

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION MO/2023)**

**CLASS: B.ARCH.
BRANCH: ARCHITECTURE & PLANNING**

**SEMESTER : 3RD
SESSION : MO/2023**

SUBJECT: AR202 BUILDING CONSTRUCTION & CODES

TIME: 02 Hours

FULL MARKS: 25

INSTRUCTIONS:

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates
-

Q.1(a)	Gross Bearing Capacity and Net Bearing Capacity of the soil is one and the same thing. State whether the following statement is True or False. Give justification to your answer. The live load and dead load in a three storeyed building, transferred through a single column, is 12 tons and 18 tons respectively. If the soil bearing capacity is 10 ton/sqm and the factor of safety is 1.5, what is the area of the column footing?	[2]	CO CO1	BL Understanding and Application
Q.1(b)	Where in the construction site, combined footing and raft footing is used? Sketch and explain the difference between Combined Footing and Cantilever or Strap Footing?	[3]	CO2	Understanding
Q.2(a)	In a construction site it is observed that the soil at shallow depth is compressible, what kind of foundation is suggested in such a Site? Differentiate between End Bearing Pile and Friction Pile.	[2]	CO2	Application and Understanding
Q.2(b)	What do you understand by Curing in construction? Explain the following: Formwork, Shoring and Scaffolding. What is the sequence of removal of formwork in a non-load bearing structure?	[3]	CO1 & CO2	Understanding and Analysis
Q.3(a)	Differentiate between a) Load Bearing and Non-load Bearing Structures, b) Live Load and Dead Load on a structure.	[2]	CO2	Understanding
Q.3(b)	Sketch and explain the following: a) Composite Piles, b) Grillage Foundation	[3]	CO2	Understanding
Q.4(a)	What do you mean by Underpinning? Define High Rise Building as per NBC, India and Massachusetts, United States General Laws.	[2]	CO3	Understanding and Remembering
Q.4(b)	Discuss any three causes of Foundation Failures and suggest remedial measures for the same.	[3]	CO2	Analysis
Q.5(a)	Explain the characteristics and different types of loads acting on a High-Rise Building. What structural systems are adopted in tall buildings, explain with the help of sketches.	[2]	CO2	Understanding and Creating
Q.5(b)	Classify Foundations. Sketch and explain different methods for Underpinning.	[3]	CO2 & CO3	Understanding and Analysis

:::20/09/2023 E:::