Dr. SNS RAJALAKSHMI COLLEGE OF ARTS AND SCIENCE (Autonomous)
Accredited by NAAC (Cycle-IV) with 'A+' Grade,
(Recognized by UGC & Approved by AICTE, New Delhi and Affiliated to Bharathiar University, Coimbatore)
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Subject: SUPPORTIVE / ALLIED MATHEMATICS-2: BUSINESS CALCULUS AND FINANCIAL COMPUTATION **Code:** 21UCR304

QUESTION AND ANSWER
UNIT: 4

1. A project is expected to provide the cash flows indicated below.would you invest rs.100000 in this project if the cost of capital is j1=7 ○/○

$$\begin{pmatrix} yearend & 1 & 2 & 3 & 4 \\ cashflow & 40000 & 25000 & 35000 & 30000 \end{pmatrix}$$

2. A project is expected to provide the cash flows indicated below.would you invest rs.100000 in this project if the cost of capital is j1=14 ○/○

$$\begin{pmatrix} yearend & 1 & 2 & 3 & 4 \\ cashflow & 40000 & 25000 & 35000 & 30000 \end{pmatrix}$$

3. An investor is presented with projects ,A with the following end of year cash flows.project requires an investment of Rs.200000. if j1=6 ○/○

$$\begin{pmatrix} YEAR & 1 & 2 & 3 & 4 \\ PROJA & 80000 & 70000 & 60000 & 35000 \end{pmatrix}$$

4. A company is considering whether or not to develop a mine site.It will take a capital investment of Rs. 14000000 to starat a mining production.The mine is expected to produce Rs. 3400000 of profits from the ore each year for 10 years.At that time (that is,at the end of 11 years) an expenditure of Rs. 6400000 will be needed to bring the site to environmental standards.If the company wishes to earn j1=20 ○/○what should they do?

5. A certain machine costs Rs. 25000 and lasts 6 years ,after which time it has a scrap value value of Rs. 5000.Annual maintenance costs are Rs 800.If money is worth 8 ○/○per annum,find the capitalized cost of the machine?

6. A machine costing Rs. 40000 is estimated to have a useful lifetime of 5 years and scrap value of Rs. 5000.prepare a depreciation schedule using the straight line method.

7. Prepare a depreciation schedule using the straight line method for the car costing Rs. 20000 is estimated to have a useful lifetime of 5 years and scrap value of Rs. 1000.

8. A machine costing Rs. 40000 is estimated to have a useful lifetime of 5 years and scrap value of Rs. 5000. Determine the rate of depreciation and construct the depreciation schedule for the machine of the above using constant percentage method.

9. An investment of Rs. 10000 returns Rs. 3000 at the end of years 1 and 2 and Rs. 3500 at the end of years 3 and 4.calculate the IRR?

10. An investment of Rs. 5 million is expected to produce the following cash-flows at each year end(in million)

$$\begin{pmatrix} YEAR & 1 & 2 & 3 & 4 \\ CASHFLOW & 1.25 & 2.00 & 2.50 & 0.75 \end{pmatrix}$$

11. A car costing Rs. 24000 depreciation 25 ○/○ of its value each year .Make a depreciation schedule for the first 3 years ;find the book value at the end of 5 years and the depreciation expense for the 6th year?

12. An investor is presented with alternative projects ,A and B with the following end of year cash flows.Each project requires an investment of Rs.200000.Which project would be chosen if j1=8 ∘/∘

$$\begin{pmatrix} YEAR & 1 & 2 & 3 & 4 \\ PROJA & 80000 & 70000 & 60000 & 35000 \\ PROJB & 30000 & 40000 & 40000 & 150000 \end{pmatrix}$$

13. For an investment of Rs. 7200 today and Rs. 27000 in 2 years time ,an investor expects to receive Rs. 24200 in 1 year and Rs. 10000 in 3 years.Determine the IRR?

14. An investor is presented with alternative projects ,A and B with the following end of year cash flows.Each project requires an investment of Rs.200000.Which project would be chosen if j1=6 ∘/∘

$$\begin{pmatrix} YEAR & 1 & 2 & 3 & 4 \\ PROJA & 80000 & 70000 & 60000 & 35000 \\ PROJB & 30000 & 40000 & 40000 & 150000 \end{pmatrix}$$

15. Machine A costs Rs.36000,will last 15 years ,and will have salvage value Rs. 4800 at that time.Its cost of maintenance is Rs. 3000 a year.Machine Z costs Rs. 40000, will last 20 years,and will have salvage value Rs. 4000 at that time.Its annual maintenance cost is Rs. 2400.If money is worth j1=11 ∘/∘,which machine should be purchased?

16. Calculate IRR : An investment of Rs. 20000 returns Rs. 6000 at the end of years 1 and 2 and Rs. 2500 at the end of years 3 and 4.?

17. The marginal cost function of a firm for a certain product is $5 + x + 2x^2$. Find the total cost and average cost function if the fixed cost is 200

18. The marginal cost function of a firm for a certain product is $5 + x + 2x^2$. Find the total cost and average cost function if the fixed cost is 100

19. The marginal cost function of a firm for a certain product is $10 + x^2 + 2x^3$. Find the total cost and average cost function if the fixed cost is 100