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MANIPAL INSTITUTE OF TECHNOLOGY
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A Constituent Institution of Manipal University

III SEMESTER B.TECH. (CIVIL ENGINEERING)

END SEMESTER EXAMINATIONS, DEC 2017

SUBJECT: BUILDING SCIENCE AND TECHNOLOGY

[CIE 2103]

REVISED CREDIT SYSTEM

(/12/2017)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

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

Q.No.	Questions	Marks
1A	Explain the significance of tricalcium silicate and tricalcium aluminate in cement.	2
1B	What flakiness and elongation index of aggregates? How does it affect the properties of fresh concrete?	2
1C	Define segregation and bleeding of concrete. List atleast 3 differences between them.	3
1D	With neat sketches differentiate between English bond and English cross bond.	3
2A	Explain the working of rebound hammer used to non-destructively test hardened concrete and list its advantages.	2
2B	What is the importance of curing of concrete? Explain the following types of curing a) retaining formwork b) ponding method	3
2C	What are the objectives of painting? Define vehicle and solvent in a paint along with their functions.	2
2D	Draw plan and elevation of 1 ½ brick thick wall in single Flemish bond and label the components.	3
3A	Compare the properties of lime and cement mortar.	3
3B	Explain the structure of bullet proof glass. Differentiate between the properties of flint glass and bottle glass.	3
3C	Write the differences between coal tar, wood tar and mineral tar.	4
4A	With neat sketches explain the following a) Square rubble masonry b) Random rubble masonry	3
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?	4
4C	What is corrosion of steel? What are the factors affecting corrosion? Mention the effects of corrosion on RCC structural elements.	4

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5A	Draw a neat sketch of double scaffold and explain its components.	3
5B	Explain the procedure for laying mosaic flooring.	3
5C	What is high strength concrete? What are the factors to be considered while designing high strength concrete? Under what circumstances it is used?	4