**ASSIGNMENT QUESTIONS (CE 204)**

**SIEVE ANALYSIS AND FINENESS MODULUS**

1. Define Fineness Modulus (FM). What is the significance of FM?
2. What is meant by Good Grading? Draw qualitative curves for different types of grading.
3. What is the practical use of controlling the grading of concrete aggregates?
4. How does the fineness modulus of aggregates affect the strength of concrete?
5. In what sizes of particles the aggregates are deficient or oversupplied? How might this be remedied in a practical way?

**DETERMINATION OF AGGREGATE IMPACT VALUE (AIV) AND AGGREGATE CRUSHING VALUE (ACV)**

1. What is Aggregate Impact Value?
2. Why Aggregate Impact Value of road stones is important?
3. What are the applications of Aggregate Impact Value?
4. Aggregate impact value material A is 15 and that of B is 20. Which one is better for surface course? Why?
5. What is Aggregate Crushing Value?
6. Why Aggregate Crushing Value of road stones is important?
7. What are the applications of Aggregate Crushing Value?

**DETERMINATION OF NORMAL CONSISTENCY OF CEMENT WITH VICAT APPARATUS**

1. Does this cement satisfy ASTM standards requirements for normal consistency?
2. Describe the factors affecting the normal consistency of cement.

**DETERMINATION OF INITIAL SETTING TIME AND FINAL SETTING TIME OF CEMENT WITH VICAT APPARATUS**

1. Does this cement Satisfy ASTM standard requirements for *Initial Setting Time*?
2. What is the significance of *Setting Time*?
3. Distinguish between *Hardening* and *Setting*.
4. What is *Quick Setting Cement*?
5. How does the *Fineness* affect the time of setting?
6. What is the function of a *Retarder*?
7. Describe the factors affecting the *Initial Setting Time* of cement**.**

**SPECIFIC GRAVITY AND ABSORPTION CAPACITY OF COARSE AND FINE AGGREGATE**

1. Discuss the influence of the fineness of the aggregate upon its bulking characteristics when damp.
2. Discuss the effect of damp aggregate upon the cement of the mix, the proportions of which were computed for saturated surface dry aggregates (a) if the materials are batched by weight and (b) if batched by stated bulk volume.
3. What difficulties arise in the use of aggregates which absorb water? How are they overcome (a) in the laboratory and (b) in the field?
4. What is the distinction between apparent and bulk specific gravity?
5. How would the determination of bulk specific gravity of the fine aggregate (surface-dry basis) be affected by the 500 gm sample being drier than the surface –dry condition? Explain. Assume that the aggregate becomes saturated during the test.
6. Would the apparent specific gravity be affected in the same manner as in question no.5? Explain.

**RESISTANCE TO ABRASION OF SMALL SIZE COARSE AGGREGATE BY USING LOS ANGELES MACHINE**

1. What is the significance of Abrasion of Aggregates?
2. Why Los Angeles Abrasion Test is most commonly accepted and used?
3. How is the abrasive charge selected for Los Angeles Abrasion Test? Write down the no. of spheres & weight of charges for different cases.
4. What is the significance of Los Angeles Abrasion Test?
5. What is the rotational speed & no. of total revolutions for this test?

**DIRECT COMPRESSIVE STRENGTH OF CEMENT MORTAR**

1. Compare your results with standard strength requirement of ordinary Portland cement as specified by ASTM. If you observed any deviation from the standard requirement, discuss different factors that might be responsible for this.
2. What is the range of temperature for curing water?
3. How the load is to be applied in the test?

**COMPRESSIVE STRENGTH OF CONCRETE CYLINDERS AND CUBES**

1. What is the effect of age of concrete upon the water-cement ratio and strength curve?
2. Discuss the effect of rate of loading upon the compressive strength.
3. Discuss the effect of capping upon the compressive strength.
4. Cube strength is greater than cylinder strength – why? Discuss.
5. What is the effect upon the compressive strength if L/D ratio is other than 2?