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Courses » Introduction to Chemical Thermodynamics and Kinetics

Announcements **Course** Ask a Question Progress FAQ

Unit 4 - Week 2

Register for
Certification exam

Course outline

How to access
the portal

Week 0

Week 1

Week 2

 Introduction -
part 1 Introduction -
part 2 Lecture 02
notes Quiz :
Assignment 2 Week 2
feedback form Assignment
Solution

Week 3

Week 4

Week 5

Week 6

Week 7

Assignment 2

The due date for submitting this assignment has passed.

As per our records you have not submitted this **Due on 2019-02-13, 23:59 IST.**
assignment.

1) 10 moles of an ideal monoatomic gas initially at 10 atm and 27^0 C is **1 point**
allowed to expand isothermally against a constant pressure of 1 atm. Calculate the
work done.

- 5364.9 calories
- 536.9 calories
- 5.0 calories
- 500.0 calories

No, the answer is incorrect.**Score: 0****Accepted Answers:***-5364.9 calories*

2) What will be the work done in question 1 if the gas expands isothermally **1 point**
and reversibly until the pressure becomes 1 atm.

- 13.183 calories
- 137 calories
- 28.183 calories
- 13728.183 calories

No, the answer is incorrect.**Score: 0****Accepted Answers:***-13728.183 calories*

3) One mole of an ideal gas initially at 10 atm and 27^0 C is allowed to expand **1 point**
isothermally and freely i.e. against zero opposing pressure until the pressure falls to
5 atm. Calculate the work done.

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Score: 0**Accepted Answers:***Zero*

4) Two moles of an ideal monoatomic gas is heated at constant pressure from 27°C to 127°C . Calculate the work done. **1 point**

- 397.4 Calories
- 3000 calories
- 50 calories
- 20 calories

No, the answer is incorrect.**Score: 0****Accepted Answers:***-397.4 Calories*

5) One mole of an ideal monoatomic gas at 27°C is allowed to expand into vacuum from 10 litre to 20 litre. What will be the work done? **1 point**

- 50 J
- Zero
- 1000 J
- 288.32 J

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

6) Calculate the work needed for a bird of mass 120 g to fly to a height of 50 m from the surface of the Earth. **1 point**

- 100 J
- 59 J
- 69 J
- 80 J

No, the answer is incorrect.**Score: 0****Accepted Answers:***59 J*

7) The magnitude of work done (in Cal) when 1 mole of calcium carbonate decomposes at 1 atm and 1,000 K is: **1 point**

- 1,798
- 1,897
- 1,978
- 1,987

No, the answer is incorrect.**Score: 0****Accepted Answers:***1,987*

8) A piece of zinc of mass 10.0 g is dropped into a beaker of dilute hydrochloric acid. The work done by the system as a result of the reaction is (given **1 point**)

the atmospheric pressure is 1.1 atm and the temperature 23°C)

- 271 J
- 376 J
- 577 J
- 1000 J

No, the answer is incorrect.

Score: 0

Accepted Answers:

-376 J

9) The magnitude of work done (in Cal) when one mole of water vaporizes at 100 °C and 1 atm is: **1 point**

- 7.4115
- 74.115
- 741.15
- 7,411.5

No, the answer is incorrect.

Score: 0

Accepted Answers:

741.15

10) A strip of magnesium of mass 15 g is dropped into a beaker of dilute hydrochloric acid. Calculate the work done by the system as a result of the reaction (the atmospheric pressure is 1.0 atm and the temperature 25°C) **1 point**

- 1.5 kJ
- 3.5 kJ
- 1.5 kJ
- 15 kJ

No, the answer is incorrect.

Score: 0

Accepted Answers:

-1.5 kJ

Previous Page

End

