

June 2016

MAINTENANCE & REHABILITATION OF STRUCTURE*Time Allowed: 3 Hours**Full Marks: 70***Answer to Question No.1 is compulsory and to be answered first.****This answer is to be made in separate loose script(s) provided for the purpose.****Maximum time allowed is 45 minutes, after which the loose answer scripts will be collected and fresh answer scripts for answering the remaining part of the question will be provided.****On early submission of answer scripts of Question No.1, a student will get the remaining script earlier.****Answer any five questions from the rest.**

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| 1. | Write short notes on the followings (any ten): | 2x10 |
| | i) Aim of maintenance | |
| | ii) Causes of settlement of foundation | |
| | iii) Causes of efflorescence | |
| | iv) Antitermite treatment | |
| | v) Seismic cracks | |
| | vi) Flitched beams | |
| | vii) Dilapidated building | |
| | viii) Shoring | |
| | ix) Underpinning | |
| | x) Retrofitting | |
| | xi) Profanometer | |
| | xii) Fire hydrant | |
| | xiii) BOQ | |
| 2. | Enumerate the physical examination of common defects and damages of an old building. | 10 |
| 3. | How would you examine the capacity and strength of an existing foundation of a building? | 10 |
| 4. | Write briefly on the followings – (a) ferrocement, (b) geopolymers concrete, (c) superplasticisers, (d) epoxy mortar, (e) chemical grouting. | 2x5 |
| 5. | How a damaged concrete floor slab may be repaired? Describe the procedure in steps. | 10 |
| 6. | Describe briefly, the testing procedure of – (a) rebound hammer & (b) UPV test on concrete. | 5x2 |
| 7. | Write in steps, the strengthening of a column by RC jacketing method. | 10 |
| 8. | How do you determine the approximate age of an old building with reference to the use of construction material and techniques? | 10 |
| 9. | What salient points should be kept in mind to prevent leakage from joints of pipe and sanitary fittings? | 10 |
| 10. | Describe the traditional method of underpinning of a load bearing wall. | 10 |
| 11. | What are the visual characteristics of fire damaged concrete in different temperature ranges? | 10 |