Seat No.:	Enrolment No

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

ME - SEMESTER-IV • EXAMINATION - SUMMER 2015 **Subject Code: 742501** Date: 01/05/2015 Subject Name: Advance Topics in Textile Manufacturing Time: 2:30 pm to 5:00 pm **Total Marks: 70 Instructions:** 1. Attempt all questions. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. **Q.1** With reference to artificial fibres by biomimetics, discuss simultaneous 07 (a) polymerization and spinning. Write a short note on new generation microfilaments and their applications. **07** (b) **Q.2** (a) Define following terms: 07 **Smart Textiles** (i) (ii) SFIT (iii) Wearable Technologies (iv) Interactive Textiles Which are the research focus areas for power sources for wearable technologies? Write briefly on role of fiber, yarn and fabric parameters on designing process 07 with reference to tactile attributes. OR Discuss in detail heat balance and heat loss with reference to thermal 07 conductivity of textile materials. **Q.3** Write in detail on diffusion process with reference to water vapour transmission 07 (a) through textiles. Which factors contribute to sensorial comfort? **07** (b) OR What are the most common forms of plasma application in to textile? Write in 14 Q.3 detail on any one type. OR **Q.4** What are the technologies available for the production of nano textiles? Write 14 in detail on any three nano enabled functionalities of textile. **Q.4** What are the characteristics of major warfare threats? Write on role of textiles 14 in personal protection and safety against nuclear, biological and chemical warfare. Write on different areas of research in sensors and actuators, signal **07** Q.5 transmission and integrated processes. Define the smart textiles and its Write in short on working principle of Phase Change Materials. **07** OR **Q.5** Write short note on following: 14 Flash Dried Fabrics (i) (ii) Wearable technology

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Textile integrated Global positioning system

Tissue Engineering

(iii)

(iv)