(03 HOURS)

TOTAL MARKS: 80

(05M)

Instructions : (1). Question No .1 is compulsory

- (2) Answer any *Three Questions* from the remaining questions.
- (3) Each full question carries 20 marks.
- (4) Assume suitable data, if needed and state it clearly.

Q.1	Attempt a	nv four
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а	Enlist in detail classifications of engineering materials.	(05M)
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- b Explain the preservative treatments for stones. (05M)
- c State and explain the factors affecting durability of concrete. (05M)
- d Describe the vacuum concreting method. (05M)
- e Draw a neat labeled sketch of couple roof. (05M)
- f Explain the methods of compaction of concrete.

Q.2 a) Explain bricks and their manufacturing process. (08M)

- b) Define workability of concrete. State different methods to find out workability of fresh concrete and explain any one of them with step by step in detail. (12M)
- Q.3 a) Sketch for providing damp proof course in foundation at plinth stating material used for damp proofing. (06M)
 - b) Enlist the joints in stone masonry and explain any one of them with a sketch. (04M)
 - c) Demerits of distemper as compared to paints. (04M)
 - d) Compare natural seasoning and kiln seasoning of timber. (06M)
- Q.4 a) State the properties of hardened concrete and explain any one of them. (06M)
 - b) What is admixture? State its significance. (04M)
 - Explain in detail I.S. method of mix design with steps. (10M)
- Q.5 a) Enlist the various components of RMC plant and draw a neat layout sketch of RMC plant. (08M)
 - b) Find-out FM of sand and classify it for the following observations. Also, determine the grading zone of sand as per clause No. 4.3 of IS 383:1970. (12M)

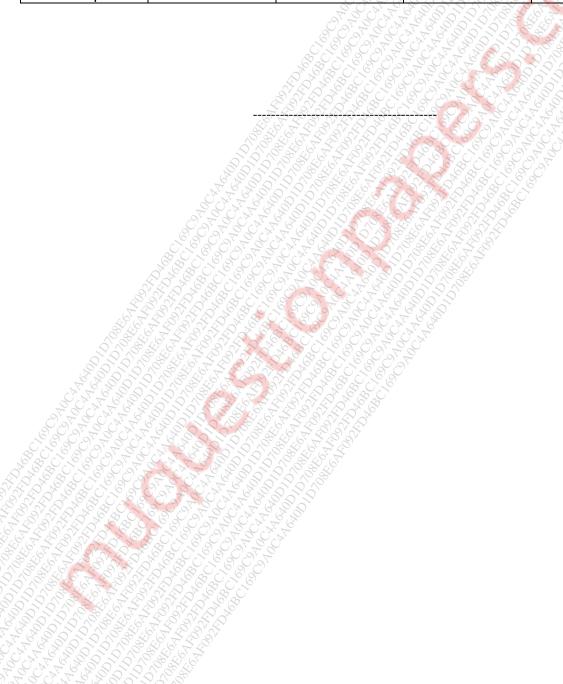
IS Sieve Size	4.75	2.36	1.18	600 μ	300 μ	150 μ	R. Pan
DA COCK TO CO	mm	mm	mm				
Wt. Retained	03	85	280	260	170	90	112
in 'gms.'	12 6 20	8688	go,				

Q.6 a) Write down engineering properties of glass. (04M)

- b) Explain different types of flooring material and its applications in building. (08M)
- c) Write down the period of removal of formwork for different structural members as (08M) per Clause No. 11.3.1 of IS 456 : 2000.

Data for Q.5 b)
Table 1 : Grading Limits for Fine aggregates (Sand), As per Clause No. 4.3 of IS 383 : 1970.

IS Sieve	Percentage passing by weight for					
Designation	Zone-I Grading	Zone-II Grading	Zone-III Grading	Zone-IV Grading		
10 mm	100	100	100	100		
4.75 mm	90 - 100	90 - 100	90 - 100	95 - 100		
2.36 mm	60 - 65	75 - 100	85 – 100	95 - 100		
1.18 mm	30 - 70	35 - 90	75 - 100	90 - 100		
600 μ	15 - 34	35 - 59	60 - 79	80 - 100		
300 μ	5 - 20	8 - 30	12 - 40	15 - 50		
150 μ	0 - 10	0 - 10	0-10-7	0-15		



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