

**SUBJECT CODE NO: H-1770**  
**FACULTY OF ENGINEERING AND TECHNOLOGY**  
**M.E. (Mechanical)**  
**Modern Engg. Materials**  
**(REVISED)**

[Time: Three Hours]

[Max.Marks:80]

Please check whether you have got the right question paper.

- N.B
- i) Solve any three questions from each section.
  - ii) Assume suitable data wherever required.
  - iii) Draw neat diagram wherever required.
  - iv) Figure to right indicates full marks.

**Section A**

- |     |  |    |
|-----|--|----|
| Q.1 | a) For many of the applications stainless steel is used explain why? | 07 |
|     | b) What is alloy cast iron? Explain the same.                        | 06 |
| Q.2 | a) What is Brazing brass? Explain.                                   | 07 |
|     | b) Describe the effect of increasing zinc in copper.                 | 06 |
| Q.3 | What is ceramic matrix composite material? Explain in detail.        | 13 |
| Q.4 | Write short note <u>on any two</u> .                                 | 14 |
|     | i) Polymer matrix material   |    |
|     | ii) Aluminium bronze   |    |
|     | iii) Tool steel  |    |

**Section B**

- |     |  |    |
|-----|--|----|
| Q.5 | a) How laminated composites are analysed? Explain.                           | 07 |
|     | b) State and explain the possible configuration of fibers in composites.     | 06 |
| Q.6 | a) How polymers are classified? State their applications.                    | 07 |
|     | b) Where elastomers are used? Explain.                                       | 06 |
| Q.7 | a) What are ceramic materials how they are different from metals.            | 07 |
|     | b) Justify the use of refractory materials in high temperature applications. | 06 |
| Q.8 | Write short note <u>on any two</u> .   | 14 |
|     | i) Critical volume fraction in composite                                     |    |
|     | ii) Stress strain variation in laminates                                     |    |
|     | iii) Electronic ceramics   |    |