



CEX7110 - Construction Project Appraisal

FINAL EXAMINATION - 2010/2011

Time Allowed: Three Hours

Date: 2011 - 03 - 21 (Monday)

Time: 1400 - 1700 hrs

Answer Any Four (04) questions.

Q1.

- (a) Explain the term 'Economic Assessment' in relation to the construction industry. (Marks 05)
- (b) Explain with the aid of examples how inflationary effects can be considered in the Net Present Value computations. (Marks 07)
- (c) Define the 'sinking fund deposit factor'. Explain its usefulness to people engaged in decision making with regard to investments. (Marks 06)
- (d) Explain the usefulness of concept of capital budgeting to a contractor who intends to acquire property, plant and equipment. (Marks 07)

Q2.

- (a) A firm wishes to expand its business activities by investing in a promising project. Two investment projects are being considered, each with an initial investment of Rs. 50,000,000 and producing profits as follows:

Year	Project A (Rs) '000	Project B (Rs) '000
1	6,000	8,000
2	11,000	14,000
3	9,000	8,000
4	10,000	3,000
5	4,000	2,000

Calculate the Average Annual Rate of Return and state with reasons which project should be selected. (Marks 06)

- (b) The cash flows of two projects are given below:

Year	Project A (Rs) 000'	Project B (Rs) 000'
Now	-6,000	-9,000
1	3,500	1,500
2	1,000	2,000
3	1,500	2,500
4	1,500	4,000
5	2,000	2,000
6	1,500	1,000

Calculate the payback periods for the above projects and state with reasons which project should be selected. (Marks 06)

- (c) Identify five advantages of 'payback' as a capital budgeting method. Also briefly outline three disadvantages of 'payback'. (Marks 07)
- (d) The inflation rate is 15% and a project is expected to generate a return of 20% per annum on nominal basis. Calculate the real return. (Marks 06)



- Q3. The following information relates to three possible capital expenditure projects. Because of capital rationing only one project can be accepted. The company estimates its cost of capital is 18%.

	Project A	Project B	Project C
Initial cost	200,000	230,000	180,000
Expected life	5 years	5 years	4 years
Scrap value expected	10,000	15,000	8,000
	Expected Cash Inflows		
End of year 1	80,000	100,000	55,000
End of year 2	70,000	70,000	65,000
End of year 3	65,000	50,000	95,000
End of year 4	60,000	50,000	100,000
End of year 5	55,000	50,000	0

- (a) Calculate the Payback period for each project. (Marks 04)
- (b) Calculate Average Annual Rate of Return for each project. (Marks 04)
- (c) Calculate the net present value of each project. (Marks 07)
- (d) State which project should be accepted giving reasons. (Marks 05)
- (e) Explain the factors management would need to consider in addition to the financial factors before making a final decision on a project. (Marks 05)

Q4.

(a)

ABC Ltd is preparing its capital budget for the year. A question has arisen as to whether or not to replace a machine with a new and more efficient machine. An analysis of the situation reveals the following, based on operations at a normal level of activity:

	Old Machine (Rs.)	New machine (Rs.)
Cost new	40,000	80,000
Book value	30,000	
Estimated physical life remaining	10 years	10 years
Depreciation per year	4,000	8,000
Labour cost per year	15,000	5,000
Material cost per year	350,000	345,000
Power per year	2,000	4,500
Maintenance per year	5,000	7,500

The expected scrap value of both the new and the old machine in 10 years' time is estimated to be zero. The old machine could be sold now for 20,000. The cost of capital and the investment cut-off rate for the ABC Ltd is 10%. Decide on the best option for the ABC Limited. (Marks 12)

- (b) Briefly explain the assumptions made in Discounted Cash Flow appraisal methods. (Marks 06)
- (c) Compare the advantages of 'Discounted cash flow methods' over 'Non discounting cash flow methods' in capital budgeting. (Marks 07)



Q5.

- (a) Justify the superiority of net present value (NPV) over the internal rate of return (IRR). (Marks 10)
- (b) A pantry cupboard manufacturer who is determined to expand his business is considering the purchase of several electrically operated machines and tools to reduce both costs of production and time taken for production. The total purchase will cost Rs. 1,695,000 and will have a life of 10 years. These will have only a negligible scrap value, which can be ignored. The machines and tools will result in Labour savings of Rs. 300,000 per year. You may ignore the gains resulting from increased volume of production. Compute the IRR of this investment. (Marks 15)

Q6

- (a) The ABC Ltd operates in the UK where investments in plant and machinery are eligible for 25% annual writing-down allowances on the written-down value using the reducing balance method of depreciation. The corporate tax rate is 35%. The company is considering whether to purchase some machinery which will cost £ 1 million and which is expected to result in additional net cash inflows and profits of £ 500,000 per annum for four years. It is anticipated that machinery will be sold at the end of year 4 for its written-down value for taxation purposes. Assume a one year lag in the payment of taxes. Calculate the net present value assuming a cost of capital of 10 percent. (Marks 18)
- (b) Discuss two popular methods adopted to determine optimal replacement age of a plant using Equivalent Annual Costs. (Marks 07)

