Seat No.:	Enrolment No.

Subject Name: Advance Topics in Textile Manufacturing

Subject Code: 742501

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER-IV • EXAMINATION- SUMMER • 2014

Date: 04-06-2014

Total Marks: 70 Time: 02:30 pm - 05:00 pm Instructions: 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. 0.1 With reference to developments in new fibres, define following terms: 14 General purpose fibres (ii) High performance fibres (ii) High function fibres (iv) High Kansei fibres What are various applications of high tech fibres? Give typical examples of Super Fibres. Q.2 (a) What is sensorial comfort? Discuss in detail various factors contributing sensorial 07 comfort. (b) Critically analyse fiber and yarn attributes during the process of selecting them for 07 different fabric varieties. OR (b) With reference to artificial fibres by biomimetics, discuss simultaneous 07 polymerization and spinning. (a) With reference to thermophysiological wear comfort, discuss insulation and moisture 07 Q.3vapour permeability briefly. **(b)** Taking example of suiting fabric, define product and its various attributes. 07 **Q.3** (a) Why plasmas are acknowledged as very effective surface engineering tool? Which **08** are different types of plasmas? Discuss any one briefly. What are effects of plasma on fibres and polymers? Compare plasma treatment with 06 traditional textile processing. OR Define following terms: 07 0.4 (a) (i) **Smart Textiles** (ii) SFIT (iii) Wearable Technologies Interactive Textiles (iv) Which are the research focus areas for power sources for wearable technologies? **(b)** Write in short on following: 07 Reflective Technology (i) (ii) õHydroweaveö (iv) õSmartSkinö (iii) õSecurus ø (v) õ3XDryö What are the characteristics of major warfare threats? Write in short on role of 07 textiles in personal protection and safety against chemical warfare. **(b)** Write a short note on nanoscale finishing of textiles via plasma treatment. 07 **O.5** (a) With few examples discuss application of nanotechnology in medical and healthcare 07 textiles. **(b)** Write a shortnote on application of nanotechnology for high performance textiles. 07 Explain working principle of phase change materials. Enlist different types of PCMs. Q.5 (a) 07 Write on different areas of research in sensors and actuators, signal transmission and 07 integrated processes. Define the smart textiles and its applications.

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