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GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER-IV • EXAMINATION - SUMMER 2013

Subject Code: 742501 Date: 14-05-2013 **Subject Name: Advance Topics in Textile Manufacturing** Time: 10.30 am - 01.00 pm **Total Marks: 70 Instructions:** 1. Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. **Q.1** Write briefly on application of new fibers in advanced textile composites. 07 (a) Write a short note on new generation microfilaments and their applications. **07 (b) Q.2** Write on mathematical relationships between fiber to yarn and yarn to fabric (a) **07** parameters. Also write on its role on detailing the product design process. Write briefly on role of fiber, yarn and fabric parameters on designing process **(b)** 07 with reference to tactile attributes. OR Discuss in detail heat balance and heat loss with reference to thermal **(b)** 07 conductivity of textile materials. Write in detail on diffusion process with reference to water vapour transmission **Q.3** (a) 07 through textiles. Which factors contribute to sensorial comfort? 07 **(b)** What are the most common forms of plasma application in to textile? Write in **Q.3** detail on any one type. OR What are the technologies available for the production of nano textiles? Write in **Q.4** detail on any three nano enabled functionalities of textile. What are the characteristics of major warfare threats? Write on role of textiles in **Q.4** personal protection and safety against nuclear, biological and chemical warfare. **Q.5** Write on different areas of research in sensors and actuators, signal transmission 07 (a) and integrated processes. Define the smart textiles and its applications. Write in short on working principle of Phase Change Materials. **07 (b)** OR Write short note on following: Q.5 14 Flash Dried Fabrics (i) (ii) Wearable technology Textile integrated Global positioning system (iii) (iv) Tissue Engineering
