

**M.Tech. IV Semester Degree Examination, Sept./Oct. - 2024****MINERAL PROCESSING****Cement Technology****(NEP)**

Time : 3 Hours

Maximum Marks : 70

Note : Answer **any five** of the following questions with Question **No.1** is **compulsory**, each question carries **equal** marks.

1. (a) What is cement and write the composition of cement. **4**
- (b) Explain the roles of ingredients used for making concrete. **6**
- (c) Write the difference between hydraulic and non-hydraulic binders. **4**
2. (a) How slag and sludge used as raw materials in cement ? **7**
- (b) Discuss the distribution of raw-materials used for cement making. **7**
3. (a) List-out the effects of Alumina modulus and Hydraulic modulus in cement making. **7**
- (b) Explain the steps involved in pre-blending raw material. **7**
4. (a) Write the role of additive in clinker formation. **7**
- (b) With a flowsheet, explain the manufacturing process of cement. **7**
5. (a) How does the hydration of tricalcium silicate (C_3S) contribute to early strength of cement ? **5**
- (b) Write the role of gypsum in cement hydration process. **5**
- (c) What are the clinker minerals in the context of cement production ? **4**
6. (a) Write the difference between limestone and chalk as a raw material for cement production. **5**
- (b) Describe the source of lime in cement production. **4**
- (c) Explain the Argillaceous raw materials used in cement production. **5**



- 7.** (a) Discuss the molar ratio of alkali used in cement production. **7**
(b) Explain the difference between the wet and dry methods of Cement manufacturing. **7**
- 8.** (a) Brief the rotary kiln for cement making. **6**
(b) Explain the basic composition of raw materials used in cement making. **4**
(c) Discuss how moduli values impacts on cement manufacturing. **4**

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