

**B.TECH. SEM -I (CHEMICAL) 2014 COURSE (CBCS) :  
SUMMER - 2018**

**SUBJECT: CHEMICAL ENGINEERING MATERIALS**

Day : **Friday**  
Date : **25/05/2018**

**S-2018-2209**

Time: **10.00 AM TO 01.00 PM**  
Max. Marks: 60.

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**N.B.:**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the **RIGHT** indicate full marks.
  - 3) Neat and labeled diagrams must be drawn **WHEREVER** necessary.
  - 4) Use of non-programmable pocket calculator is **ALLOWED**.
  - 5) Assume suitable data, if necessary.
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- Q.1** a) What is classification of material? How materials are important in engineering applications? (05)  
b) Which are important chemical properties and how they affect material selection for any particular application? (05)

**OR**

Which are important mechanical properties affecting material selection for any particular application? Explain their effect.

- Q.2** a) What are the types of stainless steel? How its properties affect its applicability? (05)  
b) What are the properties of lead? Explain its property and applicability? (05)
- OR**
- a) What are important properties of aluminum? Explain their effect on applicability. (05)  
b) What are iron and iron-carbide properties? Explain its importance. (05)

- Q.3** a) What are important properties must be considered while selecting polymer for equipment living? (05)  
b) How properties of Nylon66 affect its applicability? (05)
- OR**
- a) What are adhesives? Which are important properties of adhesives? How they are used? (05)  
b) How properties of Tetlon affect its applicability? (05)

- Q.4** What are important properties of glasses? How structure and processing affect glass properties and their applications? (10)
- OR**
- a) What is pre-stressed concrete? Explain its effect on properties and importance. (05)  
b) How refractories are formed? Explain their properties and applications. (05)

- Q.5** a) What is stress? How it leads to material failure and applicability? (05)  
b) What is biochemical corrosion? How it takes place? (05)
- OR**
- a) What are the methods of corrosion attack? Explain them in details. (05)  
b) What is creep? How it leads to material failure and applicability? (05)

- Q.6** What is importance of glass and ceramic living? What is the method of application of glass and ceramic living? (10)
- OR**
- a) How polymeric lining is important in material failure applications? (05)  
b) How alloy formation affect material properties and improve its applicability? (05)