

Register Number.....

**M.E., DEGREE EXAMINATIONS: NOV/DEC 2012**

Third Semester

**APPAREL TECHNOLOGY AND MANAGEMENT**

FTY606: Nano Textiles and High Performance Clothing

**Time: Three Hours**

**Maximum Marks: 100**

**Answer All Questions:-**

**PART A (10 x 2 = 20 Marks)**

1. State the advantages of nano fibre?
2. What do you mean by “Phase separation”?
3. Enlist the various techniques involved in microencapsulation process.
4. Mention the mechanism of self cleaning process by TiO<sub>2</sub>.
5. Mention the significance of liquid insulated garment.
6. State the uses of ceramic coated health care apparels.
7. Enumerate the possible systemisation of wearable computers.
8. Differentiate between sensors and actuators.
9. What are Nano-Dry products? State their applications.
10. Outline the importance of nanotechnology in medical textile.

**PART B (5 x 16 =80 Marks)**

11. a) Explain in detail the electro spinning process of nano fibre production in detail with their merits and demerits.

**(OR)**

- b) (i) Classify the various nano fibre production techniques with their limitations. (6)
- (ii) State and explain the various methods of nano fibre yarn production with neat sketch. (10)

12. a) State and explain the mechanism of surface modification process using the plasma Treatment.

**(OR)**

- b) What do you mean by Phase change material? State the application of PCM in thermo regulation of clothing to improve their comfort properties.

13. a) Discuss the application of nano technology in sports wear development.

**(OR)**

b) Write short notes on :

- i. Energy expenditure wear
- ii. Anti cellulite panty hose
- iii. Temperature controlled garment
- iv. Smart trousers

14. a) Discuss in detail the weaving process and display matrix design of Optical Fibre Flexible Display (OFFD) with their applications.

**(OR)**

b) Elucidate the electrical characterisation of textile network for various wearable electronics applications.

15. a) Explain the following textile products for their characteristic and application

(i) Silicon –di-oxide coated Nano care product (8)

(ii) Nano-Text Neutralizer fabric (8)

**(OR)**

b) Discuss the various functional application of nano fibre and nano textile in the medical textile and apparels.

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