



FACULTY OF SCIENCE

DEPARTMENT OF GEOGRAPHY, ENVIRONMENTAL MANAGEMENT & ENERGY STUDIES

MODULE	ENS0037 ENERGY ECONOMICS
CAMPUS	APK
EXAM	NOVEMBER 2013

DATE 4 NOVEMBER 2013

SESSION 12:30 – 15:30

ASSESSOR(S)

DR JOHN LEDGER

EXTERNAL MODERATOR

MR H. VOSLOO
(ESKOM)

DURATION 3 HOURS

MARKS 100

NUMBER OF PAGES: 2 PAGES

INSTRUCTIONS:

Please answer any THREE of the following FIVE questions. Each answer should be in the form of a comprehensive essay, with sketches and diagrams where these may be appropriate to enhance your answer. Alternatively you may provide your answer in point form. Each answer is worth the same number of marks (33.3%)

QUESTION 1

1. Economics of Biofuels. South Africa's Department of Energy has announced it will make blending of biofuels with fossil fuels mandatory in 2016. Discuss the economics of this step, and the implications of producing biofuels in South Africa, given that it is a water-scarce country and some strong objections to biofuels have already been raised by the Botanical Society.

[33.3]**QUESTION 2**

2. The Economics of Solar Thermal and Solar Photovoltaic Energy. The world is increasingly turning to renewable energy resources as a reaction to declining fossil fuel stocks and global pressure to reduce green house gas emissions. Describe the economics of solar thermal and solar photovoltaic devices that are available for electricity generation (or to replace electricity for thermal heating) and the comparative costs of the different technologies, as well as specific issues around the capacity of these renewables to deliver reliable energy.

[33.3]**QUESTION 3**

3. Energy Return on Energy Invested. The concept of EROEI is very useful to compare the cost of energy produced by different technologies. Write an essay about the relationship between energy and the economy, supply and demand, and cost and price, using the concept of EROEI as the basic principle.

[33.3]**QUESTION 4**

4. The Economics of a "Carbon Tax". The South African Government has unveiled plans to introduce a tax on Carbon Dioxide emissions in the near future. The economic implications of this are uncertain, and there is opposition from many quarters Write an essay on this topic.

[33.3]**QUESTION 5**

5. The Global Economics of Oil. Write an essay on the global economics of oil and how this may be affected by the new "boom" in gas and tar sands extraction in Canada and the USA, and by the recent discoveries of oil in East Africa as well as offshore gas in Tanzania and Mozambique.

[33.3]**SUB-TOTAL [33.3]****TOTAL [100]**