UNIVERSITY OF SWAZILAND
FACULTY OF SOCIAL SCIENCE
DEPARTMENT OF ECONOMICS

MAIN EXAMINATION PAPER: MAY 2007

TITLE OF PAPER: PROJECT EVALUATION
COURSE CODE: ECON 305
TIME ALLOWED: THREE (3) HOURS

INSTRUCTIONS:

1. Answer Four (4) Questions, Two from Section A and Two from Section B.
2. All Questions Carry Equal Marks of 25 each in total.
3. The Relevant Annuity tables are provided

DO NOT OPEN THIS QUESTION PAPER UNTIL THE INVIGILATOR HAS GRANTED PERMISSION.

SECTION A

Question 1

Write explanatory notes on any five of the following concepts

i) The major differences between the NPV and IRR methods
ii) Contingent projects and mutually exclusive projects
iii) The Arrow-Lind theorem
iv) Unilateral and reciprocal externality
v) Numeric and Non-numeric models
vi) Project and programme [5 marks each]

Question 2

a) What are the main features of the Critical Path Method (CPM) as a project planning and control technique? [5 marks]

b) "Projects are a necessary ingredient to planning, and so is planning to projects", explain the logic of this statement. [5 marks]

c) What is the project life cycle? Discuss the various phases of the project life cycle and explain why the first stage is regarded as an integral part of project planning? [15 marks]

Question 3

a) Outline the main attributes of the replacement chain and the equivalent annual annuity methods. When would these methods recommended for use in project appraisal? [10 marks]

b) A company has an opportunity to invest in either project G or project H. The forecasted cash flows from the projects are as follows:

		Project G	Project H
Initial Outlay		E20, 000	E14, 300
Cash Inflows	Year 1	9,000	10,000
	2	12,000	8,000
	3	5,000	0

Using the replacement chain method and assuming a cost of capital of 10%, determine the project that is more attractive. Comment on your answer. [8 marks]

c) Why would the NPV and IRR methods sometimes give conflicting results on the decision to accept or reject a project proposal? [7 marks]

Question 4

a) A company makes a product which sells for E15, while the variable cost per unit is E5, which covers labour and material. The fixed cost total is E75, 000 per annum which covers all the overhead costs. Using Break Even Analysis:

i) Calculate the break even point and draw diagrams to show all the costs and break even point. [10 marks]

ii) Assume the company is anticipating to produce 12,000 units, would you advise it to make this investment? Justify your answer by determining either a loss or profit associated with this amount of investment. [5 marks]

b) What kinds of projects are best suited to break even analysis? What are the shortcomings of this technique? [10 marks]

SECTION B

Question 5

a) Define the concepts of risk and uncertainty. Outline the main differences between the two concepts.
[6 marks]

b) Discuss any four factors to which projects are most sensitive. Why would sensitivity analysis not be used to decide on the acceptability or otherwise of a project?
[10 marks]

c) Explain the relevance and importance of Scenario Planning. Highlight the main stages of this technique. [9 marks]

Question 6

a) Explain the Scitovsky Paradox and Kaldor-Hicks compensation principles
[6 marks]

b) Using the Maxi-min criterion, determine the decision to be taken under conditions of uncertainty given the following pay-off matrix:

		STATES OF NATURE		
		A	B	C
ACTIONS	1	20	40	180
	2	-40	100	220
	3	60	70	90

[9 marks]

c) Discuss the main criticisms of the Arrow-Lind theorem. [10 marks]

Question 7

a) What is an externality? Why is the concept of externalities so crucial in project evaluation? [6 marks]

b) Discuss and illustrate using diagrams where applicable four methods that could be used to solve the problem of externalities.
[12 marks]

c) Would it be desirable to eliminate all pollution? [7 marks]

Question 8

a) What are evaluation indicators? Distinguish between formative and summative evaluation. [8 marks]

b) What are the principal aims of evaluation? Explain the circumstances and timing at which internal or external evaluators could best be suited to conduct an evaluation. [10 marks]

c) The Sikhuphe International Airport is a project that would establish Swaziland's only airport that conforms to international aviation regulations. This being the case it was therefore not necessary to do neither a cost benefit analysis nor an evaluation of the project. Evaluate the validity of the statement. [7 marks]

