

Chapter wise Test (2005)
Investment Decision

Instructions

- All questions are compulsory.
- Test Duration will be 60 Minutes, starting from 11:00 AM to 12:00 noon
- 5 minutes reading time will be provided before 11, i.e. question paper will be shared by 10:55 AM.
- Share your scanned answer sheets by 12:10 on below link
<https://forms.gle/wLRZWiTvMELNpCeC6>

1. [5 Marks] ABC Ltd. is considering to purchase a machine which is priced at Rs. 5,00,000. The estimated life of machine is 5 years and has an expected salvage value of Rs. 45,000 at the end of 5 years. It is expected to generate revenues of Rs. 1,50,000 per annum for five years. The annual operating cost of the machine is Rs. 28,125, Corporate Tax Rate is 20% and the cost of capital is 10%. You are required to analyse whether it would be profitable for the company to purchase the machine by using;

- (i) Payback period Method
- (ii) Net Present value method
- (iii) Profitability Index Method

2. [8 Marks] NC Ltd. Is considering purchasing a new machine to increase its production facility. At present, it uses an old machine which can process 5,000 units of TVs per week. NC could replace it with new machine, which is product specific and can produce 15,000 units per week. New machine cost ` 100 crores and requires the working capital of ` 3 crores, which will be released at the end of 5th year. The new machine is expected to have a salvage value of ` 20 crores.

The company expects demand for TVs to be 10,000 units per week. Each TV sells for ` 30,000 and has Profit Volume Ratio (PV) of 0.10. The company works for the 56 weeks in the year. Additional fixed costs (excluding depreciation) are estimated to increase by ` 10 crores. The company is subject to a 40% tax rate and its after-tax cost of capital is 20%. The relevant rate of depreciation is 25 % for both taxation and accounts. The company uses the WDV method of depreciation. The existing machine will have no scrap value.

You are required to:

ADVISE whether the company should replace the old machine. (Decimal may be taken up to 2 units)

3. [8 Marks] Four years ago, Z Ltd. had purchased a machine of Rs. 4,80,000 having estimated useful life of 8 years with zero salvage value. Depreciation is charged using SLM method over the useful life. The company want to replace this machine with a new machine. Details of new machine are as below:

- Cost of new machine is Rs. 12,00,000, Vendor of this machine is agreed to take old machine at a value of Rs. 2,40,000. Cost of dismantling and removal



of old machine will be Rs. 40,000. 80% of net purchase price will be paid on spot and remaining will be paid at the end of one year.

- Depreciation will be charged @ 20% p.a. under WDV method.
- Estimated useful life of new machine is four years and it has salvage value of Rs. 1,00,000 at the end of year four.
- Incremental annual sales revenue is Rs. 12,25,000.
- Contribution margin is 50%.
- Incremental indirect cost (excluding depreciation) is Rs. 1,18,750 per year.
- Additional working capital of Rs. 2,50,000 is required at the beginning of year and Rs. 3,00,000 at the beginning of year three. Working capital at the end of year four will be nil.
- Tax rate is 30%.
- Ignore tax on capital gain.

Z Ltd. will not make any additional investment, if it yields less than 12% Advice, whether existing machine should be replaced or not.

Year	1	2	3	4	5
PVIF _{0.12, t}	0.893	0.797	0.712	0.636	0.567

4. [4 Marks] A company has Rs. 1,00,000 available for investment and has identified the following four investments in which to invest.

Project	Investment (Rs.)	NPV (Rs.)
C	40,000	20,000
D	1,00,000	35,000
E	50,000	24,000
F	60,000	18,000

You are required to optimize the returns from a package of projects within the capital spending limit if-

- (i) The projects are independent of each other and are divisible.
- (ii) The projects are not divisible.

5. [5 Marks] XYZ Ltd. is presently all equity financed. The directors of the company have been evaluating investment in a project which will require Rs. 270 lakhs capital expenditure on new machinery. They expect the capital investment to provide annual cash flows of Rs. 42 lakhs indefinitely which is net of all tax adjustments. The discount rate which it applies to such investment decisions is 14% net. The directors of the company believe that the current capital structure fails to take advantage of tax benefits of debt, and propose to finance the new project with undated perpetual debt secured on the company's assets. The company intends to issue sufficient debt to cover the cost of capital expenditure and the after tax cost of issue.

The current annual gross rate of interest required by the market on corporate



undated debt of similar risk is 10%. The after tax costs of issue are expected to be Rs. 10 lakhs. Company's tax rate is 30%.

You are required to calculate:

- (i) The adjusted present value of the investment,
- (ii) The adjusted discount rate and

Explain the circumstances under which this adjusted discount rate may be used to evaluate future investments.

