Chapter 1: Context

1 (p. 14) ancient caravan route that linked the eastern Mediterranean with Central China introduced silks and other Chinese products to Central Asia and Europe
2 (p. 14) the East Indies
3 (p. 14) kente cloth from Ashanti kingdom in Ghana, printed kanga cloth from East Africa, Zulu beadwork from South Africa
4 (p. 15) the flying shuttle
5 (p. 15) increased productivity in spinning
6 (p. 16) a loom that incorporated a series of punchcards to control a complex pattern of warp threads – forerunner to the contemporary jacquard loom
7 (p. 19)
—the finest copperplate and roller-printing techniques
—toile de Jouy
8 (p. 19)
—nylon
—coal, water and air
9 (p. 20) spandex (also called elastane)
10 (p. 20) synthetic dyes are cheap to produce, yield brighter colours, are more colourfast and easier to apply
11 (p. 21) extremely efficient in controlling the management of dye-use in printing and reducing dye wastage during manufacturing
12 (p. 22)
—to improve society through the integration of art and design
—committed to educating a new type of designer for industry
13 (p. 24) Sonia Delaunay and Raoul Dufy
14 (p. 24) Verner Panton
15 (p. 26)
—a pioneering Japanese company in the field of techno-fabrics formed by the designers Junichi Arai and Reiko Sudo in 1984
—NUNO stresses the importance of the relationship between craft and new technology
16 (p. 28)
—Herman Miller
—that interior décor should be accessible, affordable and functional
17 (pp. 29-30) **d.** Emilio Pucci
18 (p. 30) Maija Isola
19 (p. 32) the industrial dye process
20 (p. 33 and p. 217) a textile appropriately sourced and manufactured with minimal energy and environmental impact

Discussion/essay questions

1 Write an essay on the history of textile design and manufacture from the ancient Egyptians up to the Industrial Revolution in the eighteenth century. Mention the importance of the interchange between cultures brought about by trade and the creation of unique textiles, particularly in Africa. (pp. 11–15)

2 Summarize the key manufacturing inventions of the Industrial Revolution in eighteenth century Britain. Discuss what impact these inventions had on the design and production of textiles and on the workers employed in the textile industry. (pp. 15–19)

3 Choose two of the following textile designers and for each one outline his/her career, work and influence: Anni Albers, Verner Panton, Reiko Sudo, Alexander Girard, Lucienne Day, Emilio Pucci, Vuokko Nurmensniemi (pp. 22–30)

Chapter 2: Printed textile design

1 (p. 37) process involves using a fine chisel to cut out a motif image on a wooden block; ink is then applied to the block which is pressed to a length of cloth to make a printed impression; the process is repeated to create an overall pattern
2 (p. 38) mechanized roller printing
3 (p. 39)
—flatbed screen-printing
—a fine silk-gauze mesh was stretched around a frame and lacquer was applied to create a stencil (the unlacquered areas formed the motifs or pattern to be printed); the frame was placed on the fabric and a squeegee used by hand to force a dye paste through the mesh; fabric was then allowed to dry in between the printing of each different colour
4 (p. 39) **d.** rotary screen-printing
5 (p. 40)
- cotton – Procion™
- silk – acid dyes
- nylon – disperse dyes
- wool – acid dyes

6 (p. 41)
—finished repeat design must be accurately transferred to film
—a process that involves colour separation and subsequently exposing the screens to ultraviolet light
7 (p. 43) **d.** a croquis
8 (p. 43) the designer, or separation artist, will place the first film over the design and paint the first colour area in the design on to the film with an opaque medium; the same is done for all subsequent colours (except the areas where it is possible to achieve the colour in the design through overprinting)
9 (p. 44) a solid table covered with a layer of felt over which a canvas-coated neoprene rubber sheet is stretched; the sheet is coated with a water-soluble adhesive which is dried either by fan heaters placed on the table or an overhead heating system
10 (p. 45) False, lighter colours first to darker colours last
11 (p. 50) binder catalyst
12 (p. 50) comparatively cheap and easy to use dyes provide a better fabric handle
13 (p. 53) the devoré print paste removes the viscose velvet pile and leaves the silk backing; the paste is printed on to the cloth which is put

into a baking oven that produces controlled dry-heat temperatures

14 Dyes are fixed to cloth by **steaming** (p. 53)

15 (p. 54) printing on to synthetic and man-made fabrics, such as polyester and nylon, using disperse dyes

16 (p. 63 and p. 217) a non-repeating design, often digitally generated and printed, conceived in relation to the shape and form of the product to which it will be applied

17 (p. 64) to print samples in preparation for rotary screen-printing or for small production runs for high-end textiles

18 (p. 65) because of their increased speed and production-run capabilities; fashion houses can print to order and there is no longer the need for warehouse stock that may be unsold and therefore wasted

19 (p. 66) process that builds up the colours and patterns in a design by projecting tiny drops of different-coloured inks, in predetermined micro-arrays, on to the surface of a cloth

