##  BHARATI VIDYAPEETH INSTITUTE OF TECHNOLOGY

**Question Bank (I-Scheme)**

**Name of subject: Concrete Technology Unit Test: I**

**Subject code: 22305 Course: CE**

 **Semester: III**

**CHAPTER 1 (Overview of Building components)**

**(2 Marks)**

a. List four physical properties of OPC.

b. List four major components of cement with their percentage in ordinary Portland cement.

c. Define heat of hydration.

**(4 Marks)**

a. Explain the procedure to determine fineness by dry sieving method.State its IS requirement.

b. What is mean by Adulteration of cement .Explain with respect to properties of concrete .How Adulteration determined?

 **CHAPTER 2 (Aggregates)**

**(2 Marks)**

a. Define bulking of sand.

b. State four requirements good aggregates.

c. Classify aggregates with respect to shape & size.

d. Define Impact value ,Abrasion value,Crushing value & flakiness index.

**(4 Marks)**

1. Calculate fineness modulus of sample using following data.Total weight of sample 1kg.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| sieve | 4.75 | 2.36 | 1.18 | 600 | 300 | 150 | Pan |
| size | mm | mm | mm | micron | micron | micron | Micron |
| Weight retained (gm) | 100 | 150 | 300 | 200 | 120 | 90 | 40 |

b. What is mean by grading of aggregates? Explain well graded ,gap graded,poor graded aggregates.

c. Explain the procedure to determine silt content of sand sample.

d. Calculate the average chrushing value of aggregates using following data.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sr no | Description | Samples- A | B | C |
| 1 | Weight of oven dried sample. | 3119 | 3246 | 3184 |
| 2 | Weight of fraction passing 2.36 mm I.S.sieve | 575 | 581 | 598 |

e. A sand sample has finess modulus of 1.95. whether this sand can be used for concreting ? Explain the procedure to bring the finess modulus in required permissible limits. State its importance.

f. Explain procedure for determination of water absorption of coarse aggregates.

g. Explain four properties of fine aggregates.

**CHAPTER 3 (Concrete)**

**(2 Marks)**

a. State Duff Abraham’s water cement ratio law.

b. Define segregation & bleeding.

c. In sequence, write concreting operations.

1. **Marks)**

a. Suggest the degree of workability in terms of slump for the following:

 i. Pavements using paves.

 ii. Canal lining.

 iii.Heavily reinforced section.

 iv.In-situ piling.

b.State minimum grades of concrete for different conditions.

c. Explain in brief procedures for determination of compaction of concrete in laboratory.

d. Define impermeability of cement .Enlist factors affecting it.

e. What are the properties of hardened concrete & give effect of coarse aggregate on compressive strength of concrete.

f. Write significance of water cement ratio & factors affecting properties of concrete.

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