

**UNIVERSITY OF SOUTH AUSTRALIA
SCHOOL OF GEOINFORMATICS, PLANNING & BUILDING**

PROGRAM(S): Bachelor of Construction Management & Economics & Diploma in Built Environment

COURSE: DEVELOPMENT ECONOMICS

EXAMINATION: Internal Exam, Semester 1, 2003

DURATION: 3.0 Hours of Exam time preceded by 10 minutes of Reading time, a total of 3 Hrs 10 Mins.
For ENTEXT students 10 minutes of Reading time plus 0.5 Hours of Exam time, a total of 3 Hrs 40 Mins.

EXAMINER: Justin Cole

INSTRUCTIONS TO CANDIDATES:

- This exam is worth 40% of the total course marks
- Attempt five questions
- All questions are of equal value
- No reference materials are allowed. Calculator is allowed.
- State any assumptions made

NOTES FROM EXAMINER: nil

1. An investment company is considering three investment alternatives, A, B and C, and details of the estimated incomes and outgoings are shown below

	Investment A		Investment B		Investment C	
	Income	Outgoings	Income	Outgoings	Income	Outgoings
Y1	\$10,000	\$15,000	\$nil	\$10,000	\$nil	\$20,000
Y2	\$15,000	\$25,000	\$nil	\$10,000	\$nil	\$25,000
Y3	\$40,000	\$30,000	\$40,000	\$30,000	\$nil	\$40,000
Y4	\$30,000	\$15,000	\$nil	\$15,000	\$nil	\$35,000
Y5	\$30,000	\$15,000	\$60,000	\$15,000	\$150,000	\$nil

What is the (a) net present value, (b) the profitability index @10% and (c) the internal rate of return for each proposal?

Which one would you choose and why?

2. A company asks that you prepare two studies for an investment with capital growth, alone; the proposal is for asset to be purchased for \$600,000 and, either
(a) be financed by \$300,000 of their resources and an interest only loan of \$300,000, over five(5) years @ 9% per annum, or
(b) be financed by \$150,000 of their resources and an interest only loan of \$450,000, over five(5) years @ 9% per annum.

In both cases the administration costs, insurance and so on is \$10,000, per annum.

If the investment were to be sold for \$1,215,000, after five years, which option gives the highest return (IRR)?, and state, (with reasons), in your opinion which gives the best return for the risk involved?

3. Three investments are under review for purchase by a finance company; if the company requires all purchases to have an IRR of 14%, which of three investments qualify?, further, which one would you choose?

Investment	A	B	C
Value	\$750,000	\$540,000	\$ 900,000
Incom year 1	\$ 60,000	\$ 36,000	\$ 45,000
2	\$ 66,000	\$ 42,000	\$ 48,000
3	\$ 75,000	\$ 48,000	\$ 51,000
Value at end			
Year 3	\$900,000	\$840,000	\$1,050,000

4. A developer wishes to compare two building solutions , viz., Project A and Project B for their “whole of life costs”

The data is

Building A..capital cost \$1,000,000

Maintenance \$50,000, per annum

Major refits \$200,000, at years 3 and 8

Light heat and power, \$ 70,000 per annum

BuildingB..capital cost \$800,000

Maintenance \$80,000, per annum

Major refit \$350,000, at year 5

Light heat and power, \$ 70,000 per annum

- What are the ‘whole of life’ costs for each proposal, over 10 years, at 10% discount rate, per annum, and, which is the cheapest, and by how much?
- For the cheapest option calculate the percentage contribution of each of the major cost components to the total; rank them in order of their importance

5.(a).Describe the process of ‘Whole of Life Costing’, and describe how it can be applied to building and other design (s)

- Define the following terms and describe their relative importance in the assessment of property as an investment
 - Vacancy rate
 - Take up rate
 - Completion rate
 - Rental rate
 - Capitalization rate

6. (a) Describe the following investment vehicles and comment on the advantages and disadvantages in investing in

- Direct property
- Property syndicates
- Listed property trusts
- Unlisted property trusts

(b) Describe the major points a property

- Trader
- Developer, and
- Investor

consider during the investment appraisal process

(c) Describe the circumstances when an investor would usually use

- A “floating interest” loan
- A “fixed interest” loan
- An “interest only” loan
- A “principal and interest” loan?

(d) Describe what the differences between property “valuations”, what is meant by the

- Cost to construct
- Replacement value
- Market value

What is included in these definitions and where are they used

The following data may be of assistance

Discount Rate	10%	15%
Y1	0.909	0.870
Y2	0.826	0.756
Y3	0.751	0.658
Y4	0.683	0.572
Y5	0.621	0.497
Y6	0.564	0.432
Y7	0.513	0.375
Y8	0.467	0.326
Y9	0.424	0.284
Y10	0.385	0.247

