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Following Paper ID and Roll No. to be filled in your Answer Book.

PAPER ID : 00137 Roll No.

B. Arch. Examination 2021-22

(Even Semester)

ARCHITECTURAL STRUCTURES - VIII

Time : Three Hours] *[Maximum Marks : 50*

Note :– (i) Attempt any five questions.

(ii) Be precise in your answers. Assume the missing data.

(iii) Allow IS : 800 (2007).

(iv) All questions carry equal marks.

1. What are the basic characteristics of the failure mechanism in general shear failure, local shear failure and punching shear failure.

2. Explain Rankaine's theory for active and passive earth pressure on rigid wall cohesive soil. Consider both presence and absenceof tension crack for active case.

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3. Write short notes on the following :

   (a) Selection of foundation based on soil condition

   (b) Use of soil exploration

4. Discuss the method of obtaining ultimate load and also allowable load on a single pile from pile load test.

5. Calculate the strength of a 20 mm diameter bolt of grade 4.6 for the following cases. The main plates to be jointed are 12 mm thick. Assume Fe 410 :

   (a) Lap joint

   (b) Single cover butt joint, the cover plate being 10 mm thick

   (c) Double cover butt joint, each of the cover plate being 8 mm thick.

6. Write short notes on the following :

   (a) Splenderness ratio (for tension and compression member)

   (b) Splices

   (c) Design strength

7. Write down the step by step design procedure of a plate girder.

8. Explain components of a steel truss with the help of a neat sketch. Also enlist the assumptions considered for analysis of truss.

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