Roll No. ..... Total Pages : 03

BT-8/M-18 38095

NONWOVEN TECHNOLOGY

TT-434-A

Time : Three Hours] [Maximum Marks : 100

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit.

Unit I

1. (a) Define and classify nonwoven fabrics. Draw a flow chart showing manufacturing steps of non-woven fabrics. Briefly discuss the fabric production stages. **10**

   (b) Mention the characteristics of major fibres used for nonwoven. **10**

2. Explain the aerodynamic and wet lying process with neat schematic diagram for each. **20**

Unit II

3. (a) Explain the needle punching process with a schematic diagram. **10**

   (b) Discuss the factors which affect the structure and mechanical properties of needle bonded nonwovens. **8**

   (c) Write the application areas of needle bonded non-wovens. **2**

4. (a) Discuss briefly the process parameters which are of importance for the quality of needle bonded nonwovens. **5**

   (b) Discuss the mechanism of Maliwat and Malivilies stitch bonding technique. **15**

Unit III

5. (a) Briefly state the chemical bonding process. **8**

   (b) Discuss the various forms and classes of binders suitable for chemical bonding. **8**

   (c) What are the essential characteristics of the binder polymer for thermal bonding ? **4**

6. (a) Discuss the spray bonding and print bonding process with schematic diagram for each. **12**

   (b) What is Fusion bonding ? Discuss the thermal bonding process through perforated drums and perforated belts. **8**

Unit IV

7. Write short notes on the following wet finishing techniques for nonwovens : 4×5=20

   (a) Washing (b) Dyeing

   (c) Printing (d) Chemical finishing.

8. (a) What are the defects which generally occur in nonwovens ? 5

   (b) Write the list of application for nonwoven materials. 5

   (c) Explain the following dry finishing techniques : 10

   (i) Shrinkage (ii) Wrenching.