APPENDIX C

PRESENT VALUE OF $1

n	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	.990	.980	.971	.962	.952	.943	.935	.926	.917	.909
2	.980	.961	.943	.925	.907	.890	.873	.857	.842	.826
3	.971	.942	.915	.889	.864	.840	.816	.794	.772	.751
4	.961	.924	.888	.855	.823	.792	.763	.735	.708	.683
5	.951	.906	.863	.822	.784	.747	.713	.681	.650	.621
6	.942	.888	.837	.790	.746	.705	.666	.630	.596	.564
7	.933	.871	.813	.760	.711	.665	.623	.583	.547	.513
8	.923	.853	.789	.731	.677	.627	.582	.540	.502	.467
9	.914	.837	.766	.703	.645	.592	.544	.500	.460	.424
10	.905	.820	.744	.676	.614	.558	.508	.463	.422	.386
11	.896	.804	.722	.650	.585	.527	.475	.429	.388	.350
12	.887	.789	.701	.625	.557	.497	.444	.397	.356	.319
13	.879	.773	.681	.601	.530	.469	.415	.368	.326	.290
14	.870	.758	.661	.577	.505	.442	.388	.340	.299	.263
15	.861	.743	.642	.555	.481	.417	.362	.315	.275	.239
16	.853	.728	.623	.534	.458	.394	.339	.292	.252	.218
17	.844	.714	.605	.513	.436	.371	.317	.270	.231	.198
18	.836	.700	.587	.494	.416	.350	.296	.250	.212	.180
19	.828	.686	.570	.475	.396	.331	.277	.232	.194	.164
20	.820	.673	.554	.456	.377	.312	.258	.215	.178	.149
21	.811	.660	.538	.439	.359	.294	.242	.199	.164	.135
22	.803	.647	.522	.422	.342	.278	.226	.184	.150	.123
23	.795	.634	.507	.406	.326	.262	.211	.170	.138	.112
24	.788	.622	.492	.390	.310	.247	.197	.158	.126	.102
25	.780	.610	.478	.375	.295	.233	.184	.146	.116	.092
30	.742	.552	.412	.308	.231	.174	.131	.099	.075	.057
40	.672	.453	.307	.208	.142	.097	.067	.046	.032	.022
50	.608	.372	.228	.141	.087	.054	.034	.021	.013	.009

n	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	.901	.893	.885	.877	.870	.862	.855	.847	.840	.833
2	.812	.797	.783	.769	.756	.743	.731	.718	.706	.694
3	.731	.712	.693	.675	.658	.641	.624	.609	.593	.579
4	.659	.636	.613	.592	.572	.552	.534	.516	.499	.482
5	.593	.567	.543	.519	.497	.476	.456	.437	.419	.402
6	.535	.507	.480	.456	.432	.410	.390	.370	.352	.335
7	.482	.452	.425	.400	.376	.354	.333	.314	.296	.279
8	.434	.404	.376	.351	.327	.305	.285	.266	.249	.233
9	.391	.361	.333	.308	.284	.263	.243	.225	.209	.194
10	.352	.322	.295	.270	.247	.227	.208	.191	.176	.162
11	.317	.287	.261	.237	.215	.195	.178	.162	.148	.135
12	.286	.257	.231	.208	.187	.168	.152	.137	.124	.112
13	.258	.229	.204	.182	.163	.145	.130	.116	.104	.093
14	.232	.205	.181	.160	.141	.125	.111	.099	.088	.078
15	.209	.183	.160	.140	.123	.108	.095	.084	.074	.065
16	.188	.163	.141	.123	.107	.093	.081	.071	.062	.054
17	.170	.146	.125	.108	.093	.080	.069	.060	.052	.045
18	.153	.130	.111	.095	.081	.069	.059	.051	.044	.038
19	.138	.116	.098	.083	.070	.060	.051	.043	.037	.031
20	.124	.104	.087	.073	.061	.051	.043	.037	.031	.026
21	.112	.093	.077	.064	.053	.044	.037	.031	.026	.022
22	.101	.083	.068	.056	.046	.038	.032	.026	.022	.018
23	.091	.074	.060	.049	.040	.033	.027	.022	.018	.015
24	.082	.066	.053	.043	.035	.028	.023	.019	.015	.013
25	.074	.059	.047	.038	.030	.024	.020	.016	.013	.010
30	.044	.033	.026	.020	.015	.012	.009	.007	.005	.004
40	.015	.011	.008	.005	.004	.003	.002	.001	.001	.001
50	.005	.003	.002	.001	.001	.001	.000	.000	.000	.000

