UNIVERSITY COLLEGE LONDON

University of London

EXAMINATION FOR INTERNAL STUDENTS

For The Following Qualification:-

B.Sc.

ES2224: Economics II

COURSE CODE	:	**ENVS2224**
UNIT VALUE	:	**0.50**
DATE	:	**05-MAY-06**
TIME	:	**10.00**
TIME ALLOWED	:	**3 Hours**

ENVS 2224 Economics 2

This paper consists of two sections. Section A has 7 essay based questions and Section B 3 calculation based questions. All questions carry equal marks. Answer five questions. At most you can choose two questions from Section B.

Section A: Essay based questions

Question 1

(1) Use Pearce's model to explain the role of construction in a sustainable development.

(10 marks)

(2) The construction industry is mainly made up of medium and small firms. Explain the adverse effects of smallness on the pace of technological progress in construction.

(5 marks)

(3) Illustrate solutions to the problems identified in problem(2) above.

(5 marks)

Question 2

(1) Define capital budgeting and explain its relationship with corporate planning.

(5 marks)

(2) Explain why the focus of project appraisal is on cash flows rather than profits?

(5 marks)

(3) Explain the appraisal and evaluation cycle as recommended in the HM Treasury's Green Book. Your answer must include (A) the tasks to be done at each stage and (B) the techniques available to improve the decision-making at each stage.

(10 marks)

Question 3

A diversified Chinese construction group wants to expand its business into the UK. As consultant to the CEO of this company assess which segments of UK construction market to enter, such as infrastructure, building or road construction. In your assessment report, include information regarding

(1) the conceptual framework for conducting this assessment.

(10 marks)

(2) the justification of your recommendations.

(10 marks)

Question 4

(1) Use Solow's model to explain why capital accumulation is important to economic growth.

(5 marks)

(2) Compare the role of construction in Solow's model with the Endogenous Growth model.

(10 marks)

(3) Describe and explain the statistical relationship between the share of construction output to GDP and GDP per capita.

(5 marks)

Question 5

(1) What are the costs and benefits of vertical integration?

(10 marks)

(2) Define transaction costs and explain what are the root reasons for the existence of these costs.

(5 marks)

(3) According to transaction cost theory, under what conditions will subcontracting be preferable to in-house production?

(5 marks)

Question 6

(1) Set up a game in normative form and extensive form to explain when "Prisoner's Dilemma" may happen? Your answer has to show that you are able to find the equilibrium strategy.

(10 marks)

(2) How can "Prisoner's Dilemma" be overcome? Use a construction case to illustrate your answer.

(5 marks)

(3) What is zero-sum game and non-zero-sum game? Use construction cases to explain and illustrate your answers.

(5 marks)

Question 7

(1) Explain the meaning of the following three information problems

  (A) Adverse selection
  (B) Moral Hazard
  (C) Hold-up problem
  Your answer has to show the complete reasoning as to how equilibrium
  conditions are reached in each case.

(10 marks)

(2) Use construction cases to illustrate when these three informational
  problems identified in part(1) may happen.

(10 marks)

Section B: Calculation based questions

Question 8

A CEO of an engineering company has to make a choice between two possible investments:

Project	Cash Flow (£ thousands)			
	C_0	C_1	C_2	IRR
A	-400	250	300	23
B	-200	140	179	36

The opportunity cost of capital is 9%. This CEO is tempted to take B, which has the higher IRR.

(1) Explain to the CEO why this is not the correct procedure.

(5 marks)

(2) Explain four pitfalls of the IRR rule.

(5 marks)

(3) Show the CEO how to adapt the IRR rule in order to select the best project.

(5 marks)

(4) Show him that this project also has the higher NPV.

(5 marks)

Question 9

A project has an initial investment of £100 that will lead to the production of 10 units of output in every period forever. The interest rate is 10%. You have been given the following predictions about price and cost in pounds (£s) per unit. (Note: Ignore taxes.)

	Pessimistic	Expected	Optimistic
Price	3	4	5
Cost	3	2	1
Probability of occurrence	0.5	0.3	0.2

(1) Carry out a scenario analysis in order to find the NPV in the pessimistic case, the expected case and the optimistic case.

(5 marks)

(2) Calculate the expected return of this investment project based on the information in the table above. If the appraiser is not confident about the probabilities of the pessimistic and expected scenarios (i.e. the probability of the optimistic one is reliable) and reckons the project may be subject to slightly bigger downside risks, carry out a sensitivity analysis in order to check whether this doubt is important in determining the feasibility of this project.

(7 marks)

(3) Now suppose that somebody points out that price and cost move together. That is, a high price occurs when costs are high and a low price occurs when costs are low (as illustrated in the following table).

	Pessimistic	Expected	Optimistic
Price	3	4	5
Cost	1	2	3
Probability of occurrence	0.5	0.3	0.2

Carry out a scenario analysis to find the NPV in a high price/cost case, the expected price/cost case and the low price/cost case, together with the expected return of this investment project. In order to conduct a sensitivity analysis as required in part(2) above to show how the correlation between variables affects the scenario analysis.

(8 marks)

Question 10

An investor owns a site that is suitable for either 6 or 9 condominium units. The construction costs per unit of the building with 6 units are £80,000 and £90,000 per unit for 9 condominium units. Construction costs are the same whether construction takes place in year 0 or year 1. The current market price of each unit is £100,000. The cost of capital is 12% per year. If market conditions are favourable in year 1, each condominium will sell for £120,000 and if conditions are unfavorable, each condominium will sell for £90,000. The probability that conditions are favorable in year 1 is 7/15. The investor can either build the units in year 0 and sell them in year 0, build in year 0 and sell in year 1, or build in year 1 (when economic conditions for year 1 will be known) and sell in year 1.

(1) If the investor decides to build in year 0, how many condominiums should he build? What is the present value of his total profits if he builds in year 0?

(5 marks)

(2) If the investor decides to wait to build until the next year, what is the present value of his expected profits?

(12 marks)

(3) Explain the value of the empty site.

(3 marks)

END OF PAPER