

**C-3828**

**Sub. Code**

**82426**

**B.Voc. DEGREE EXAMINATION**

**FOUNDARY TECHNOLOGY**

**APRIL 2021 EXAMINATION**

**&**

**APRIL 2020 ARREAR EXAMINATION**

**Second Semester**

**PHYSICAL METALLURGY OF CASTING**

**(2019 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is meant by solidification?
2. List the inter metallic compounds.
3. What is meant by Homogenous nucleation?
4. List the uses of alloys.
5. What is meant by metallurgy?
6. Name some alloys.
7. Why Electron Microscope is used?
8. Write a note on casting.
9. Define the term segregation.
10. What is meant by Ingot structure?

**Part B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Discuss common binary equilibrium diagrams.  
Or  
(b) Write briefly about Intermediate phases and inter metallic compounds.
12. (a) Write a short note on Heterogeneous nucleation.  
Or  
(b) Discuss about Solidification of pure metal.
13. (a) Briefly discuss about ternary equilibrium diagram.  
Or  
(b) Discuss on strengthening of metals and alloys.
14. (a) Write about the Diffusional and diffusionless transformation.  
Or  
(b) Write a note on Micro and Macro examination.
15. (a) Discuss about the multiphase microstructures.  
Or  
(b) Highlight the importance of Metallurgical Microscope.

**Part C**

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b).

16. (a) Elaborate on the theories of alloying.  
Or  
(b) Explain in detail about Solid Solutions.

17. (a) Explain about Solidification of metals and alloys.

Or

(b) Elaborate on the process of solidification.

18. (a) Explain Micro, Macro porosity and residual stresses in casting.

Or

(b) Elaborate on the salient features of Electron Microscope.

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