



Benha University
Faculty of Applied Arts
Dept. of Textile Printing, Dyeing and Finishing
Fourth year student



Second Semester
Date: June 2016
Time: 120 min.
Full mark: (30)

**Exam of (languages)
(2 pages)**

First Question: (10 points)

I. Put (T) for true and (F) for false answers in the following statements.

II. Correct the false ones.

1. *Although the intensity of UV radiation is much less than visible or infrared radiation, the energy per photon is significantly higher.* (T)
2. *The smaller the SPF, the more protective the fabric is to UV radiation.* (F)
The larger the SPF, the more protective the fabric is to UV radiation.
3. *Screen Printing is a method of printing similar to using a stencil.* (T)
4. *Bleach oxidizing is based on hydrogen peroxide or sodium hypochlorite as oxidizing agents.* (T)
5. *Desizing is an important step prior to dyeing fabric, since size can interfere with dye uptake.* (T)
6. *One of the challenges on chemical finishing is that the emulsion stability of different products may be increased by product interactions.* (F)
One of the challenges on chemical finishing is that the emulsion stability of different products may be reduced by product interactions.
7. *Heat transfer printing is a method of printing thermoplastic fibers with reactive dyes.* (F)
Heat transfer printing is a method of printing thermoplastic fibers with disperse dyes.
8. *Block Printing is a process wherein the background color of a design is printed rather than dyed.* (F)
Blotch Printing is a process wherein the background color of a design is printed rather than dyed.
Or Block Printing: The printing of fabric by hand, using carved wooden or linoleum blocks, as distinguished from printing by screens or roller.
9. *Flame resistant is a material that burns slowly, or is self-extinguishing after removal of an external source of ignition.* (T)
10. *Carbonizing of wool is treatment of wool to alter the surface to make the wool less prone to shrinkage in washing and to improve dye uptake.* (F)
Chlorination or carbonizing is treatment of wool with acid and heat to remove plant materials.

Second Question: (10 points)

Choose the right answer in the following questions:

1. *Is a method of printing a pattern on the face and the back of a fabric with equal clarity:*
 - a. Blotch printing
 - b. Block printing
 - c. Duplex printing
2. *The colors produced by pigment printing are bright and generally fast except to*
 - a. Crocking
 - b. Light
 - c. Wash
3. *Is a term to describe fiber or yarn heat-treated to reduce the tendency of the fiber to shrink, elongate under a load, or at elevated temperatures.*
 - a. Heat stabilized
 - b. Heat Resistance
 - c. Heat setting
4. *Is a mechanical finishing process for fabrics to produce special effects, such as high luster, glazing, moiré, and embossed effects.*
 - a. Fulling
 - b. Calendering
 - c. Brushing
5. *In nanoparticles production, increasingly complex structures are specifically assembled form atomic or molecular components is:*
 - a. The “top-down” approach
 - b. The “bottom-up” approach
 - c. Both

Third Question

(10 points)

1. Outline the importance of using nanotechnology in textile applications

- 1- *Improve the properties and functional performance of existing materials.*
- 2- *Greatly increase the use in technical textiles, biomedical and healthcare end-uses.*
- 3- *Low chemical usage.*
- 4- *Low energy costs.*

2. Write short notes about: (choose one)

a. Discharge Printing and Resist Printing

Discharge Printing:

In “white” discharge printing, the fabric is piece dyed, then printed with a paste containing a chemical that reduces the dye and hence removes the color where the white designs are desired. In “colored” discharge printing, a color is added to the discharge paste in order to replace the discharged color with another shade.

Resist Printing:

A printing method in which the design can be produced: (1) by applying a resist agent in the desired design, then dyeing the fabric, in which case, the design remains white although the rest of the fabric is dyed; or (2) by including a resist agent and a dye in the paste which is applied for the design, in which case, the color of the design is not affected by subsequent dyeing of the fabric background.

b. Chemical Finishing and Mechanical Finishing

Chemical Finishing: *Or ‘wet finishing’ Processes in which additives are applied to change the aesthetic and functional properties of a material. Examples are the application of antioxidants, flame- retardant, wetting agents, and stain and water repellents.*

Mechanical Finishing: *Or ‘dry finishing’ Changing the appearance or physical properties of a fabric by a mechanical process such as calendering, embossing, bulking, compacting, or creping.*