

General Certificate of Education
June 2004
Advanced Level Examination



HOME ECONOMICS
Unit 7 Textiles Science and Technology

HEC7

Monday 21 June 2004 Afternoon Session

In addition to this paper you will require:
an 8-page answer book

Time allowed: 1 hour 30 minutes

Instructions

- Use a blue or black ink (or ball-point) pen. Pencil should only be used for drawing.
- Write the information required on the front of your answer book. The *Examining Body* for this paper is AQA. The *Paper Reference* is HEC7.
- Answer **two** questions.
- Fasten any supplementary sheets you use to the answer book before handing it to the invigilator at the end of the examination.

Information

- The maximum mark for this unit is 50. Mark allocations are shown in brackets.
- The number of marks is given in brackets at the end of each question or sub-question.
- You will be assessed on your ability to use an appropriate form and style of writing, to organise relevant information clearly and coherently, and to use specialist vocabulary, where appropriate. The degree of legibility of your handwriting and the level of accuracy, punctuation and grammar will also be taken into account.

Answer **two** questions only

Each question carries 25 marks.

- 1** Explain the meaning of the following textile terms and comment on their significance with respect to the named fibre, fibres or fibre blends.
- (a) standard moisture regain for cotton and polyester *(6 marks)*
 - (b) elasticity of wool and cotton *(6 marks)*
 - (c) heat-setting for cotton/polyester blends *(6 marks)*
 - (d) mercerisation of cotton *(7 marks)*
- 2**
- (a) Compare the flammability of cotton and cotton/polyester blended fabrics. *(9 marks)*
 - (b) Describe the structure, properties and uses of acrylic and modacrylic fibres. *(8 marks)*
 - (c) Outline how textile fibres can be identified using burning tests and fibre selective stains (Shirlastains). *(8 marks)*
- 3** Discuss the following statements.
- (a) Tactel-micro is a polyamide fibre which is now used extensively in outdoor clothing. *(6 marks)*
 - (b) Teflon is a water and oil-repelling finish which is widely used on upholstered furniture. *(6 marks)*
 - (c) The introduction of perborate into washing powders in the 1950s represented a big step forward in washing powder technology. *(7 marks)*
 - (d) Modern fabric softeners contain mixtures of cationic and non-ionic surfactants. *(6 marks)*
- 4**
- (a) What are the problems associated with the dyeing of polyester-rich polyester/cotton fabrics and how are these problems overcome? *(6 marks)*
 - (b) Why do coloured silk fabrics often fade during the first wash? *(6 marks)*
 - (c) Give reasons why viscose rayon fabrics are easy to dye, but the fibres themselves are weak, especially when they are wet. *(7 marks)*
 - (d) Explain why wool fibres and fabrics are dyed with acid and basic dyes. *(6 marks)*

END OF QUESTIONS