Unit 2 - Practice Assignment

Assignment 0

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-01-27, 23:59 IST.

Given below are multiple choice question with one correct answer.

1) In the System Dynamics, the term **dynamics** referred to as: *1 point*

- Just Motion
- Change over time
- Freezing the time
- All of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
Change over time

2) Modeling is a typical phase in the real world, so the commonly used definition for it can be: *1 point*

- Predicting money & time
- Estimation of mathematical formulation
- A methodology used as a tool for the investigation of problems and their solutions
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
A methodology used as a tool for the investigation of problems and their solutions

3) "A System is an entity that maintains its existence through the mutual interaction of its parts." *1 point*
Given above is a definition of a system. Among the following, which is a **crucial part** of the above definition:

- To maintain its existence
- Mutual interaction of its parts
- To form a unified pattern
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
Mutual interaction of its parts

4) Below are some of the significant characteristics of the system. You are required to point out the **characteristics that are irrelevant** to the system. *1 point*

- Contains definable elements
- Among elements of the system, there is a functional interrelationship
- Bounded by the surrounding called environment
- Absence of structure due to elements and their compositions

No, the answer is incorrect.
Score: 0
Accepted Answers:
Absence of structure due to elements and their compositions

5) Among the following characteristics, which is **not** one of the characteristics of system thinking: *1 point*

- Thinking in loops
- Regulating System
- Dynamic thinking
- Steering System

No, the answer is incorrect.
Score: 0
Accepted Answers:
Regulating System

6) Given below are the two equations which represent Demand and supply equations respectively, where Q_D and Q_S denote the quantity demanded and supplied respectively and P represents the per-unit price.

$Q_D = 4000 - 2P$

$Q_S = 500 + 5P$

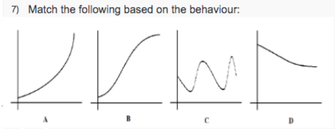
Equilibrium for the price is given as_____.

Hint

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Numeric) 500

1 point

7) Match the following based on the behaviour: *1 point*



(a) Goal Seeking
(b) S-shaped
(c) Exponential
(d) Oscillations

Choose the correct option as the above figure

- A:(a); B:(d); C:(b); D:(c)
- A:(c); B:(b); C:(d); D:(a)
- A:(b); B:(c); C:(d); D:(a)
- A:(c); B:(b); C:(a); D:(d)

No, the answer is incorrect.
Score: 0
Accepted Answers:
A:(c); B:(b); C:(d); D:(a)

8) There are three simulation techniques, namely, Discrete Event Simulation, Agent-Based Modeling, and System Dynamics. Among these three, there is a recent trend for hybrid simulation which integrates *1 point*

- System Dynamics and Agent-Based Modeling
- System Dynamics along with Discrete Event Simulation
- Agent-Based Modeling and Discrete Event Simulation
- All three Agent-Based Modeling, System Dynamics and Discrete Event Simulation

No, the answer is incorrect.
Score: 0
Accepted Answers:
All three Agent-Based Modeling, System Dynamics and Discrete Event Simulation

9) Given to you is a dynamical system where water is leaking out of a hole in a jar. Initially available stock of water is 40, and 10% of water leaks at each unit of time. So, among the following, which is the correct option to express the above situation as a differential equation. *1 point*

- $J(0) = 40$
  $\frac{dJ}{dt} = -0.1 \cdot J$
- $J = 40$
  $\frac{dJ}{dt} = -0.1 \cdot J$
- $J(0) = 40$
  $\frac{dJ}{dt} = -0.1 \cdot J(0)$
- $J_0 = 40$
  $\frac{dJ}{dt} = -0.1 \cdot J$

No, the answer is incorrect.
Score: 0
Accepted Answers:
$J(0) = 40$
$\frac{dJ}{dt} = -0.1 \cdot J$

10) Consider the causal link Y --> X. Suppose you observed the values of X and Y as follows: *1 point*

X	4	2	1	0.5
Y	0.25	0.5	1	2

As per the data, the causal link Y --> X should have the polarity as

- +
- -
- x

No, the answer is incorrect.
Score: 0
Accepted Answers:
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