



## Life Cycle Costing of Infrastructures (1030)

P. Pages : 2

Time : Three Hours

Max. Marks : 100

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answer sheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.

1. Compare and contrast between the life cycle costing approach as against the approach based on construction cost only as applied to BOT projects being executed under the PPP's. Which approach is better for these type of projects? Justify with any case study. **20**
2. Enlist and explain in brief any 10 parameters which significantly affect the life cycle costing of infra projects. Explain the nature of the data necessary with these parameters and how this data needs to be documented. **20**
3. Detail out the various elements necessary for accounting the following costs for conducting LCC for a thermal power plant project, considering time value of money. **20**
  - i) Initial Investment Costs.
  - ii) Construction Costs
  - iii) Operation Costs
  - iv) Maintenance Costs.
4. Compare and contrast between the traditional methods and the modern methods used for analysing the cash flows needed to conduct the life cycle costing. When the concession period is 30 years, which methods should be preferred? Justify. **20**

5. Determine  $NPV_{(15)}$  and IRR for the following cash flows : 20

Year	Cash Inflow (Rs)	Cash Outflow (Rs)
0	--	3,00,000
1	--	10,00,000
2	--	12,00,000
3	5,00,000	7,00,000
4	10,00,000	5,00,000
5	15,00,000	3,00,000
6	18,00,000	1,00,000
7	10,00,000	

If expected IRR is 16% is the investment worthwhile? why?

6. Explain the various ways in which the Accounting rate of return (ARR) is worked out. Discuss the merits, demerits of each approach. 20
7. Write short notes on the following : 20
- i) Decision tree theory / methods.
  - ii) Advantages of fuzzy logic.
  - iii) Break – Even Analysis.
  - iv) Stochastic methods.
  - v) Modified Payback Period Method.

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