Science and Applications of Nanotechnology in Textiles

4th May 2023 Major Exam (11.20 AM to 1.00 PM) Part B 30 marks

Que 1. Give two examples each and explain their structure and functions (4)

a) Natural bionanocomposites
b) Natural nanocoating

Que 2. (4X2=8)

a) What are the challenges in processing of polymer clay nanocomposites ? Name two strategies to overcome this problem in case of PP/ Nanoclay.
b) Name two characterisation techniques which can be used to study the dispersion of clay and structure of nanocomposites. Give example and explain.

Que 3. If you have to deposit superhydrophobic coating on cotton using LbL technique. How would you select the materials? Discuss the process and parameters which control the thickness of nanocoating. (5)

Que 4. What is the effect of plasma treatment on textile fabrics? What is the *difference when you introduce* non polymerizable and polymerizable gases in *the plasma chamber during* the treatment. (4)

Que 5. Write a short note on the topic of your assignment. (3)

Que 6. Draw the diagram of Electrospinning process and explain the principle.(2+4)

How do the following parameters affect the nanofibers produced ?

a) Voltage Applied
b) Polymer Concentration
c) Distance between capillary and collector
d) Nature of solvent used