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|  |  |   |    |
| Unit 1 Civil Engineering   |  | 1 | 2  |
| Unit 2 Performance Criteria and Management                       |  | 1 | 2  |
| Unit 3 Structural Materials                                      |  | 1 | 2  |
| Unit 4 Mechanics of Materials                                    |  | 1 | 3  |
| Unit 5 Structural Analysis                                       |  | 1 | 3  |
| Unit 6 Loads and Design Process                                  |  | 1 | 3  |
| Unit 7 Reinforced Concrete structures                            |  | 1 | 3  |
| Unit 8 RC Columns: Combined Axial Load and Bending               |  | 1 | 2  |
| Unit 9 Cracking load and Ultimate Moment of Prestressed Concrete |  | 1 | 2  |
| Unit 10 Structural Steel   |  | 1 | 2  |
| Unit 11 Steel Members  |  | 1 | 2  |
| Unit 12 Steel Connections  |  | 1 | 2  |
| Unit 13 Survey   |  | 1 | 2  |
| Unit 14 Fluid  |  | 1 | 2  |
| Unit 15 Soil Mechanics   |  | 1 | 2  |
| Unit 16 Site Investigation                                       |  | 1 | 2  |
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$$OB \quad S = \sum_i \gamma_i S_i = \frac{a_1 A_i + a_2 A_i + a_3 A_i + a_4 B_i}{a_1 OA_i + a_2 OA_i + a_3 OA_i + a_4 OB_i}$$

|     |                               |  |          |     |   |
|-----|-------------------------------|--|----------|-----|---|
|     |                               |  |          |     |   |
|     |                               |  | $OA \ 3$ | $A$ | $S_1 = \frac{a_1 A_{1-1} + a_2 A_{1-2} + a_3 A_{1-3} + a_4 B_1}{a_1 OA_{1-1} + a_2 OA_{1-2} + a_3 OA_{1-3} + a_4 OB_1}$ |
|     |                               |  | $OA \ 3$ | $A$ |   |
|     |                               |  | $OA \ 3$ | $A$ |   |
|     |                               |  | $OB \ 3$ | $B$ |   |
| $i$ | $\sum_{i=1}^1 \gamma_i = 1.0$ |  |          |     | $S = \sum_{i=1}^1 \gamma_i S_i$   |

[1] . . , 2008.

[2] . . , 2014.

[3] . . , 2013.

[4] . . , 2011.

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