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Sub: Concrete Technology (22305) **Class: S.Y**

Assignment No. 1

1. Enlist four compounds with their effect on properties of cement.
2. Define Hydration of cement and Heat of hydration.
3. Define a) Normal consistency of cement
   b) Initial setting time
   c) Final setting time
4. State various types of cement and explain the following.
   a) Sulphate resisting cement
   b) Blast furnace slag cement
   c) White cement

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Assignment No. 2

1. State the requirements of good aggregates.

2. Explain need and importance of impact value and abrasion value for coarse aggregates.

3. Define Fineness Modulus of aggregate. What is the range of value for fine and coarse aggregate?

4. Following observations are taken during the Fineness Modulus test on aggregate. The initial weight of sample is 500gms. Calculate Fineness Modulus.

Sieve size in mm	4.75	2.36	1.18	600mics	300mics	150mics	75mics	Less than 75mics
Mass retained in gms.	16	76	104	84	128	82	4	6

5. Explain silt content test.

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Assignment No. 3

1. State the necessity of supervision for concreting operation.

2. State the various grades of concrete w.r.t different groups.

3. State any four factors affecting durability and impermeability of concrete.

4. Describe the procedure for determining workability of concrete using

   a) Slump cone test

   b) Compaction factor test

5. Define compressive strength of concrete. Write the procedure for determining the compressive strength of concrete cubes.

6. State maximum w/c ratio for four different grades of concrete as per IS 10262 – 1982.

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Assignment No. 4

1. Define mix design and enlist the methods of mix design of concrete.
2. State meaning of NDT. Enlist the methods of NDT stating suitability of each.
3. Explain in detail IS method of mix design with steps.
4. State how compressive strength is determined by using Rebound Hammer.
5. Explain in detail Ultrasonic Pulse Velocity test.

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Assignment No. 5

1. State advantages and disadvantages of volume batching.

2. Compare manual mixing with mechanical mixing of concrete.

3. State various types of Vibrators. And state four advantages of compaction by vibrators.

4. State requirements of good formwork and draw a neat sketch of formwork for RCC column footing.

5. States the modes of transportation of concrete.

6. Compare between tilting and non tilting types of mixers.

7. State necessity of water proofing. Enlist methods of water proofing.

8. Enlist types of joints provided. Also state their necessity. Mention any two materials used for filling concrete joints.

9. State the procedure for joining old and new concrete.

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Assignment No. 6

1. Define admixtures. State any four types of admixtures and their uses.
2. Explain in brief "Super plasticizers".
3. Define RMC and state advantages and limitations of RMC.
4. Describe the following and state application of each
   a) High performance concrete
   b) Light weight concrete
5. State the properties of air entraining admixtures and accelerating admixtures.
6. State the purpose of water reducing admixtures and enlist any two.
7. State precautions to be taken in i) Cold weather concreting ii) Hot weather concreting.
8. State four points of difference between reinforced concrete and fibre reinforced concrete.