

Name: _____
Last First

Student ID Number: _____

Read directions very carefully. Write your answer legibly in the designated spaces. *Total number of points is 150.*

1. List four ways in which oil companies have sought to “broaden” the search for oil reserves beyond “easy” oil. *4 points*

2. List two arguments for and against the completion of the Keystone XL pipeline. *4 points*
FOR:

AGAINST:

3. List four of the founders of OPEC. *4 points*

4. List three characteristics of unconventional oil that make it different than conventional oil. *4 points*

5. List four major shale formations in Texas and North Dakota. *4 points*

Using the article “Up in Flames” by Jennifer Hiller and the lecture material, answer the following questions:

6. What is the primary problem that gave rise to the sharp increase in the flaring of natural gas in the Eagle Ford shale? *2 points*
7. Which Texas state agency regulates gas flaring? *2 points*
8. What has been the primary response of this agency to flaring at Eagle Ford? *2 points*
9. What characteristic of Eagle Ford shale has encouraged the flaring of natural gas? *2 points*
10. How did the price of natural gas compared to oil affect flaring? *2 points*

11. SHORT DISCUSSION:

Using the article “A Retrospective Review of Shale Gas Development in the United States: What Led to the Boom?” (RFF, Wang and Krupnick) and the lectures, evaluate the following quote: 20 points

George Mitchell richly deserves to be remembered as the father of modern fracking. With no help from other companies, the natural gas industry as a whole, or government, he single-handedly developed this new technology.

12. Explain what the following four fractions of crude oil are used for, and how do they compare to each other in terms of volatility. *4×3 = 12 points*

Gasoline

Asphalt

Diesel for road vehicles

Marine diesel

13. Describe the challenges associated with storage and transportation of electricity on a large scale. What current and future technologies are used to address these challenges? How does storage and transportation of electricity compare in its efficiency to the storage and transportation of oil?

9 points

14. List standard SI units for the following physical quantities:

3×3 points = 9 points

voltage

electrical current

electrical resistance

16. Succinctly explain, in your own words, what causes the following kinds of pollution. Be specific, and point out which fuels are most likely to emit these pollutants.

5×4 points = 20 points

Particulate pollution

Nitrogen oxide (NO_x) pollution

Acid rains

Heavy metal pollution

Greenhouse effect

GROUP PROJECT PROSPECTUS

Turn this in separately.

50 points