



KENYATTA UNIVERSITY
EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE

BRE 213: ENVIRONMENTAL BUILDING SERVICES

1ST SEMESTER 2021/2022

TIME: 2 Hours

INSTRUCTIONS:

QUESTION ONE (30 MARKS)

- (a) Define the term 'building services'. (2 marks)
- (b) Outline and discuss THREE major classifications of building services citing relevant examples. (6 marks)
- (c) Highlight SIX documents that contain laws and regulations that guide the provision of building services in Kenya. (6 marks)
- (d) Define Solid waste management (2 marks)
- (e) List FIVE ways in which Energy can be generated for use in a commercial building showing preference for each source. (5 marks)
- (f) Define the term 'sustainable development' and discuss THREE key pillars of sustainable development. (9 marks)

QUESTION TWO (20 MARKS)

- a) Highlight FIVE steps used to manage building fire and life risks in buildings (5 marks)
- b) Highlight any FIVE factors to consider when selecting an appropriate renewable energy technology to apply in an existing building retrofit project (5 marks)
- c) Discuss any FIVE energy technologies that can be incorporated with building energy systems (10 marks)

QUESTION THREE (20 MARKS)

- (a) Discuss any FOUR specialized services that can be offered in a 30 storey commercial office building to facilitate its optimal usage by persons with disabilities. (12 marks)
- (b) State any EIGHT main components of a fire protection system in a building. (8 marks)

QUESTION FOUR (20 MARKS)

- (a) Discuss THREE main features of a consumer control unit. (6 marks)
- (b) Define the term 'earthing system' as used in electrical supply systems for building (2 marks)
- (c) On the basis of insulations, highlight FOUR categories of electric cables (4 marks)
- (d) Discuss any FOUR elements that would influence a developer's choice of building services citing relevant examples. (8 marks)

QUESTION FIVE (20 MARKS)

- a) Explain any THREE natural elements that influence/after provision of building services (6 marks)
- b) Briefly describe TWO types of building ventilation giving the advantages and disadvantages of each (8 marks)
- c) Highlight any SIX factors considered when selecting an appropriate renewable energy technology to apply in an existing building retrofit project (6 marks)