The Open University of Sri Lanka
Faculty of Engineering Technology
Department of Textile and Apparel Technology

Study Programme	: Bachelor of Technology Honours in Engineering Bachelor of Industrial Studies Honours
Name of the Examination	: Final Examination
Course Code and Title	**: TTX6264/ TAX6564 Nonwoven Textiles**
Academic Year	: 2019/20
Date	: 30th September 2020
Time	: 1330-1630hrs
Duration	: **3 hours**

General Instructions

1. Read all instructions carefully before answering the questions.
2. Write down your Index Number in all the pages of answer scripts.
3. This question paper consists of **Seven (07)** questions in **three (03)** pages.
4. Answer **five (05)** questions. Do not answer more than five (05) questions. Each question carries 20 marks.
5. Answers for each question should commence on a new page. If a question has many parts, all the parts should be answered in the chronological order under the same question.
6. Write down the answered question numbers on the space provided in the cover page of the answer book.
7. Answers should be in clear handwriting.
8. Do not use red colour pens to write the answers.

(Q1) (a) What are nonwovens? Describe in your own words. (03 marks)

(b) Write a comprehensive note on the use of nonwovens as "Interlinings" in the garment manufacturing process. (06 marks)

(c) Discuss the possible applications of nonwovens in the automobile manufacturing industry. (06 marks)

(d) Describe the use of nonwovens for the sound insulation. (05 marks)

(Q2) (a) Discuss the effect of the properties of the following on the properties of the nonwoven filter materials. (06 marks)

i. Fibres and bonding agents

ii. Nonwovens

(b) Briefly discuss the applications of nonwovens in building construction industry. (04 marks)

(c) Write a short note on the use of nonwoven products in packaging. (04 marks)

(d) Discuss the advantages of using nonwovens over the traditional textiles in the production of sanitary pads. (06 marks)

(Q3) (a) Briefly discuss the principle of aerodynamic web formation used in the nonwoven manufacturing process. (08 marks)

(b) With the help of a suitable schematic diagram, discuss different stages of wet laid technique used in nonwoven manufacturing. (12 marks)

(Q4) (a) Discuss the manufacturing process of melt blown nonwovens. (08 marks)

(b) With a help of a suitable diagram, briefly explain how electro spinning technique can be used to produce nano fibre nonwovens. (06 marks)

(c) Briefly explain the needle punching process used in nonwoven manufacture. (06 marks)

(Q5) Discuss the followings in relation to nonwoven manufacture.

i. "Malivlies" stitch bonding system. (07 marks)

ii. Kunit manufacturing technology. (07 marks)

iii.Spunlaced manufacturing technology. (06 marks)

(Q6) (a) Write a comprehensive note on the fibre parameters, which are important to produce good quality nonwovens. (08 marks)

(b) Briefly explain the use of following fibre types in nonwoven manufacturing.

i. Cotton (04 marks)

ii. Wool (04 marks)

iii. Polyester (04 marks)

(Q7) (a) Briefly discuss the manufacturing processes of Super Absorbent Polymers (SAPs). (08 marks)

(b) Describe only six (06) types of chemical finishes, which are widely used to produce nonwovens with specific properties. (12 marks)