20 (p. 66) cyan, magenta, yellow and black

21 (p. 67) **c.** dots per inch

22 (p. 67, 71, p. 216)
—CAD – dedicated design software used partially or wholly by the textile designer in the generation of a design
—CAM – computer-driven textile production processes, such as digital inkjet printing

Discussion/essay questions

1 Write an essay which explores the history of printing from ancient times through to the twenty-first century. Consider such processes as block printing and screen printing, and discuss the impact of the advent of new technology such as digital inkjet printing. (pp. 37–40, 64–71)

2 Discuss the use of two of the following design and pattern types in the interior furnishings and fashion markets: floral, paisley, toile de Jouy, geometric, conversational, camouflage, world cultures. For each pattern, research a contemporary designer or company who uses that pattern type in their textiles. (pp. 54–63)

3 Discuss the work of the Textiles Environment Design (TED) group and Design4Science in relation to environmental and sustainable textile design. (pp. 72–73)

Chapter 3: Woven textile design

1 (p. 79 and p. 219)
—warp thread – the longitudinal yarn
—weft thread – the filling yarn which is interlaced with the warp to make the fabric

2 (p. 81) by the raising and lowering of a system of shafts to which the warp threads are attached; as the threads are raised or lowered a gap is created through which the weft thread is passed

3 (p. 81) True

4 (p. 84 and p. 219)
—spun and filament
—spun yarns – are made of relatively short lengths of fibre that are mechanically twisted or spun so that they hold together
—filament yarns – are composed of continuous strands of fibre

5 In weaving, a single warp thread is called an **end** or **warp end**. (p. 85)

6 A single weft yarn or thread is known as a **pick** or **weft pick** (p. 85)

7 (p. 86) **b.** notation system

8 (pp. 89–91)
- plain weave – the threads in both warp and weft directions interface alternately; firmer and stronger fabric than those constructed with the same yarn types but using other structures
- twill weave – characterized by diagonal lines in the cloth; in simplest form each weft thread is set one warp thread to the right of the preceding weft thread; allows for more weight and better drape of the fabric
- satin and sateen weaves – satin weaves are warp-faced weave effects and have a smooth often lustrous surface; sateen weaves are predominantly weft-faced weave effects
- tweed – thick woollen or blended cloth, which can have irregular slubs or knots

9 (p. 91) to remove natural fats, waxes, dirt and impurities

10 (p. 91 and p. 218) the dyeing of woven fabric rather than dyeing the yarn before weaving

11 (p. 91 and p. 217) to induce shrinkage to create a smoother and more compact cloth

12 (p. 96) **dedicated computer software** that creates and prepares a finished design for weaving; the **jacquard controller**, which receives a design, stores and edits it and transmits its data to the **electronic jacquard loom** that weaves the design into cloth

13 (p. 102, p. 216 and p. 219)
—actuation – the technology that enables intelligent textiles to move in response to stimuli, adapting their structures or properties to suit particular environments
—smart textiles – textiles with woven-in nanotechnologies that enable interaction with the environment and microcomputers

Discussion/essay questions

1 Research further smart textiles which incorporate nanotechnologies. What uses can such textiles be put to both today and in the future? Are there any disadvantages to such fabrics? (pp. 100–102)

Chapter 4: Mixed media textile design

1 (p. 108)
—tattooing
—in Bulgaria and Tunisia tattoos have been translated into embroidery patterns and Kuba cloth from the Congo is inspired by traditional tattoos

2 (p. 108)
—Crusaders
—to make protective doublets for wearing under chain mail or plate armour

3 (p. 109) to create a stable, tensile fabric surface

4 (p. 109) **b.** a glover

5 (pp. 110–112)
- straight stitch – passes through the cloth ground in a basic up and down movement
- backstitch – the needle comes up from the back of the cloth, makes a stitch to the right and then goes down to the back of the cloth
- chain stitch – catches a loop of the thread on the surface of the cloth, the needle comes up from the back of the cloth and then returns into the hole it came out of
- blanket stitch – not unlike chain stitch as it catches a loop of the thread on the surface of the cloth, but needle then returns to the back of the fabric at a right angle to the hole
- feather stitch – catches a loop of thread on the surface of the fabric; differs from blanket stitch in that the needle is not returned to the back of the fabric at a right angle to the hole
- cross stitch – created by producing a diagonal stitch, or line of stitches, in one direction and then crossing the diagonal stitch, or line of stitches, in the other direction
- knotted stitch – created by wrapping the thread around the needle before passing it to the back of the cloth
- couching – requires two threads, is 'laid' on the surface of the fabric while the other binds the laid thread to the fabric

6 (p. 115) the feed dog mechanism, which consists of metal teeth, lifts up and down and moves the fabric forward, the needle plate works in conjunction with the feed dog to ensure the effective movement of fabric through the stitching process

