Thapar Institute of Engineering and Technology, Patiala
Department of Civil Engineering
Mid-Semester Examination 2019

B. E. (Second Year): Semester-II	Course Code: UCE306
28th September 2019 (10:30- 12:30 Hrs)	Course Name: **ARCHITECTURE AND BUILDING DRAWING**
Time: 2 Hours, M. Marks: 50	Name of Faculty: Dr. Himanshu Chawla

Note: Attempt all questions. Assume missing data, if any, suitably.
Wherever possible, your answer should be supported with neat drawings using pencil and scale only. Draw all sketches on the answer sheet only, and extra drawing sheet is not required.

Q.1 (a) Justify and discuss the utilities of building bye-laws. (4)

(b) What are the elements that make up an effective passive solar home? (5)

(c) With the help of sun movement diagram, discuss the functional planning of a building to be constructed in the hot and dry regions. (6)

Q.2 (a) Discuss the five tests to check the quality of bricks. (5)

(b) Draw the even and odd layers of T-junction of one brick thick wall using Flemish bond. Ensure the vertical joints are discontinues at the junction. (5)

(c) Discuss the suitability of each type of rubble stone masonry at various locations. (5)

Q.3 (a) Why the foundation on the black cotton soil is considered to be dangerous? (2)

(b) Write the favorable conditions for combined footing, explain its salient features with sketch. (3)

(c) Proposed a suitable foundation for the 4 story building (Figure 1), which has to be constructed on the soil having low bearing capacity. Draw the foundation plan of the building. Center-to-center spacing between each column is 5 m and the size of column is 230 x 230 mm. Assume the appropriate scale of the drawing. (5)

Figure 1

Q.4 (a) How the connection between the column and beam is made in the prefabricated (2)
    construction.

(b) Explain the mechanism of lift-slab system used in the construction of prefabricated (4)
    structures

(c) What are the construction techniques adopted to reduce the cost of construction of a (4)
    building?

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