

**M.TECH DEGREE EXAMINATIONS: APRIL 2010**

Second Semester

**TEXTILE TECHNOLOGY**

P07TXE05: Biotech and Nanotech Textiles

**Time: Three Hours**

**Maximum Marks: 100**

**Answer All Questions:-**

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

1. How enzymes differ from chemical catalysts?
2. What do you mean by thermodynamics and kinetics of enzymes?
3. Write any four enzymes used in textile wet processing.
4. What is the role of pectinase enzyme?
5. What is 'process intensification' in enzyme treatment?
6. Write various types of textile effluent.
7. Define 'Biosorption'.
8. Write the characteristics of nanoparticles.
9. Define 'polymeric nano fibres'.
10. How will you assess the nanoparticle size?

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

11. a) (i) Discuss detail on classification and nomenclature of enzymes. (8)  
(ii) Explain on substrate and their structure of enzymatic activities in dyeing process. (8)  
(OR)  
b) (i) Explain the various factors influencing thermodynamics and kinetics of enzymes. (8)  
(ii) Write the properties and structures of enzymes with suitable examples. (8)
12. a) (i) With suitable examples explain the function of textile processing enzymes. (10)  
(ii) Write on enhancement of mass transfer in textile materials. (6)  
(OR)  
b) (i) Discuss detail on major enzymatic applications over traditional wet processing. (10)  
(ii) How will you assess enzyme activity? (6)
13. a) (i) Discuss detail on stabilization of enzyme activity. (8)  
(ii) Write on function of cellulase enzyme for denim fading. (8)

**(OR)**

- b) (i) Describe the various methods of water treatment for incoming water. (8)  
(ii) Write note on health and safety issues of enzymatic process. (8)
14. a) (i) Discuss detail on decolouration of effluent water by biotechnological methods. (10)  
(ii) Write note on functions and kinetics of enzymes used in effluent treatment. (6)

**(OR)**

- b) (i) Discuss the preparation and formation of nano particles for textile finishing with suitable example. (10)  
(ii) Write note on organisation of nanoclusters on polymer surfaces. (6)
15. a) Discuss detail on nanostructure formation and polymeric material selection for nano fibre production.

**(OR)**

- b) Discuss detail on application of nanotechnology in different areas of textiles.

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