

FEDERAL UNIVERSITY OF TECHNOLOGY, YAKOLU
SCHOOL OF ENVIRONMENTAL TECHNOLOGY
DEPARTMENT OF ARCHITECTURE

SEMESTER EXAMINATION 2017/2018 SESSION

COURSE CODE: ARC 516

COURSE TITLE: SPECIAL TOPICS AND NEW DEVELOPMENTS IN ARCHITECTURE
500

LECTURER: DR P. AYUBA LECTURER: PROF S. N. ZUBAIRU

DURATION: 3 HOURS

INSTRUCTIONS: Answer any five questions. All sketches MUST be in PENCIL.

a) What is a sustainable, green or eco-friendly building? One Bryant Park in New York has been described as a green skyscraper. Who designed the building? What are the features in the building that make it sustainable?

b) What are the four certification methods for assessing green buildings? From which countries did they originate and when? (12 marks)

a) What is an intelligent building? The Ahwatukee House was the first example of the automation of the domestic house. Discuss the architect's vision and provide a sketch of the house.

b) Smart houses are becoming more available today. Describe some features that may be found in a smart house. What were the discoveries made by Professor Michael Moser during his experimental trials on smart environments in his house? (12 marks)

Burj Khalifa is the tallest building in the world. Discuss this building under the following headings:

a) Concept and Design

b) Problems during construction

(c) Draw a FULL PAGE sketch of the building ensuring that the correct proportions are captured. (12 marks)

Old building materials have evolved over time and new materials are being introduced. Discuss the following building materials using sketches to demonstrate their uses in buildings.

(i) wood

(ii) glass

(iii) mud

(iv) plastics (12 marks)

One of the principles of green building design is the use of renewable sources of energy.

(a) Discuss the various renewable sources of energy that can be used in Nigeria.

(b) Draw a sketch of a simple installation of solar panels on the roof of a domestic building. (12 marks)

Various skyscrapers have held the title of the tallest building in the world.

(a) Draw a table listing all these skyscrapers with the following headings:

(i) Year of completion

(ii) Name and location of skyscraper

(iii) Architects

(b) Briefly discuss why the Netherlands decided to build floating houses. (12 marks)