

## Unit 14 - Week 12

## Course outline

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## Assignment 12

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

Due on 2019-10-23, 23:59 IST.

 1) What is the drawback of Pay Back Period as a metric of energy economics? **1 point**

- a. Can be a fraction of year
- b. Does not consider time value of money
- c. Operational and Maintenance (O&M) costs are not considered
- d. Fails if revenue is less than O&M costs

No, the answer is incorrect. Score: 0

Accepted Answers:

b. Does not consider time value of money

 2) LCOE is useful for **1 point**

- a. Determining RoI
- b. Choosing discount rate
- c. Comparing competitiveness of different energy installations
- d. Calculating tax rebates

No, the answer is incorrect. Score: 0

Accepted Answers:

c. Comparing competitiveness of different energy installations

 3) A new oil well gives 100 billion barrels of oil. However, the cost of recovering the oil is equivalent to 30 billion barrels. Calculate the EROEI **1 point**

- a. 3.33
- b. 66.6
- c. 0.33
- d. 33.3

No, the answer is incorrect. Score: 0

Accepted Answers:

a. 3.33

 4) The EROEI for oil has reduced from 90:1 in the 50s to around 5:1 today. What are the primary reason(s)? **1 point**

- a. Wells are deep requiring deeper exploration
- b. Oil fields are getting smaller
- c. Rigs have become complex and expensive
- d. All of the above

No, the answer is incorrect. Score: 0

Accepted Answers:

d. All of the above

 5) Input Output Analysis was developed by **1 point**

- a. Philip Kotler
- b. Wassily Leontiff
- c. John F. Welch
- d. Jan Tinbergen

No, the answer is incorrect. Score: 0

Accepted Answers:

b. Wassily Leontiff

 6) A thermal power plant has a maximum load of 160 MW and an annual average load factor of 0.6. The coal consumption is 1 kg per kW-h of energy generated and cost of coal is Rs. 450 per metric ton. Calculate the net annual cash flow if energy is sold at Re 1 per kWh **1 point**

- a. Rs. 46 crores
- b. Rs. 84 crores
- c. Rs. 37 crores
- d. Rs. 70 crores

No, the answer is incorrect. Score: 0

Accepted Answers:

a. Rs. 46 crores

 7) The initial investment in a power plant is Rs. 4000 crores. After 4 years, another Rs. 1200 crore is invested and from 5th to 12th year, an annual investment of Rs. 400 crores is made ever year. The salvage value of the plant after 30 years is Rs. 600 crores. If the discount rate is 10%, calculate the present worth of all the payments at the time of commissioning. **1 point**

- a. Rs. 6000 crores
- b. Rs. 5000 crores
- c. Rs. 5500 crores
- d. Rs. 5950 crores

No, the answer is incorrect. Score: 0

Accepted Answers:

a. Rs. 6000 crores

 8) An energy installation costs Rs. 1.2 crores. Cash inflow over next 5 years is expected to be Rs. 30 lakhs over the first 2 years, Rs. 45 lakhs over the next 2 years and Rs. 75 lakhs in the 5th year. Assuming a discount rate of 15% and zero salvage value after 5 years, calculate its NPV **1 point**

- a. Rs. 15 lakhs
- b. Rs. 20 lakhs
- c. Rs. 25 lakhs
- d. Rs. 10 lakhs

No, the answer is incorrect. Score: 0

Accepted Answers:

b. Rs. 20 lakhs

 9) The installation cost of an energy equipment is Rs. 15 lakhs and estimated O&M cost is Rs. 50,000/year. Estimated savings is 30000 units of fuel @ Rs 25/unit. Calculate the payback period in years **1 point**

- a. 2 years
- b. 3 years
- c. 4 years
- d. 5 years

No, the answer is incorrect. Score: 0

Accepted Answers:

b. 3 years

 10) If the life of the equipment (in Question 9) is 10 years with no salvage value, calculate average RoI over its life **1 point**

- a. 35 %
- b. 30%
- c. 45%
- d. 70%

No, the answer is incorrect. Score: 0

Accepted Answers:

c. 45%