

MANIPAL INSTITUTE OF TECHNOLOGY

A Constituent Institution of Manipal University

III SEMESTER B.TECH. (CIVIL ENGINEERING)

END SEMESTER EXAMINATIONS, NOV/DEC 2017

SUBJECT: BUILDING SCIENCE AND TECHNOLOGY

[CIE 2103]

REVISED CREDIT SYSTEM (21/11/2017)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ✤ Answer ALL the questions.
- ✤ Missing data may be suitably assumed.

Q.No.	Questions	Marks
1A	List out the tests to be conducted on cement and mention their purpose.	2
1B	What are the conditions that promote alkali- aggregate reaction?	2
1C	What are the different means of compaction of concrete? Explain.	3
1D	Where is queen closer placed in English bond and why? Support your answer with a neat sketch.	3
2A	What is non-destructive testing? What is the basic concept involved in Ultrasonic pulse velocity test? What are the different modes in Ultrasonic pulse velocity test?	3
2B	What are the objectives of painting? Define base and drier in a paint along with their functions.	3
2C	How does fineness modulus signify the grading of aggregates and the resulting concrete matrix?	2
2D	Differentiate between permeability and porosity of concrete and list the factors promoting the same.	2
3A	Specify the properties of sand to be used as an ingredient for mortar.	3
3B	What is the significance of ductility of bitumen? Explain all the types of bitumen.	3
3C	Describe vulcanization and compounding of rubber? What are the applications of rubber in Civil Engineering?	4
4A	What are the advantages and disadvantages of brick masonry over stone masonry? What is the importance of joints in masonry?	4
4B	Sketch a neat labelled diagram of a brick masonry arch and explain its components. What are the advantages and disadvantages of arches in a building?	3
4C	How does carbonation induce corrosion into RCC structure?	3

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5A	Explain the procedure for laying stone slab flooring.	3		
5B	Draw and explain the components of a pitched roof system.	3		
5C	What is Self-Compacting Concrete? Under what circumstances it is used? What are the ingredients used in SCC? How is it different from normal concrete?	4		

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