

Model Question Paper
VIII Sem. B. Tech. Polymer Engineering Degree Examination
Mahatma Gandhi University
PO 010 804 L 01: Adhesive Technology

Time: 3Hours
100

Maximum Marks:

Part A

(Answer *all* questions)
(Each question carries **3** marks)

1. Explain the thermodynamic concept of wettability in adhesives
2. With an example define primer
3. Define hot melt adhesives. What are the advantages and limitations?
4. Define structural adhesives with examples
5. Mention the different types of adhesive joints

(3x5 =15)

Part B

(Answer *all* questions)
(Each question carries **5** marks)

6. Differentiate between adhesive failure and cohesive failure of the adhesive
7. Differentiate between high energy and low energy surfaces
8. Define pressure sensitive adhesives
9. Briefly mention on the use of adhesives in electrical industry
10. Mention the general principles followed in the design of adhesive bonds for optimum bond strength

(5x5 =25)

Part C

(Answer either *a* **OR** *b*)
(Each question carries **12** marks)

11(a) What are the advantages and disadvantages of adhesive bonding over other conventional

methods of joining

OR

(b) Write notes on:

- (i) Work of adhesion
- (ii) Rheology of adhesion
- (iii) Effect of T_g on adhesion

12(a) Discuss the various surface preparation techniques prior to adhesive bonding

OR

- (b) Discuss on the various theories of adhesion

13 (a) Write notes on:

- (i) classification of adhesives based on the method of cure
- (ii) Natural adhesives

OR

(b) Write notes on:

- (i) cyanoacrylate adhesive
- (ii) anaerobic adhesives
- (iii) polyvinyl acetate adhesives

14(a) (i) Formulate an epoxy resin adhesive with the function of each ingredient

- (ii) use of adhesives in automobile industry

OR

- (b) What are structural adhesives? Discuss the preparation, properties and applications of phenolic resin adhesives

15(a) (i) What are the standard test methods for determining the strength of adhesive joints?

- (ii) what precautions should be taken for maximum effectiveness of adhesive bonds

(8+4)

OR

- (b) Compare the different joint geometries in adhesive bonds

(12x5 =60)