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Code No. : 14146

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD

Accredited by NAAC with A++ Grade

B.E. (Civil Engg.) IV-Semester Main & Backlog Examinations, July-2022

Concrete Technology

Time: 3 hours

Max. Marks: 60

Note: Answer all questions from Part-A and any FIVE from Part-B

Part-A (10 × 2 = 20 Marks)

Q. No.	Stem of the question	M	L	CO	PO
1.	How Effect of water to cement ratio on the workability of concrete.	2	1	1	1
2.	Define the grade of concrete?	2	1	1	1
3.	Distinguish between gel space ratio with water-cement ratio.	2	1	2	1
4.	Write the influence factors for strength of the concrete.	2	1	2	1
5.	Mention the basic considerations in the mix design of concrete.	2	1	3	1
6.	Differentiate between the standard concrete with high strength concrete.	2	1	3	1
7.	Define admixture? Write any two types of admixtures used in cement.	2	2	4	1
8.	Why superplasticizer is mandatory in RMC?	2	2	4	1
9.	Differentiate between the RMC and NCC	2	2	5	1
10.	What is the need for fiber cement concrete?	2	2	5	1
Part-B (5 × 8 = 40 Marks)					
11. a)	Write the various tests on properties of the aggregate.	4	2	1	2
b)	Analysis of the fresh concrete based on the water to cement ratio.	4	2	1	2
12. a)	Mention the short term and long-term properties of the concrete, explain with one example each.	4	2	2	2
b)	Write the codal provisions for NDT, explain rebound hammer mechanism.	4	3	2	2
13. a)	Design M30 grade of the concrete with the following data, Specific gravity of cement 3.15, standard deviation is 5 MPa, Fineness modulus of fine and coarse aggregate are 2.6 and 6.8 respectively Density of Fine aggregate is 1400kg/m ³ Density of coarse aggregate (20mm downgrades) 1650kg/m ³ Assume any other specific data suitable if required.	5	4	3	4

	b)	Write the specification of the mix design as per IS code method.	3	3	3	3
14.	a)	Write the brief note on the influence of the admixtures on the properties of the concrete.	4	3	4	4
	b)	Explain the significance of the fly ash concrete on the recent development in concrete field.	4	3	4	3
15.	a)	What is special concrete, how these are differs from the NCC.	4	3	5	2
	b)	Mention any four applications of ferro cement.	4	3	5	2
16.	a)	Draw the stress-strain diagram for the concrete, how the young modulus was evaluated based on this graph.	4	4	2	2
	b)	Define consistence of the cement, explain the laboratory approach for evaluation of consistence of cement.	4	4	2	2
17.		Answer any <i>two</i> of the following:				
	a)	Write the main difference between IS code and ACI method for design mix.	4	3	3	3
	b)	Write short note on self-compacting concrete.	4	3	4	3
	c)	How the fiber reinforced concrete is much superior to the NCC. Justify.	4	3	5	3

M : Marks; L: Bloom's Taxonomy Level; CO; Course Outcome; PO: Programme Outcome

i)	Blooms Taxonomy Level – 1	20%
ii)	Blooms Taxonomy Level – 2	33%
iii)	Blooms Taxonomy Level – 3 & 4	47%
