Department of Metallurgical Engineering and Materials Science
MM 359 Metals Casting and Joining; Test-2

Date: 08/02/2022
Time: 10.45 am – 11.15 am   **Max. Marks: 10**

1. The excess energy of solid-liquid interface which is atomically smooth has a minimum at what fractional occupations ?   1 Mark

2. Draw schematically the TTT diagram for materials with α >> 2.0 and α << 2.0 and label clearly all.   2 Marks

3. Derive the constitutional supercooling criterion clearly explaining all assumptions and terms.   5 Marks

4. During the solidification of a alloy with complete solid solubility, composition variation can be tracked either with respect to temperature or time. Is this correct ? Explain your answer clearly.   2 Marks.

LATE SUBMISSIONS BEYOND 5 MINS WILL NOT BE ACCEPTED.
SHOW ALL STEPS CLEARLY.
ALL STATEMENTS AND ASSUMPTIONS SHOULD BE CLEARLY WRITTEN.
NO PARTIAL MARKS.