Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **18ME3062** | **Duration :** | **3hrs** |
| **Sub. Name :** | **COMPOSITE MATERIALS** | **Max. Marks :** | **100** |

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| **Q. No.** | **Sub Div.** | **Questions** | **Course Outcome** | **Marks** |
| **ANSWER ANY FIVE QUESTIONS (5 x 16 = 80 Marks)** | | | | |
| 1. | a. | Discuss any four Fiber and its Mechanical properties in detail. | CO1 | 10 |
| b. | State the principle of strengthening mechanism and explain in brief. | CO3 | 6 |
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| 2. | a. | Explain in detail the types of Matrix. | CO1 | 8 |
| b. | Explain in detail the various applications of composite materials in Engineering field. | CO1 | 8 |
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| 3. |  | How are the following strengths of a continuous fiber unidirectional composite material estimated?  i) longitudinal tensile strength  ii) longitudinal compressive strength due to fiber micro-buckling  iii) transverse tensile strength. | CO2 | 16 |
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| 4. |  | Define fatigue failure. Explain the low cycle fatigue and high cycle fatigue. How will a composite be tested for its fatigue strength? State the importance of the fatigue strength in composites. | CO3 | 16 |
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| 5. |  | Briefly describe any two Manufacturing methods of composite Materials. | CO4 | 16 |
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| 6. | a. | What are the types and characteristics of Metal matrix composites? | CO1 | 8 |
| b. | What are the advantages and limitations of Metal matrix composites? | CO1 | 8 |
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| 7. |  | Discuss in detail the Mechanical testing of laminated composites with neat sketch. | CO5 | 16 |
| **COMPULSORY QUESTION (1 x 20 = 20 Marks)** | | | | |
| 8. |  | Explain in detail any two non-destructive test for bolted joints with neat sketch. | CO6 | 20 |