

Preparation 2 Quiz: Systems Thinking

Email

Considering a petrol-powered private car with automatic transmission as a technological system, match each item to an aspect of the system.

Architecture: Structure: _____

Architecture: Behavior: _____

Function: Input: _____

Function: Output: _____

Outcome: Stakeholders: _____

Outcome: Problem: _____

Outcome: Benefit: _____

Outcome: Detriment: _____

Items:

- Acceleration Pedal; Brake Pedal; Internal Combustion Engine; Steering Wheel; Tire Wheels
- Acceleration Pedal activates Internal Combustion Engine; Brake Pedal slows Tire Wheels; Internal Combustion Engine spins Tire Wheels; Steering Wheel rotates Tire Wheels
- Human Driver rotates Steering Wheel, pushes on Acceleration Pedal, and pushes on Brake Pedal
- Tire wheels roll on Road Network
- Commuting to work using public transport can be time-consuming
- People who live far away from their workplace in a place without fast public transport
- Commuting to work quickly
- These cars produce air pollution which affects human health adversely

Select all the examples of a technological system.

- ☐ The London underground (subway) system
- ☐ The Solar system
- ☐ An artificial heart
- ☐ A human with a brain-machine hardware interface installed in their brain to control a prosthetic arm

Select all the appropriate statements about system structure, behavior, and function.

- ☐ System function is made possible by system structure & behavior.
- ☐ System architecture is made possible by system function.
- ☐ The function of a system depends on other systems at its boundary.

Select all the appropriate statements about system function and system outcome.

- ☐ It is sometimes possible for different system functions to achieve the same system intended outcome (benefits and/or detriments).
- ☐ It is sometimes possible to design a system that produces only benefit, without any detriment.
- ☐ It is sometimes possible to achieve multiple intended outcomes (benefits and/or detriments) with the same system function.

If there was anything you were not sure about to do with this assignment, would like to leave a comment about the assignment, or have any other questions about this topic, please comment here.