PRESENT VALUE OF $1 (continued)

n	21%	22%	23%	24%	25%	26%	27%	28%	29%	30%
1	.826	.820	.813	.806	.800	.794	.787	.781	.775	.769
2	.683	.672	.661	.650	.640	.630	.620	.610	.601	.592
3	.564	.551	.537	.524	.512	.500	.488	.477	.466	.455
4	.467	.451	.437	.423	.410	.397	.384	.373	.361	.350
5	.386	.370	.355	.341	.328	.315	.303	.291	.280	.269
6	.319	.303	.289	.275	.262	.250	.238	.227	.217	.207
7	.263	.249	.235	.222	.210	.198	.188	.178	.168	.159
8	.218	.204	.191	.179	.168	.157	.148	.139	.130	.123
9	.180	.167	.155	.144	.134	.125	.116	.108	.101	.094
10	.149	.137	.126	.116	.107	.099	.092	.085	.078	.073
11	.123	.112	.103	.094	.086	.079	.072	.066	.061	.056
12	.102	.092	.083	.076	.069	.062	.057	.052	.047	.043
13	.084	.075	.068	.061	.055	.050	.045	.040	.037	.033
14	.069	.062	.055	.049	.044	.039	.035	.032	.028	.025
15	.057	.051	.045	.040	.035	.031	.028	.025	.022	.020
16	.047	.042	.036	.032	.028	.025	.022	.019	.017	.015
17	.039	.034	.030	.026	.023	.020	.017	.015	.013	.012
18	.032	.028	.024	.021	.018	.016	.014	.012	.010	.009
19	.027	.023	.020	.017	.014	.012	.011	.009	.008	.007
20	.022	.019	.016	.014	.012	.010	.008	.007	.006	.005
21	.018	.015	.013	.011	.009	.008	.007	.006	.005	.004
22	.015	.013	.011	.009	.007	.006	.005	.004	.004	.003
23	.012	.010	.009	.007	.006	.005	.004	.003	.003	.002
24	.010	.008	.007	.006	.005	.004	.003	.003	.002	.002
25	.009	.007	.006	.005	.004	.003	.003	.002	.002	.001
30	.003	.003	.002	.002	.001	.001	.001	.001	.000	.000
40	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
50	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

n	31%	32%	33%	34%	35%	36%	37%	38%	39%	40%
1	.763	.758	.752	.746	.741	.735	.730	.725	.719	.714
2	.583	.574	.565	.557	.549	.541	.533	.525	.518	.510
3	.445	.435	.425	.416	.406	.398	.389	.381	.372	.364
4	.340	.329	.320	.310	.301	.292	.284	.276	.268	.260
5	.259	.250	.240	.231	.223	.215	.207	.200	.193	.186
6	.198	.189	.181	.173	.165	.158	.151	.145	.139	.133
7	.151	.143	.136	.129	.122	.116	.110	.105	.100	.095
8	.115	.108	.102	.096	.091	.085	.081	.076	.072	.068
9	.088	.082	.077	.072	.067	.063	.059	.055	.052	.048
10	.067	.062	.058	.054	.050	.046	.043	.040	.037	.035
11	.051	.047	.043	.040	.037	.034	.031	.029	.027	.025
12	.039	.036	.033	.030	.027	.025	.023	.021	.019	.018
13	.030	.027	.025	.022	.020	.018	.017	.015	.014	.013
14	.023	.021	.018	.017	.015	.014	.012	.011	.010	.009
15	.017	.016	.014	.012	.011	.010	.009	.008	.007	.006
16	.013	.012	.010	.009	.008	.007	.006	.006	.005	.005
17	.010	.009	.008	.007	.006	.005	.005	.004	.004	.003
18	.008	.007	.006	.005	.005	.004	.003	.003	.003	.002
19	.006	.005	.004	.004	.003	.003	.003	.002	.002	.002
20	.005	.004	.003	.003	.002	.002	.002	.002	.001	.001
21	.003	.003	.003	.002	.002	.002	.001	.001	.001	.001
22	.003	.002	.002	.002	.001	.001	.001	.001	.001	.001
23	.002	.002	.001	.001	.001	.001	.001	.001	.001	.000
24	.002	.001	.001	.001	.001	.001	.001	.000	.000	.000
25	.001	.001	.001	.001	.001	.000	.000	.000	.000	.000
30	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
40	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000