CBCS SCHEME

USN | | | | | | | | | | |

15NT71

Seventh Semester B.E. Degree Examination, Dec.2019/Jan.2020
Nano Composites and their Applications

Time: 3 hrs. Max. Marks: 80

Note: ***Answer any FIVE full questions, choosing ONE full question from each module.***

Module-1

1 a. Write a note on particle, and fibre reinforced composites. **(08 Marks)**
b. Explain the Carbon fibre production technique. **(08 Marks)**

OR

2 a. Write a short note on polymer matrix composites. **(06 Marks)**
b. Explain about composites, composition of composites and classification based on its origin. **(10 Marks)**

Module-2

3 a. Explain filament winding process. **(08 Marks)**
b. Discuss about polymer resins and its classifications. **(08 Marks)**

OR

4 a. Write a note on resin transfer moulding, and pultrusion. **(08 Marks)**
b. Write a short note on hand layup and sprayup processing of polymer matrix composites. **(08 Marks)**

Module-3

5 a. Briefly about MMCs, its characteristics and types. **(08 Marks)**
b. Write a short note on interface and interface properties. **(08 Marks)**

OR

6 a. Explain about powder metallurgy and diffusion bounding methods of processing of MMCs. **(08 Marks)**
b. Write a note on stir casting and squeeze casting infiltration techniques. **(08 Marks)**

Module-4

7 a. Write a note on Carbon - Carbon composites. **(08 Marks)**
b. Explain about oxide ceramic matrix composites. **(08 Marks)**

OR

8 a. Explain about engineering ceramics and discuss about the need for ceramic matrix composites. **(08 Marks)**
b. Brief about CMCs and mention various types of MMCs. **(08 Marks)**

Module-5

9 a. Write a note on laminates and stacking sequence notations. **(08 Marks)**
b. Brief about compression testing of composite material. **(08 Marks)**

OR

10 a. Discuss about factors affecting the mechanical performance of composites. **(10 Marks)**
b. Explain about mechanically fastened joints. Mention its advantages and limitations. **(06 Marks)**

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