

**Time : 45 minutes**

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**Q1 8 Points**

An industrial firm can purchase a special machine for \$22,000. A down payment of 2,500 is required, and the balance can be paid in 5 equal year-end installments at 15% interest on the unpaid balance. As an alternative the machine can be purchased for \$19,000 in cash . If the firm's MAR is 15% determine which alternative should be accepted.

**Use annual worth on total investment approach.**

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**Q2 8 Points**

It is estimated that the annual heat-loss cost in a small power plant is \$5,200. Two competing proposals have been formulated that will reduce the loss. Proposal A will reduce heat-loss cost by 60% and will cost \$3,000. Proposal B will reduce heat-loss cost by 55% and will cost \$2,500. Assume that the interest rate is 10% and the plant will benefit from the reduction in heat loss for 10 years, what is your best decision?

**Conduct IROR analysis to support your decision.**

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**Q3 8 Points**

A needed service can be purchased for \$102 per unit. The same service can be provided by equipment that cost \$100,000 and that will have a salvage value \$25,000 at the end of 10 years. Annual operating expense will be \$5,500 per year PLUS \$31 PER UNIT. If the firm requiring this service has an MAR of 15% and 450 units are provided per year, what is your best decision ?

**Use B/C ratio as a basis for comparison and show your work.**

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