



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2019/2020
EXAMINATIONS FOR THE MASTER OF ECONOMICS DEGREE
EAE 805: PUBLIC SECTOR ECONOMICS I

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*Externally
Moderated
APRIL
04/02/2020*

Time: 09.00 - 12.00 GMT

Date: APRIL 2020

INSTRUCTIONS:

Answer a total of FOUR questions: All questions carry 15 marks each.

Question 1

Using various fiscal policies explain the following budgetary functions of the government

- | | |
|-------------------|-----------|
| (a) Allocation | (4 marks) |
| (b) Distribution | (4 marks) |
| (c) Stabilization | (4 marks) |
| (d) Regulatory | (3 marks) |

*Get results
Section 4
Realize
the money*

Question 2

- (a) Use appropriate examples to explain the two basic characteristics of Pure Public goods
(4 marks)
- (b) Three households living along a street in an estate have varied preferences for paved paths according to the following functions.

$Q = 12 - 2P$	Preference of household 1
$Q = 18 - P$	Preference of household 2
$Q = 8 - \frac{P}{3}$	Preference of household 3

*Too high
money*

Q is number of paths each respective household would want built given the price. P is a pre announced tax price that a household is required to pay towards the paths. The marginal cost of building a paved path is $MC = \$21$.

- (i) Suppose the town government decides that it will build the largest number of paths asked for by any of the households. The paths are to be financed by levying an equal tax ^(t) such that $t_1 = t_2 = t_3$ ^(t) for each path. Determine the tax rate ^(t) for each ~~household~~ and the number of paths that will be built in this case **(3 marks)**
- (ii) Suppose the town government instead set taxes based on the preferences of the households, determine the social optimum number of paths to be built and what ^{the} price ~~would~~ ^{would} each household pay **(5 marks)**
- (iii) Explain the inefficiency associated with the outcome in (i) **(3 marks)**

Question 3

- (a) Describe the type of externality associated with the following
- (i) Production of toxic waste by a firm **(3 marks)**
 - (ii) Vaccination against a communicable disease **(3 marks)**
- (b) Explain the feasibility of private markets to internalize the externalities in (a) above **(3 marks)**
- (c) In a city, the marginal damage averted from garbage cleanup is $MD = 200 - 5Q$ while the marginal cost associated with garbage cleanup is $MC = 10 + Q$, where Q is the number of cleanups in a month
- (i) Determine the optimal number of garbage cleanups per month for the City **(3 marks)**
 - (ii) Suppose the city government was to use a corrective tax to achieve the level of cleanups in (c), how much tax should it charge for each cleanup? **(3 marks)**

Question 4

- (a) Explain the concept of the Median Voter theorem **(3 marks)**
- (b) With reference to the Wagner's law, explain the sources of growth in public expenditure in your country. **(6 marks)**
- (c) A County government in your country with a current population of 3,500 is considering constructing a new water treatment plant. The plant will take two years to build and would cost, at today's (April, 2020) prices, \$300,000 in 2020 plus \$400,000 in 2021. The plant will begin operating in June, 2022, and it will provide a benefit to the urban population of \$20 per year per person. Cost of operation will be \$7,000 a year regardless of the population. The plant is expected to operate for 20 years, starting June, 2022. Calculate the Net Present Value of this project under the assumption that nominal interest rate is 10%, inflation is 3%, and population growth is zero. **(6 marks)**