

Basavarajeswari Group of Institutions
BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT
 (Autonomous Institute under Visvesvaraya Technological University, Belagavi)

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Course Code

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Third Semester B.E. Degree Examinations, March/April 2024
BUILDING MATERIALS AND CONSTRUCTION

Duration: 3 hrs

Max. Marks: 100

*Note: 1. Answer any FIVE full questions choosing ONE full Question from each Module.
 2. Missing data, if any, may be suitably assumed*

| <u>Q. No</u> | <u>Question</u> | <u>Marks</u> | <u>(RBTL:CO:PI)</u> |
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| <u>Module-1</u> | | | |
| 1. | a. List all the classification of rocks. Explain metamorphic rocks and stratified rocks with examples. | 06 | (2 : 1 : 1.2.1) |
| | b. List all the requirements of good building stones and explain any five. | 06 | (2 : 1 : 1.2.1) |
| | c. Mention any six requirements of good bricks. Explain first class bricks and second class bricks. | 08 | (2 : 1 : 1.2.1) |
| (OR) | | | |
| 2. | a. What the operations involved in the manufacturing of clay bricks? With a neat sketch explain tempering process of clay in pug mill. | 08 | (2 : 1 : 1.2.1) |
| | b. List all the laboratory tests conducted on fine aggregate. Illustrate all the field tests on fine aggregate (sand). | 06 | (2 : 1 : 1.2.1) |
| | c. Explain the procedure for the following tests on coarse aggregate: (i) Aggregate Crushing value test (ii) Aggregate Impact value test. | 06 | (2 : 1 : 1.2.1) |
| <u>Module-2</u> | | | |
| 3. | a. Define foundation. Mention any five functions of foundation. | 06 | (1 : 2 : 1.2.1) |
| | b. With neat labelled sketches, explain the following types of foundations: (i) Isolated column footing (ii) Combined footing | 08 | (2 : 2 : 1.2.1) |
| | c. With neat labelled elevation sketches, explain the features of English bond and Flemish bond. | 06 | (2 : 2 : 1.2.1) |
| (OR) | | | |
| 4. | a. What is masonry? Explain any seven terminologies used in masonry. | 08 | (2 : 2 : 1.2.1) |
| | b. Explain un-coursed rubble masonry and random rubble masonry with neat sketches. | 08 | (2 : 2 : 1.2.1) |
| | c. Define: (i) Load bearing wall and (ii) Cavity wall. | 04 | (1 : 2 : 1.2.1) |
| <u>Module-3</u> | | | |
| 5. | a. With a neat labelled diagrams, explain (i) Timber lintel and (ii) RCC lintel. | 08 | (2 : 3 : 1.2.1) |
| | b. With a neat labelled sketch of an arch, explain any eight elements. | 06 | (2 : 3 : 1.2.1) |

Note: (RBTL - Revised Bloom's Taxonomy Level: CO - Course Outcome: PI- Performance Indicator)

- c. Briefly explain (i) Balcony, (ii) Chajja and (iii) Canopy with their functions. **06** (2 :3 : 1.2.1)

(OR)

6. a. What is floor and flooring? Explain any five factors to be considered before selecting the flooring material. **06** (2 :3 : 1.2.1)
- b. Explain the procedure for laying Granite flooring in ground floor with a sketch. **06** (2 :3 : 1.2.1)
- Draw a neat labelled sketch of wooden king post truss (half part) and **08** (2 :3 : 1.2.1)
- c. explain in detail.

Module-4

7. a. With a neat labelled sketch of panelled door explain any twelve technical terms used in door. **08** (2 :4 : 1.2.1)
- b. Define door. Explain collapsible door with neat sketch. **06** (2 :4 : 1.2.1)
- c. Explain the following windows with neat labelled sketches: **06** (2 :4 : 1.2.1)
- (i) Bay window and (ii) Steel window

(OR)

8. a. With a neat labelled sketch explain any twelve technical terms used in a stair. **08** (2 :4 : 1.2.1)
- b. With neat sketches, explain dog-legged stair and open well stair. **06** (2 :4 : 1.2.1)
- c. Define: (i) Formwork, (ii) Shoring, (iii) Underpinning & (iv) Scaffolding. **06** (1 :4 : 1.2.1)
- Mention any four requirements of formwork.

Module-5

9. a. Define mortar. Explain (i) Heavy mortar, (ii) Lime mortar and (iii) Fire resistant mortar. **06** (2 :5 : 1.2.1)
- b. Define plastering. Explain any five defects in plastering. **06** (2 :5 : 1.2.1)
- c. List and explain the causes of dampness. **08** (2 :5 : 1.2.1)

(OR)

- 10 a. List and explain all the ingredients of paint. **08** (2 :5 : 1.2.1)
- b. Describe the procedure of painting: **08** (2 :5 : 1.2.1)
- (i) Old Steel surfaces (ii) New Wooden surfaces
- c. Briefly explain sand faced plastering. **04** (2 :5 : 1.2.1)

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