

**B.TECH. SEM -V (CHEMICAL 2014 COURSE (CBCS) :**  
**SUMMER - 2018**  
**SUBJECT: ELECTIVE-I : ADVANCED MATERIAL SCIENCE**

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

**S-2018-2323**

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) Use of non-programmable pocket calculators is **ALLOWED**.
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**Q.1** Explain Reinforcing mechanism. How it helps in property enhancement? (10)

**OR**

Explain filament winding in detail. (10)

**Q.2** Explain fabrication methods of metal composite? Explain the methods of formation. (10)

**OR**

Why to reinforce ceramics composite? (10)

**Q.3** Explain SEM and TEM in detail. (10)

**OR**

Explain carbon composite with its properties, advantages and disadvantages. (10)

**Q.4** What is isotopes? What is their importance in nuclear materials? (10)

**OR**

What are the types of waste in nuclear materials? How they are generated? Explain their properties and hazards. (10)

**Q.5** Explain Novel Biomaterials and the importance of biomaterials in chemical engineering. (10)

**OR**

What is Tissue Engineering? Explain its need and applications. (10)

**Q.6** What are different properties and applications of Nanomaterials? (10)

**OR**

Differentiate between Nanomaterials and Bulk materials? (10)

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