

6/15

sub:-Technology Stream
Advanced Material

CHEM. / V / CBGS / AM
QP Code : 5162

590 490

(3 Hours)

[Total Marks : 80

34

- N.B. :**
1. Question no. 1 is compulsory.
 2. Attempt any three questions out of remaining five questions.
 3. Figures to the right indicate marks.
 4. Illustrate answers with sketches wherever required.

1. Write short notes.
 - a) Write applications of carbon nanotubes. 20
 - b) Explain crystal structure of ceramic materials.
 - c) Explain biomedical applications of polymers.
 - d) Explain various types of titanium alloys.
2.
 - a) What do you mean by stainless steel? Explain various types of stainless steel with their characteristics. 10
 - b) Explain different causes of failure in stainless steel. 10
3.
 - a) What is high temperature polymer? Explain several ways by which heat stability of polymer can be increased. 10
 - b) Write a note on processing of ceramics. 10
4.
 - a) What are composites? Classify composite material. 10
 - b) What is closed molding process? Explain pultrusion and pulforming process for processing of fiber reinforced plastic composites. 10
5.
 - a) List various methods of preparation for metal matrix composites and explain any one process in details. 10
 - b) State various processes for fabrication of ceramic matrix composites and explain any one process in details. 10
6.
 - a) Explain chemical vapor deposition method for synthesis of carbon nanotubes. 10
 - b) Explain various types of thermal spraying methods used for thin film coating. 10