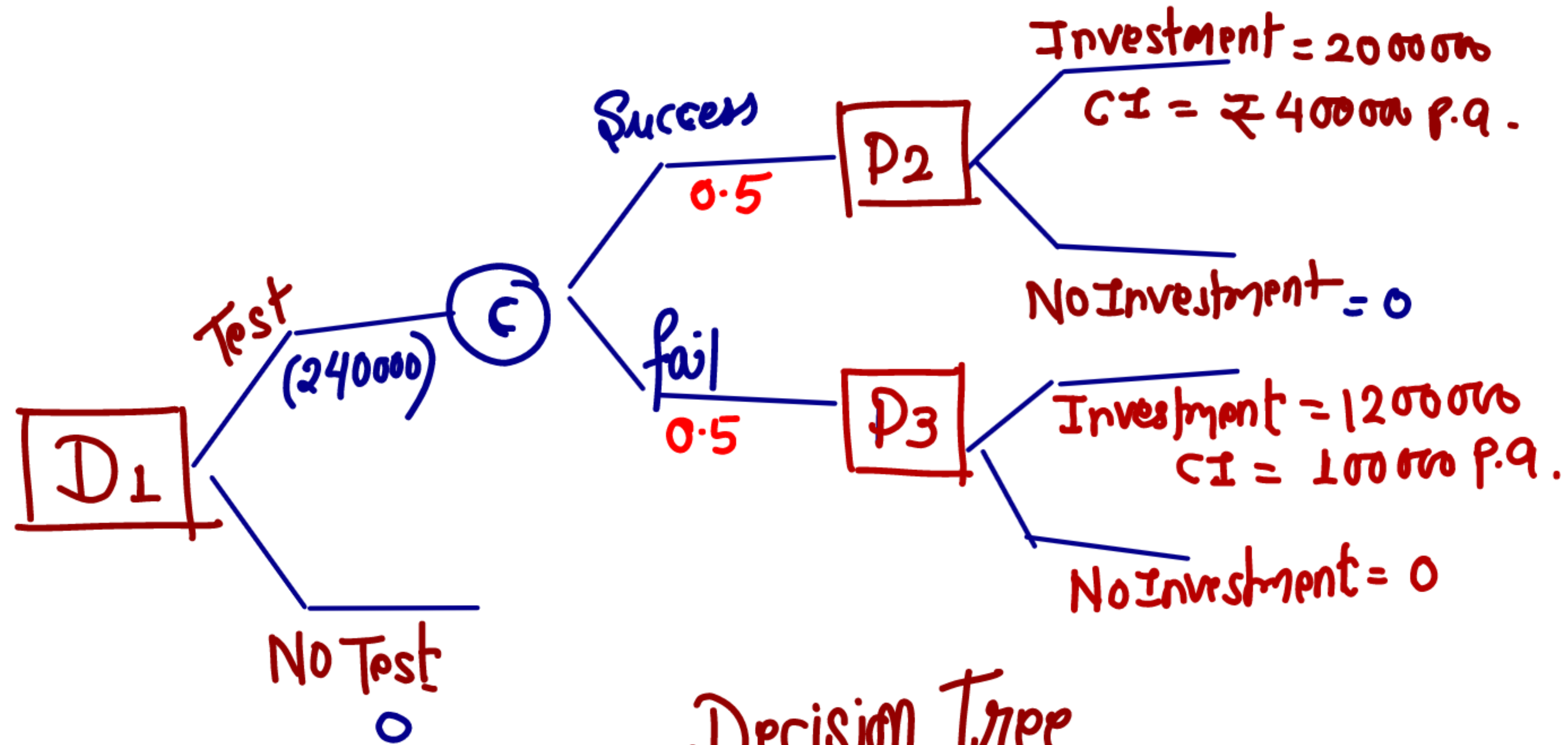


Question: 30

SM Test

L & R Limited wishes to develop new virus-cleaner software. The cost of the pilot project would be ₹2,40,000. Presently, the chances of the product being successfully launched on a commercial scale are rated at 50%. In case it does succeed, L&R can invest a sum of ₹20 lacs to market the product. Such an effort can generate perpetually, an annual net after tax cash income of ₹4 lacs. Even if the commercial launch fails, they can make an investment of a smaller amount of ₹12 lacs with the hope of gaining perpetually a sum of ₹1 lac. Evaluate the proposal, adopting decision tree approach. The discount rate is 10%.



Evaluation

• At decision point D₂

option 1 If Investment $NPV = \frac{400000}{10\%} - 200000 = 200000$

option 2 No Investment $NPV = 0$

Investment is better due to higher NPV

• At decision point 3

option 1 Investment $NPV = \frac{100000}{10\%} - 120000 = -200000$

option 2 No Investment $NPV = 0$

No Investment is better

Calculation of EMV at point C

$$(200000 \times 0.5) + (0 \times 0.5) = 100000$$

• At decision point D₁

option 1 Testing

$$NPV = (100000 - 24000) \\ = ₹ 76000$$

option 2 No Testing
 $NPV = 0$

Testing is better due to higher NPV

PART III Replacement Decision

3% 900

Eg

B.V. = ₹ 60000 Market Value of old = ₹ 63000

C.F.A.T. = 45000 p.a.

10 YEARS

Salvage Value of old = ₹ 2000

Cost of Machine = 100000

Life = 10 years

Salvage = 0

Dep = SLM

C.F.A.T. = 72000 p.y.

NEW Machine

Cost = ₹ 160000

Life = 6 YEARS

Salvage = ₹ 10000

Tax Rate = 30%

Cost of Capital = 10%

Whether old machine should be replaced or not?

160000

- 62100

97900

63000

- 900

62100

Statement showing Calculation of NPV

	YEAR	PVF (10%)	Amount	P.V.
<u>(A) Incremental Cash Outflow</u>				
Cost of New Machine	0	1.000	160000	160000
Sale of old Machine (Net of Tax) (W.N.1)	0	1.000	(62100)	(62100)
				<u>97900</u>
<u>(B) Incremental Cash Inflow</u>				
Incremental CFAT (72000 - 45000)	1-6	4.355	27000	117585
Incremental Terminal Value (10000 - 2000)	6	0.564	8000	4512
				<u>122097</u>
NPV (B-A)				<u>24197</u>

Machine should be replaced, due to positive NPV

W.N.1 Sale of old Machine

Sales Consideration = ₹ 63,000 - (i)

(-) Book Value = ₹ 60,000

Capital Gain = ₹ 3,000

Tax @ 30% = ₹ 900 - (ii)

Sales Consideration
(Net of Tax) ₹ 62,100 (i-ii)