

CBCS SCHEME

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17NT743

Seventh Semester B.E. Degree Examination, Jan./Feb. 2021 Engineering Materials and Surface Coatings

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Define adhesive. Explain the different terminologies on adhesives. (10 Marks)
b. Explain the different criterias for selection of adhesives. (06 Marks)
c. Cite any 4 advantages of adhesives. (04 Marks)

OR

- 2 a. Explain any 3 theories explaining adhesive mechanism. (09 Marks)
b. Explain the factors affecting adhesive action. (06 Marks)
c. Explain the functions of adhesives. (05 Marks)

Module-2

- 3 a. Write a note on :
i) Animal based glue
ii) Plant based glue
iii) Solvent based glue
iv) Synthetic glue. (16 Marks)
b. Explain the properties and applications of epoxies. (04 Marks)

OR

- 4 a. Explain in brief about contact and hot melt adhesives. (10 Marks)
b. Brief on polyurethane and water based adhesives. (10 Marks)

Module-3

- 5 a. What are plasticizers and pigments? Explain in detail. (10 Marks)
b. Brief on :
i) Impact modifiers
ii) PVC stabilizers. (10 Marks)

OR

- 6 Write a short note on :
a. UV – absorbers
b. Slip agents
c. Flame retardants
d. Mould release agents. (20 Marks)

Module-4

- 7 a. Explain the different components of paints. (10 Marks)
b. Write a note on :
i) Primer
ii) Emulsion paints. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

OR

- 8 a. Explain about antigrafitic coatings and anti-climb paints. (08 Marks)
b. Explain the properties and types of lubricants. (06 Marks)
c. Write a note on shellac and antifouling paints. (06 Marks)

Module-5

- 9 a. Explain the role of nano – conductive adhesives used in nano – electronics. (06 Marks)
b. Discuss about CNT based transparent conductive film in detail. (08 Marks)
c. Write a short note on CNT based nano composites. (06 Marks)

OR

- 10 a. What are nano – isotropic conductive adhesives? Explain the importance of nano materials in coatings. (10 Marks)
b. Brief about potential environmental benefits of nano materials in coatings. (06 Marks)
c. Write a short note on nano – lubricant approach. (04 Marks)
