

COMBINED COMPETITIVE EXAMINATION (MAIN)

CIVIL ENGINEERING

Paper—II

Time : 3 hours

Full Marks : 200

Note : (1) The figures in the right-hand margin indicate full marks for the questions.

(2) Attempt **five** questions in all.

(3) Question No. **1** is compulsory.

1. Answer any *ten* from the following :

4×10=40

- (a) List and describe the properties of brick which affect its performance during its service life.
- (b) What are the precautions to be taken for the storage of cement?
- (c) Write brief specifications of various components of track structure recommended for BG system of Indian Railways.
- (d) Discuss the suitability of concrete sleeper for heavy axle loads, high speed traffic and electric-traction on railways.
- (e) What is bulking of sand and how is it determined in the field? Explain its importance in preparation of concrete.
- (f) A 25 mL sample of treated waste water requires 175 mL of distilled water to reduce the odor to a level that is just perceptible. What is the threshold odor number?
- (g) Give a detail method to determine the percentage mixing ratio of a number of aggregate batches to achieve a specific gradation.
- (h) Explain briefly the ϕ -index and the W -index.

