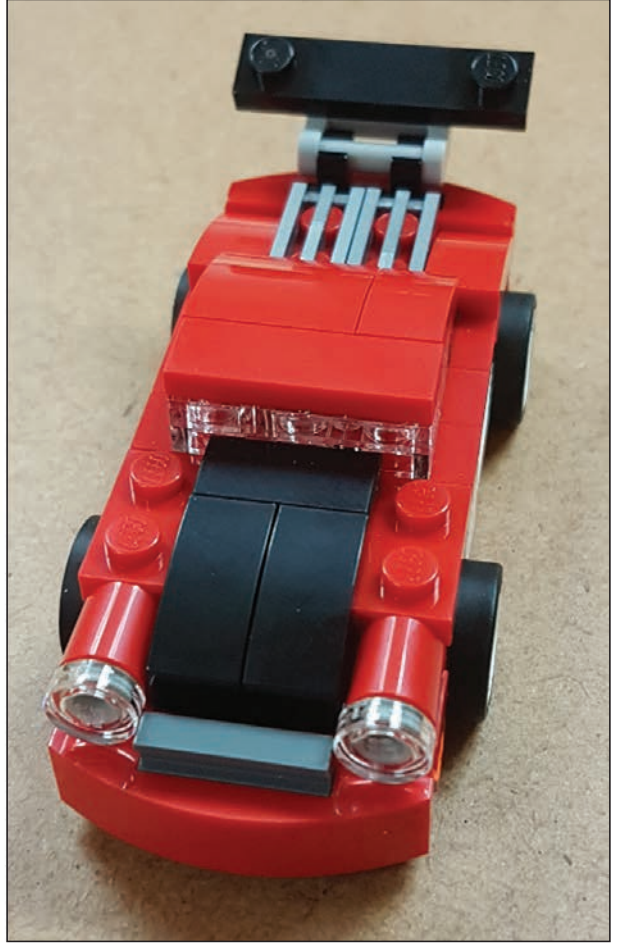
(i) Seat: _____

[1]

(ii) Shaping the legs: _____

[1]

- 3(b) The seat and frame will need to be joined to form a functioning chair. Using notes and sketches explain and justify a suitable fixing method. [6]**



Telephone A



Telephone B



PROBLEM

It is important that independent visually impaired persons have access to stylish modern household equipment. A land line phone is important for easy communication and must be easy to operate.

DESIGN BRIEF

You are asked to design the hand set only for a stand-alone land line phone that is modern in style. The hand set must allow the user to quickly distinguish the mouth piece from the ear piece.

6(b) Write FOUR fully justified specification points that will ensure the requirements of the user are met.

[8]

Point 1: _____

6(b) Point 2: _____

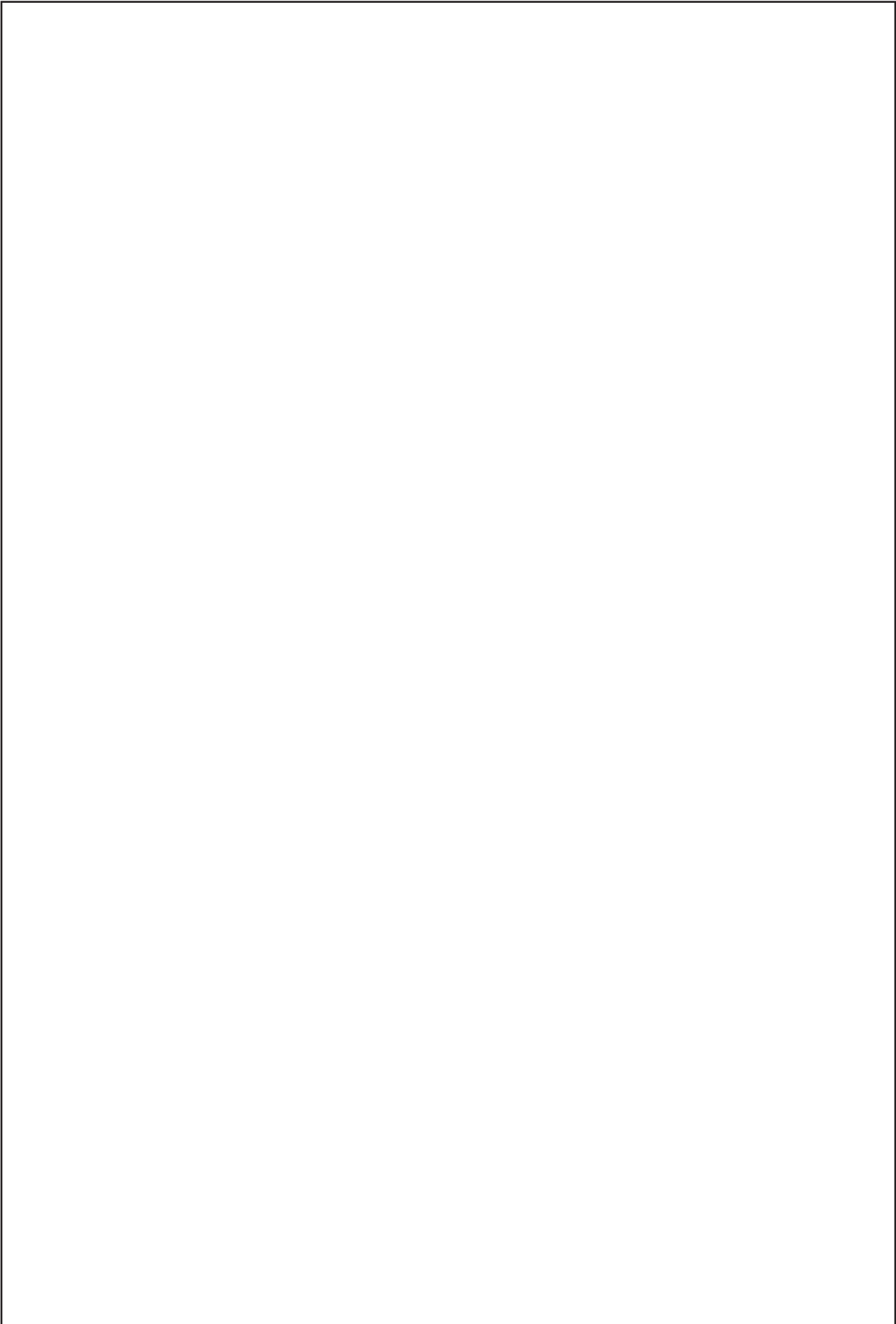
Point 3: _____

6(b) Point 4: _____

6(c) In the space provided produce a possible design for the handset. You are required to use a combination of 2D and 3D freehand drawings.

Marks will be awarded for:

- (i) An annotated design proposed that displays evidence of your consideration of user interface, function and style. [8]**
- (ii) Labelling and justifying the use of materials in your design. [4]**
- (iii) The quality/presentation and communication of your 2D/3D drawings. [4]
You are not expected to render, colour or shade your design work.**



END OF PAPER

