

End Semester Examinations - 2015-16 Even Semester - May 2016

14NT2006 Nanocomposites

Set A

Time : 3 hrs
Total Marks: 100

1.

(4+6+10 = 20)

- a. What is a Nanocomposite?
- a. Outline the classification of Nanocomposites?
- a. Taking a specific example, outline the various steps adopted in the sol-gel process?

OR

2.

(10+10 = 20)

- a. Discuss the special physical and chemical properties of Nanocomposites?
- a. Explain the process of electro-spinning with a neat diagram?

3.

- a. Write a short note on

(4X312)

- i. Yield
- ii. Fracture
- iii. Viscoelasticity

- a. What are 'hybrid materials'? Give their classification and advantages? **(8)**

OR

4.

- a. Write briefly on the following

(7+7 = 14)

- i. Gas barrier property of Nanocomposites
- ii. Nanocomposites as food packaging materials

- a. What are biodegradable materials? Give examples?

(6)

5.

(10+10 = 20)

- a. What are biodegradable protein Nanocomposites? Give examples?
- a. Write a note on Nanocomposites used for flammability reduction?

OR

6.

- a. Outline the principle of AAS?

(6)

- a. What are the applications and limitations of IR spectroscopy?

(8+6)

7. a. Explain the principle of DTA? (6)

a. What are the applications and drawbacks of SEM analysis? (8+6)

OR

8. (20)

a. Discuss the principle, applications and limitations of AFM?

9. (10+10 = 20)

Highlight the principle, application and drawbacks of XRD and TEM analysis.

Wishing you All the Best
