

General Certificate of Education
June 2007
Advanced Level Examination



HOME ECONOMICS
Unit 7 Textiles Science and Technology

HEC7

Wednesday 13 June 2007 1.30 pm to 3.00 pm

For this paper you must have:

- an 8-page answer book.

You may use a calculator.

Time allowed: 1 hour 30 minutes

Instructions

- Use blue or black ink or ball-point pen.
- 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.
- Do all rough work in the answer book. Cross through any work you do not want marked.

Information

- The maximum mark for this unit is 50.
- The marks for questions are shown in brackets.
- You are reminded of the need for good English and clear presentation in your answers. Quality of Written Communication will be assessed in all answers written in continuous prose.

Answer **two** questions.

Each question carries 25 marks.

1 Five fibre blends are shown.

1. 70% polyester / 30% cotton
2. 95% polyamide / 5% elastane
3. 80% cotton / 20% polyamide
4. 50% polyester / 50% cotton
5. 80% wool / 20% polyamide

(a) For each item listed in (b) below choose the fibre blend you consider to be the most appropriate. *(5 marks)*

(b) In each case give reasons why your chosen blend has the best combination of properties for the identified textile item.

- a duvet cover *(4 marks)*
- a pair of summer socks *(4 marks)*
- school trousers *(4 marks)*
- a one-piece swimsuit *(4 marks)*
- a carpet for a lounge *(4 marks)*

- 2 (a) The table shown below gives the wet and dry strengths for three different yarns.

Yarn	Breaking Load (g)	
	Dry	Wet
A	1300	1315
B	1160	800
C	900	1075

- (i) Using the results shown in the table, identify which yarn is 100% polyamide, which is 100% cotton and which is 100% viscose rayon. *(3 marks)*
- (ii) In each case give two reasons why the yarns are made from polyamide, cotton or viscose rayon. *(6 marks)*
- (b) Dye fastness is a very important consideration if consumers are to be satisfied with their purchases of garments and other textiles.
- (i) What is meant by dye fastness? *(4 marks)*
- (ii) Give three important fastness properties which are significant to the consumer for each of the following textiles. Explain why these fastness properties are important for the named textile item.
- curtains *(3 marks)*
 - socks *(3 marks)*
 - upholstery fabrics *(3 marks)*
 - toddlers' clothing *(3 marks)*

Turn over for the next question

Turn over ▶

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- 3 (a) (i) What is meant by standard moisture regain? *(3 marks)*
- (ii) Explain its significance with respect to natural and synthetic fibres. *(4 marks)*
- (b) (i) What are regenerated cellulosic fibres? *(2 marks)*
- (ii) Explain why they are used in disposable textile items. *(6 marks)*
- (c) Describe the effects of perspiration on silk fabrics. *(5 marks)*
- (d) (i) What are cationic fabric softeners? *(2 marks)*
- (ii) Explain how they function to soften clothing during washing. *(3 marks)*
- 4 Explain what happens when:
- (a) a 100% wool jumper is carelessly washed in water above 40° C using a heavy-duty detergent; *(6 marks)*
- (b) a disperse dye is used for dyeing polyester; *(6 marks)*
- (c) a burning taper is used to ignite a narrow strip of a 50% cotton / 50% polyester blended fabric suspended vertically in a laboratory fume hood; *(8 marks)*
- (d) microfibre polyamide filaments are used in the production of tights. *(5 marks)*

END OF QUESTIONS