

5. Write notes on the following. (20 M)

- a) Shrinkage of concrete Hot weather concreting
- c) Distress in concrete Curing of concrete

6. a) A nominal mix of grade M15 is to be adopted on site by using the table below. It is decided to use volume batching. Find out the volumetric proportions for the mix. Take bulk density of cement = 1445 kg/m³, that of sand = 1610 kg/m³ & that of coarse aggregates = 1610 kg/m³. Consider the volumes on dry basis. (05 M)

TABLE: PROPORTIONS FOR NOMINAL MIX CONCRETE

Concrete Grade	Cement (1 bag) (kg)	FA + CA (kg)	Proportion of FA to CA (By mass) FA: CA	Water Content (Litres)
M15	50	330		32

b) The following data represents the strength of concrete cubes of the same concrete grade, prepared & tested in the same condition. Find the Standard Deviation of the results. The results are arranged in the ascending order. Each result is an average of three cube test results taken from the same batch (05 M)

Sample No.	Cube Strength (MPa)	Sample No.	Cube Strength (MPa)	Sample No.	Cube Strength (MPa)
1	22.6	11	25.8	21	27.6
2	23.7	12	26.2	22	27.7
3	24.3	13	26.4	23	27.7
4	24.7	14	26.6	24	27.8
5	25.1	15	26.7	25	28
6	25.2	16	26.8	26	28.3
7	25.4	17	26.9	27	28.9
8	25.6	18	27	28	29.1
9	25.7	19	27.2	29	29.8
10	25.7	20	27.3	30	30

c) Explain Fibre Reinforced Concrete, in brief. (05 M)

d) Write a short note on mineral admixtures. (05 M)

END OF PAPER