



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2019/2020

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE

ECD 110: ENVIRONMENTAL INNOVATIONS AND TECHNOLOGIES

DATE: Wednesday, 28th October 2020

TIME: 8.00 a.m. - 10.00 a.m.

INSTRUCTIONS:

Answer question ONE (compulsory) and any other two questions. Use well labeled illustrations and diagrams where necessary.

QUESTION 1

- (a) Highlight the main steps to innovation. (5 marks)
- (b) Define the following concepts:
 - (i) Product champion (2 marks)
 - (ii) Entrepreneur (2 marks)
 - (iii) Lean design (2 marks)
 - (iv) Process innovation (2 marks)
 - (v) Disruptive innovation (2 marks)
- (c) Describe FOUR criteria that must be satisfied for an inventor to be granted a patent on an invention. (8 marks)
- (d) State SEVEN characteristics of an innovation that affect how quickly and to what extent it will sell. (7 marks)

QUESTION 2

Explain why FOUR factors that can drive rural communities to innovate drinking water solutions. (20 marks)

QUESTION 3

- (a) Explain the concepts, *dead-cert* and *dead-end* environmental innovations. (10 marks)
- (b) Match the innovation of briquettes as a key alternative source of energy to communities. (10 marks)

QUESTION 4

Classify Edison's bamboo-filament light bulb as an example of invention or innovation. (20 marks)

QUESTION 5

Trace the emergence of *Prosopis juliflora* in Kenya, its evolution into an environmental menace to pastoralist communities and turn into a source of livelihood if well managed. (20 marks)