



- (b) (i) Explain Gibb's phase rule and Lever rule. (8)
- (ii) Explain the phenomenon of recrystallisation and grain growth. (8)
12. (a) What is meant by Brittle Fracture? Derive an expression for brittle fracture strength using Griffith's theory. (3 + 13)

Or

- (b) Distinguish between brittle fracture and ductile fracture. Explain the mechanism of creep deformation. (8 + 8)
13. (a) Derive an expression for electrical conductivity of a metal. Also explain the two types of super conductors. (8 + 8)

Or

- (b) What are soft and hard magnetic materials? Mention two examples for each along with applications. (8 + 8)
14. (a) What is Hall effect? Describe the experiment to determine the nature of charge carrier in a semiconductor using Hall effect. (3 + 13)

Or

- (b) Discuss the different types of dielectric breakdown along with their special features. (4 × 4 = 16)
15. (a) What is optical fiber? Discuss the step index fiber and graded index fiber. (2 + 7 + 7)

Or

- (b) Describe the construction and working of LED. What are the merits of LC display over LED display? (6 + 6 + 4)
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