Ministry of Higher Education
The Higher Institute of Engineering
and Technology in New Damietta
Course title: Synthetic Fibers
Course code: CHE 517
Semester First Semester

Department: Chemical Engineering
Level: Five
Time allowed: 60 min
Date:13-11-2017 Day: Monday
Full Mark: 20
No. of exam pages:1

Question 1 (5 marks, 0.5 mark for each)

Give the name(s) of only ten of the fiber(s), which confirm with the following

1. Five natural fibers composed mainly from cellulose.
2. Four artificial fibers produced from cellulose.
3. Natural fiber, which chains stabilize by four types of bonds.
4. The natural fiber which give +ve N **only** in element test.
5. The artificial fiber, which can be prepared by three different methods.
6. Fiber, which is used in manufacture of canvas.
7. The fiber, which is used in prestige items.
8. Fiber, which is produced from flax.
9. Fiber used for production burlap.
10. Fiber used in industrial applications
11. Fiber produced from some proteins
12. The fiber, which melt on burning.

Question 2 (2.5 marks, 0.5 mark for each)

Give the name of the process of the following

1. Process make the fiber have more ability of dyestuff
2. Conversion of cellulose into cellulose triacetate
3. Removal of undesirable material from fiber
4. Conversion of silk into more heavy and opaque fiber
5. Processes for making rayon fiber

Question 3 (7.5 marks, 2.5 mark for each)

1. ***Diagram*** Simplified flow chart of ginning systems.
2. ***Mention*** the advantages and disadvantages of synthetic fiber compared with natural fibers
3. ***Explain*** how synthetic fibers and fabrics are made

Question 4 (5 marks)

If two kilometers of fiber weighs 11.2 gram. Determine the value of measurements the fibers in the following units **Denier, Worsted count, cotton count, woolen and yield**

[1 lb = 453.592 g, 1 yard = 0.9144 m, 1 cotton hank = 770 m and 1 hank wool = 1600 yard]

With my best wishes

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