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Week 9 : Assignment 9

The due date for submitting this assignment has passed.

Due on 2025-03-26, 23:59 IST.

Assignment submitted on 2025-03-25, 12:44 IST

1) Which of the following model is an energy-economic interactions? ***1 point***

- Energy demand model
- End-use accounting model
- Econometric model
- Input-output model

Yes, the answer is correct.
Score: 1

Accepted Answers:
Input-output model

The Input-Output Model in energy-economic interactions is a framework used to analyze the relationship between energy consumption and economic activities. It extends traditional input-output analysis by incorporating energy flows, allowing researchers to assess how energy is used across different sectors and its impact on economic output.

Tracking energy consumption across industries.
Evaluating energy efficiency in production processes.
Assessing environmental impacts, such as carbon emissions.
Understanding structural changes in the economy due to shifts in energy use.

A more advanced version, the Primary-to-Final Energy Input-Output Model, improves upon conventional models by providing a detailed description of energy flows, including energy conversion processes and efficiency indicators. Additionally, energy input-output analysis is increasingly applied to global trade and policy-making.

2) Which of the following assumptions are NOT true for input output model ***1 point***

- The economy can be divided into inter-industry sector and final-demand sector
- The production operates under constant returns to scale
- Technical coefficients are constant
- Each industry considered in the analysis must transact with every other industry

Yes, the answer is correct.

Score: 1

Accepted Answers:

Each industry considered in the analysis must transact with every other industry

3) Consider a coefficient matrix A for n-sector economy. What does the coefficient a_{12} indicate? ***1 point***

- (selected) Units of sector 1 purchased by sector 2 for each unit produced by sector 2
- Units of sector 2 purchased by sector 1 for each unit produced by sector 1
- Units of sector 1 purchased by sector 2 per unit production of sector 1
- Units of sector 2 purchased by sector 1 per unit production of total output of all sectors

Yes, the answer is correct.
Score: 1

Accepted Answers:

Units of sector 1 purchased by sector 2 for each unit produced by sector 2

4) What will be the value of technical coefficients used in input output model? ***1 point***

- Less than zero
- More than one
- (selected) Between zero and one (both values are included)
- None of these

Yes, the answer is correct.
Score: 1

Accepted Answers:

Between zero and one (both values are included)

5) The wood supplies worth 8 million as input to a paper products industry whose annual production is worth 80 million. What is the technical coefficient of the transaction? ***1 point***

- (selected) 0.1
- 0.66
- 0.8
- 8.0

Yes, the answer is correct.
Score: 1

Accepted Answers:

0.1

6) What will be the diagonal value of identity matrix (I)? ***1 point***

- Zero
- (selected) Equal to one
- Between zero and one
- None of these

Yes, the answer is correct.
Score: 1

Accepted Answers:
Equal to one

Use the following Input-Output table to answer the questions that follow (Q7, Q8, Q9)

(All values in monetary units)				
	Sector 1	Sector 2	Final Demand	Total Output
Sector 1	200	300	500	1000
Sector 2	150	150	1200	1500
Payments	650	1050	1500	3200
Total Inputs	1000	1500	3200	5700

7) The units purchased from sector 2 for each unit output of sector 1 (a_{21}) is- ***1 point***

- 0.27
- 0.15
- 0.1
- 0.3

Yes, the answer is correct.
Score: 1

Accepted Answers:
0.15

8) Which of the following is the Leontief matrix of the given IO table ***1 point***

- $\begin{bmatrix} 1.44 & 0.04 \\ 0.22 & 0.19 \end{bmatrix}$
- $\begin{bmatrix} 1.32 & 0.36 \\ 0.50 & 1.04 \end{bmatrix}$
- $\begin{bmatrix} 1.30 & 0.29 \\ 0.21 & 1.16 \end{bmatrix}$
- $\begin{bmatrix} 1.44 & 0.99 \\ 0.54 & 1.84 \end{bmatrix}$

Yes, the answer is correct.
Score: 1

Accepted Answers:
$\begin{bmatrix} 1.30 & 0.29 \\ 0.21 & 1.16 \end{bmatrix}$

9) If the final demand were to change to 400 units in sector 1 and 1000 units in sector 2, ***2 points*** calculate the new output values of sector 1 and sector 2 respectively. (rounded off to the nearest whole number)

- 1732, 1302
- 810, 1244
- 1023, 1004
- 1735, 1200

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Yes, the answer is correct.
Score: 2

Accepted Answers:
810, 1244