Total marks — 80

SECTION 1 — 30 marks
Attempt ALL questions.

SECTION 2 — 50 marks
Attempt ALL questions.

Write your answers clearly in the answer booklet provided. In the answer booklet you must clearly identify the question number you are attempting.

Use blue or black ink.

Before leaving the examination room you must give your answer booklet to the Invigilator; if you do not, you may lose all the marks for this paper.
SECTION 1 — 30 marks
Attempt ALL questions

In this section you will be asked questions relating to your knowledge and understanding of historical and current design influences.

1. Design movements have been influenced by a wide range of issues that inspired original products with distinctive styling.

   (a) Identify a Design Movement and explain its inspiration and contributions to design.
   
   You should make reference to some of the following:
   
   • Reaction to advances in material and technology
   • Response to changing social attitudes
   • Products, projects that exemplify its work
   • How its work or principles influenced the work of others
   • How its work contributed to fashion and style
   • Public reaction to it at the time.

   Manufacturing since the 1980s has made increased use of computerised technology.

   (b) Describe how computers are used in the manufacture of products and their impact on the manufacturing industry.

   Globalisation has led to markets dominated by a few large manufacturers producing similar products for mass consumption.

   (c) Explain why marketing has become an essential activity when developing products in a global market.

   Henry Dreyfuss pioneered the use of ergonomics in his design work during the 1930s.

   (d) Explain why ergonomics has been so influential to the evolution of products. You must refer to specific products in your answer.

   Each period in “Design” can be identified by fashions of the time.

   (e) Explain why changes in fashion can create opportunities for companies and how this influences the products they produce.
2. The Initial Eazy Changer by Graham Scutt is a portable baby changer designed for public use in leisure centres.

(a) Describe a range of techniques the designer could have used to ensure the comfort, safety and ease of use of the Initial Eazy Changer.

A wide range of techniques is used to communicate between a variety of different people during the design of a product.

(b) Identify techniques and explain why they are suitable for communication of information between the following people:

• Market Researcher and Designer
• Designer and Production Engineer
• Designer and Client.
3. The Sleek Dive Light by Jon Osborne is a torch designed for SCUBA divers.

(a) Explain why the selected materials are suitable for the different components of the Sleek Dive Light.

The designer of the Sleek Dive Light has incorporated many features to ensure it is assembled to the highest standards.

(b) With reference to products with which you are familiar, describe features that have been incorporated into the product to ensure ease of assembly. Use sketches to illustrate your answer.

3D printing was used in the development of the Sleek Dive Light.

(c) Describe the advantages 3D printing has over traditional modelling techniques.
4. The recently developed Panono camera has multiple lenses. When it is thrown into the air it automatically captures 360 degree panoramic images or “selfies”.

Development of products like the Panono can be driven by manufactures’ desire to use new technologies, or due to changing demands from consumers.

(a) Describe the benefits of these two approaches. You should use examples of products to illustrate your answer.

Launching products onto the market can be a risk for a company.

(b) Explain why launching new products onto the market can be a risk for a company.
5. The Shield Extinguisher designed by June Young Kim & Ji Min Lee, attempts to bridge the gap between extinguishing the fire and protecting the user.

Designers have to consider many issues when developing effective products.

(a) Describe how the following issues may have influenced The Shield Extinguisher:

- Ergonomics
- Conditions in which it is used.

Products such as The Shield Extinguisher must be manufactured to the highest standards.

(b) Describe how a company could ensure their products are manufactured to the highest standard.
6. The “Supersonic Stick on the Wrist for Blind People” designed by Minhye Kim, fits in the user’s hand allowing them to detect objects in their path.

For a successful solution to be generated it is important that the problem is fully understood. Two methods of gathering information about problems are questionnaires and user trips.

(a) Describe the key stages of questionnaires and user trips which would ensure appropriate information is gathered about issues facing visually impaired people.

Products such as the “Supersonic Stick on the Wrist for Blind People” are likely to be produced in small numbers.

(b) Describe how the problems associated with manufacturing high-tech products in small numbers may be overcome.
ACKNOWLEDGEMENT

Section 2 Question 2 – Images of *The Initial Eazy Changer* designed by Graham Scutt. Reproduced by permission of Graham Scutt.

Section 2 Question 3 (Top image) – JonMilnes/shutterstock.com

Section 2 Question 3 – Images of and reference to *The Sleek Dive Light* designed by Jon Osborne.

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Section 2 Question 5 – Images of *The Shield Extinguisher* designed by June Young Kim and Ji Min Lee, are taken from www.yankodesign.com, 8th April 2014.

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Section 2 Question 6 – Image (on left) of *Blind man walking with aid of white stick* – Stock photo (Masterfile.com/618-00510215). Reproduced by permission of Masterfile UK Ltd. © Masterfile Royalty Free.

Section 2 Question 6 – Images (in middle and on the right) of *Supersonic Stick on the Wrist for Blind People* designed by Minhye Kim, are taken from www.yankodesign.com, 29th October 2010.