7 (p. 116) a hand-stitching technique used to create a solid flexible fabric of beads, or a solid motif of beads, for sewing on to a ground fabric

8 (p. 124) top cloth, wadding or batting (middle cloth), lining (bottom cloth)

9 (p. 124)
—running stitch
—backstitch and stab stitch

10 (p. 124) to create elevated linear forms on the surface of the textile and to add weight and firmness

11 (p. 125) stitching (either by hand or machine) together different fabrics to a background cloth to create a textile piece

12 (p. 127) fabrics that fray

13 (p. 127) a double or multiple folding in a garment or other item made of cloth

14 (p. 128)
- gathering – converts the edge of a piece of fabric into mini folds that are bunched together on thread
- ruffle – a strip of fabric that is reduced in length by gathering or pleating, which releases folds that make up a floating edge
- smocking – uses hand stitching to secure and adjust the folds of a finely pleated area of cloth

15 (p. 132) because it can cut intricate details on a broad variety of fabrics

16 (p. 132) laser cutting cuts a hole through the fabric whereas laser engraving engraves a pattern on the fabric's surface

Discussion/essay questions

1 Discuss some of the commercial and cultural uses of embroidery in the West today. Why do you think the technique is still used? Provide some examples of innovative embroidery work by contemporary textile designers or textile design companies. (p. 116, pp. 130–131)

2 Research in more detail the Gee's Bend quilters collective in the United States. Write an essay which explores the history of this collective and the quilts they produced. (p. 122)

Chapter 5: Design principles

1 (p. 140)
—an abstract idea, a plan or intention
—in textile design the concept is the trigger that stimulates the development of a new collection

2 (p. 143)
—primary – red, yellow and blue
—secondary – orange, green and violet

3 (p. 143)
—result of mixing a primary with a secondary colour
—yellow-orange, red-violet, blue-green, red-orange, blue-violet, yellow-green

4 (pp. 145–146)
- hue contrast – undiluted colours at their most intense luminosity
- black and white contrast – extremes of light and dark contrast
- cold to warm – 'temperature' created by the visual impact of a colour
- complementary contrast – the use of two colours whose pigments mixed together produce a neutral grey to black
- simultaneous contrast – caused by the fact that when looking at a colour the eye needs its complementary one and creates it spontaneously if it is not already present

- saturation contrast – relates to the amount of pure pigment within a colour, it is the contrast between intense, unmixed colours and dull, diluted ones
- extension contrast – involves the relative sizes of two or more areas of colour

5 (p. 147) RGB and CMYK

6 (p. 149)
—a co-ordinated colour chart
—the colours on the charts are matched with a colour chart for pigment inks or dyes on fabric and thus enable the provision of accurate information of how the colours in a design will look on fabric

7 (p. 149)
—primary visual research – drawing first hand from artefacts, etc.
—secondary visual research – involves identifying imagery, motifs and other design information in specialist publications

8 (p. 158)
—block repeat – where one motif is simply placed alongside another
—composite repeat – is designed with three or more pattern elements

9 (p. 159) where the motif in a pattern is angled in a variety of directions and seems to have been scattered at random which creates a sense of movement in the pattern

10 (p. 162) presenting a textile in the context in which it will be used

Discussion/essay questions

1 Discuss the advantages and disadvantages of CAD. Do you think that CAD will ever totally replace the use of traditional drawing tools? (pp. 138–139, p. 150)

2 Write an essay on the role and importance of trend forecasting in textile design. Consider what is meant by trend forecasting and look at the work of a number of the international trend-forecasting agencies for fashion, interiors and industrial products, such as Trend Union and WGSN. (pp. 141–142)

3 Research in more detail the contribution of twentieth century artists, such as Bridget Riley and Jim Lambie, to the exploration of pattern or, alternatively, research the attitude towards pattern of the Memphis group in Milan, Italy. Write an essay on your findings including examples of work of your chosen artist/group. (pp. 154–155)

Chapter 6: Creating a collection

1 (p. 170 and p. 217) visual research gathered for a design project by conducting primary research on or at the location of the research subject area

2 (p. 172) to formalize a concept and clarify the direction a projected design will take by displaying inspirational images, text, objects and textiles

3 (p. 172 and p. 216)
—defines a design project's requirements, explaining and clarifying the objectives
—the client, agent or design studio director

4 (p. 176) False, fabric sampling can also take place as a test midway through the design process or at different times depending on the designer or design studio and the textile medium

5 (p. 177) because machinery has to be taken out of larger production runs and time that is not used to make saleable products on expensive machinery is costly

6 (p. 178) to initiate, organize, develop and direct the textile collection's development

7 (p. 178) False, produce one main range a year

8 (p. 185) to enable designers and companies to showcase new collections and products; allows designers to maintain existing client relationships and cultivate new ones; and also provides an opportunity to see what competitors are producing and to learn about current trends and developments in textiles