Register Number: ……

B.TECH DEGREE EXAMINATIONS: NOV / DEC 2010

Fifth Semester

TEXTILE TECHNOLOGY

U07TT502: Nonwovens

Time: Three Hours **Maximum Marks: 100**

Answer All the Questions

PART A (10 x 1 = 10 Marks)

1. The Kunit layer-bonding process (KSB process), ---------- fabrics with pile layers are bonded

   A) 2 B) 3 C) 4 D) 5

2. Maliwatt Stitch-bonded nonwoven is good suitability for needle- punching

   A) Thread of the loop is destroyed B) Many flexible fibres lying Cross wisely

   C) Loop side remains D) Few flexible fibre parts of the fibre loop lying cross wisely

3. Range of melting temperatures of thermoplastic adherends- Glueing web - Polyolefin.

   A) 90–135^0 *C,* B) 135–150^0 *C,* C) 65–135^0 *C* D) 110–170^0 *C*

4. Slitting has become an important method, originally developed to improve the ---------- of films.

   A) Softness B) softness and drape C) drape D) strength

5. Ultrasonic welding process, the frequency of an alternating current is increased from ----------by an oscillator and this energy is converted into a corresponding mechanical vibration by means of an electromechanical converter.

   A) 500 Hz up to 1000 kHz B) 50 Hz up to 20 kHz

   C) 100 Hz up to 200 kHz D) 1500 Hz up to 2000 kHz

6. Very fine fibre structures in nonwovens provide a ---------- level of absorption of sound transmitted by air with a low weight and therefore a highly efficient absorber system, which can be used as mats or shaped parts.

   A) Very Low B) Low C) Medium D) High

7. Fibers produced by melt blowing are very fine, having typical diameters of ----------

   A) 8μm B) 3 μm C) 12 μm D) 24 μm

8. Meltdown process Air temperatures range from--------- with sonic velocity flow rates.

   A) 260 to 480$^{0\circ}$C B) 160 to 260$^{0\circ}$C C) 60 to 150$^{0\circ}$C D) 490 to 540$^{0\circ}$C

9. Gel spinning begins with a ---------- polymer solution prepared by dissolving a solid polymer, such as high density polyethylene, with a suitablesolvent, such as pentane, trichlorofluoromethane, or methylene chloride

A) 10–15% B) 16–20% C) 21–25% D) 25–30%

10. In Radiation drying, the Infrared radiators are used in most cases. The Wavelengths here are over 0.7 μm. The radiation temperatures are in the range ----------.

A) 1900–2000^{0}C B) 100–120^{0}C C) 500–1800^{0}C D) 150-300 ^{0}C

PART B (10 x 2 = 20 Marks)

11. What is typical curing condition employed for chemical bonding?
12. What is flash spinning?
13. List the parameters influence the splitting effect?
14. What is melting blown?
15. What are the nonwoven filtration requirements?
16. What is electrostatic spun bonding?
17. What is the speed of Needle in needle punching machine?
18. Classify the liquid filtration nonwoven.
19. What are finishing processes for filter nonwoven?
20. What are all the functions of nonwoven interlining?

PART C (5 x 14 = 70 marks)

21. a) Discuss the Nonwoven properties and applications, including environmental considerations.

(OR)

b) Discuss the various manufacturing methods of process of non wovens.

22. a) Describe the principle of Parallel-laid webs and Cross-laid webs, and their importance.

(OR)

b) What is the purpose of Web drafting? Explain.

23. a).Explain the Process stages of the manufacture of spunlaid nonwovens.

(OR)

b) Discuss the processes to make fine-fibre spunbonded nonwovens.

24. a) Explain the different mechanical finishing of Non-woven.

(OR)

b) Describe the Disposable and semi-disposable wiping cloths

25. a) Discuss the important parameters for characterization of nonwoven.

(OR)

b) Describe the effect of web Formation on nonwoven properties?

****