



# LANDMARK UNIVERSITY, OMU-ARAN

## COLLEGE OF SCIENCE AND ENGINEERING

### DEPARTMENT OF CIVIL ENGINEERING

#### B. ENG. (HONS) CIVIL ENGINEERING PROGRAMME

#### 2021/2022 ALPHA SEMESTER EXAMINATIONS

COURSE CODE: CVE 211

COURSE TITLE: INTRODUCTION TO CIVIL  
ENGINEERING

COURSE UNIT: 2

TIME: 2 HOURS

INSTRUCTION(S): ANSWER QUESTION ONE AND ANY TWO QUESTIONS

#### • Question One

(a). Complete the information on Table 1(a) below.

Table 1(a)

Concrete Grade	Mix Ratio	Compressive Strength (MPa)
M5		
M7.5		
M10		
M15		
M20		
M25		
M30		
M35		
M40		
M45		
M50		
M55		
M60		
M65		
M70		

- i. What are the elements of a building? Describe the sub-structure, its functions and types. (5 marks)  
(7 marks)
- ii. Mention six division in NSE related to the civil engineering field. (3 marks)

(b) (i) Define the concept of sustainable development according to ASCE.

(ii) In September 2015, the United Nations General Assembly adopted the 2030 Agenda for Sustainable Development that includes 17 Sustainable Development Goals (SDGs). What are they? (10 marks)

(c) Nestle is about to purchase a land to build some housing units and has reached out to you as a civil engineer for consultation services. List ten factors which must be taken into account before purchasing of the site. (5 marks)

**Total: 30 marks**

#### Question Two

- (a) Briefly explain: (i) water tanks (ii) silos (iii) bunkers (6 marks)
- (b) With the aid of a diagram, show the different parts of a building. (8 marks)
- (c) Describe walls, slabs and beams. (6 marks)

**Total: 20 marks**

**Question Three •**

- (a) Depending upon the character of occupancy or the type of use, buildings can be classified into different categories. Explain five categories. (5 marks)
- (b) Explain six desirable properties of a good concrete. (6 marks)
- (c) (i) Mention three functions each of cement and coarse aggregates in concrete. (6 marks)  
(ii) What is a professional body? Mention four of their functions. (3 marks)

**Total: 20 marks**

**Question Four •**

- (a) Mention ten (10) equipment used in civil engineering practice. Describe the vibrating poker, asphalt extractor and theodolite. (8 marks)
- (b) Classify bridges based on (i) material of construction (ii) type of loading (iii) type of service (iv) span length (8 marks)
- (c) What are four quality tests that must be carried out on concrete before and after completion of casting on site? (4 marks)

**Total: 20 marks**

**Question Five**

- (a) Briefly explain (i) Hydraulic engineering (ii) Highway and Transportation engineering (iii) Construction engineering (iv) Earthquake engineering (8 marks)
- (b) The Engineering Council in the UK produced guidance on sustainability, which defines six principles that engineers should adhere to. What are they? (6 marks)
- (c) Describe the three states of concrete. (6 marks)

**Total: 20 marks**