

10. Which of the following statements for Eminently hydraulic lime is **CORRECT**?
- It slakes in 1-2 hours
 - Its hydraulicity is moderate
 - It makes lime mortar similar to the ordinary cement mortar
 - Its setting time is about 1 week or so
11. Rapid Hardening Cement is obtained by higher content of _____.
- Gypsum
 - Tricalcium silicate
 - Pozzolana
 - Aluminum Sulphate
12. Which of the following statement is **TRUE**
- 10% more cement is used during Machine mixing
 - 10% more cement is used during Hand mixing
 - 5% more cement is used during Machine mixing
 - 5% more cement is used during Hand mixing
13. What is the purpose of the Attrition Test on Building Stone?
- to find out the rate of wear
 - to find out the toughness
 - to understand the presence of calcium carbonate
 - to test the presence of earthly matter
14. The Capacity of a material to absorb energy before rupture is called:
- Toughness
 - Hardness
 - Strength
 - Stiffness
15. The entrained air in concrete results in
- increased strength
 - decreased workability
 - decreased resistance to weathering
 - increased workability
16. The bogue compound during manufacturing of cement, C_3S is also known as:
- Alite
 - Belite
 - Celite
 - Felite
17. Initial setting time of OPC:
- 20 min
 - 40 min
 - 30 min
 - 60 min
18. What is separation of water on fresh concrete called?
- Bleeding
 - Curing
 - Segregation
 - Hydration
19. M15 grade of concrete is obtained by mixing cement, sand and aggregate with the ratio of
- 1:1:2
 - 1:1.5:3
 - 1:2:4
 - 1:1.5:2
20. Wedged shaped or trapezoidal bricks and glazed one stretcher is known as
- Daachi appa
 - Twa-appa
 - Chikan-appa
 - Maa-appa

KATHMANDU UNIVERSITY
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Year : I
Time : 2 hrs. 30 mins.

Course : ARCH 161
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F. M. : 40

SECTION "B"
[40 marks]

Attempt *ALL* questions. Assume the suitable data wherever necessary.

1. Assume that you are required to use stone in the external masonry of a building you designed. Explain the various characteristics of a good stone that you would consider and what type of stone would be best for you. What are the various lab tests performed on building stones? Explain any two of them. [3+3]
2. What is the necessity of a bond in brick masonry? Which test you are going to perform in the field for the purpose of obtaining the good quality of bricks, Explain with procedure. Explain the difference between English bonds and Flemish bond with sketches. [2+2+2]
3. Which manufacturing process of lime would be suitable if we need good quality of lime in moderate scale, and need not be continuous supply? Explain the different types with their respective diagrams. Explain Fat lime with its properties and uses. [4+2]
4. Which process of Cement Production is economical and Why? Explain the manufacturing process of Ordinary Portland Cement using the flow diagram. Explain Hydration and how it functions. [1+3+2]
5. Explain the various steps of concrete manufacturing. What are the different methods of curing of concrete? [4+2]
6. Based on the grain size distribution, how can sand be classified? Explain with their uses. What are the desirable properties of sand? Explain bulking of sand. [2+1.5+1.5]
7. Write short notes on: (*ANY TWO*) [2.5×2]
 - a. Portland Pozzolana Cement
 - b. Workability
 - c. Dressing of Stone

