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Code No. : 14109 EM

**VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD**  
**B.E. (CBCS) IV-Semester Main Examinations, May-2018**

**Engineering Materials**

(Open Elective-III)

Time: 3 hours

Max. Marks: 70

*Note: Answer ALL questions in Part-A and any FIVE from Part-B*

**Part-A (10 × 2 = 20 Marks)**

1. Classify composite materials.
2. Enlist the advantages of composites over conventional materials.
3. Define cloud point and pour point.
4. How do you select the lubricants for gears and refrigeration systems?
5. What are stone wares? How are they prepared?
6. Ceramics have high chemical stability. Substantiate.
7. Mention the basic raw materials used in the manufacture of ceramics and give examples.
8. Explain extrusion.
9. Define iodine value and give its significance.
10. What is under glaze and over glaze decoration?

**Part-B (5 × 10 = 50 Marks)**

11. a) Illustrate pultrusion and give the merits and applications of the method. [6]  
b) Discuss about the aramid fiber reinforced composites and mention their applications. [4]
12. a) Demonstrate extreme pressure lubrication. [4]  
b) With a neatly labeled diagram, explain the determination of flash point and fire point of a lubricant. [6]
13. a) What are pottery products? How are they classified? Give suitable examples. [5]  
b) Discuss about the permeable and impermeable wares. [5]
14. a) Explain the importance of flux in the manufacturing of ceramics. [5]  
b) In the manufacturing of ceramics, how the body is prepared using clay in plastic state and dry state? [5]
15. a) Describe the layered composites and give their applications. [5]  
b) Discuss about the viscosity and viscosity index of lubricants. [5]
16. a) Outline the various methods used for the application of colors to pottery. [5]  
b) Define ceramics and explain their optical, mechanical, electrical and magnetic properties. [5]
17. Answer any *two* of the following:  
a) Illustrate boundary film lubrication. [5]  
b) Explain glazing of ceramics. [5]  
c) Sketch a diagram and explain RTM method for the manufacture of composites and give the advantages of this method. [5]

