

Advanced Capital Budgeting:

* List of unique questions with points to be remembered. (7th & 8th Edition books)

Question No.	TOPICS	points to be remembered.
Q-0A	Basic concept.	Discount rate is not given Assume 0% or any other %.
Q-1C	Inflation adjustment	Adjustment of inflation, as different year inflation is different
Q-1D	Inflation adjustment	working capital adjustment in cash flows and Tax treatment as it is paid in arrear.
Q-2A	C.E. factor.	• NPV in C.E approach RADR analysis (point-ii)
Q-2C	RADR	• Risk Index is "Beta" Return of firm is "Rm"
Q-2D	C.E. factor	• Use of PV factor in 4 th and 5 th year as Discount rate is different • ICAI Solution is wrong. • If time permit provide two alternative solution, otherwise correct solution,
Q-3A	Statistical technique	• Computation of SD • Computation of PE PV of inflow = NPV + outflow.
Q-3B	"	• Best & worst NPV • prob in case of dependent and independent

Q-3D	Statistical technique	<ul style="list-style-type: none"> AS life is not given calculate SD of cash flows.
Q-3.1	"	<ul style="list-style-type: none"> SD in case of independent cash flows. Hiller formula
Q-5A	Utilities	<ul style="list-style-type: none"> Expected utility = $\sum (\text{Utilities} \times \text{prob})$
Q-6A	Decision Tree	<ul style="list-style-type: none"> Expected NPV = Branch wise NPV \times Joint p.
Q-6B	Decision Tree	See solution once
Q-7B	Sensitivity Analysis	<ul style="list-style-type: none"> Annuity factor of 10% and I.R. given. Hence assume 10% adverse change in cash factor to analyse sens.
Q-7C	Sensitivity	<ul style="list-style-type: none"> Silent regarding method. Better to calculate % change in each factor where NPV becomes zero For life time = Discounted payback period
Q-7D	Sensitivity	<ul style="list-style-type: none"> change in cash flow = change in fixed cost Given sensitivity % is change in that factor where NPV becomes zero.

Q-8A	Scenario Analysis .	
Q-8B	Scenario \rightarrow minimax regret	Select that project which have minimum Regret out of maximum value.
Q-9A	Simulation	<ul style="list-style-type: none"> • cumulative probability • Range of Random No. • calculate NPV run wise <p>Hence.</p> <p>first 2 Random no. for 1st trial.</p> <p>It means:</p> <p>R.No-1 \Rightarrow for cash flows</p> <p>R.No-2 \Rightarrow for Life</p>
Q-10A	Real option	<ul style="list-style-type: none"> • Both question and solution are ambiguous. • calculate probability using 7 lakh rent income. • However, ignore 7 lakh for calculation of call value. <p>(ICAI solution)</p>
Q-10B	Real option	Simple put option Value under binomial model.
Q-10C	Real option	<ul style="list-style-type: none"> • Patent \Rightarrow Right of production • Value of Right \Rightarrow value of Call <p>• Variance is given = 26.8%</p> <p>• Hence use Black scholes model</p> <p>• In black Scholes we have to use SD in decimal.</p>

		<ul style="list-style-type: none"> • correct value is = $\frac{26.8}{100 \times 100}$ • But ICAI used = $\frac{26.8}{100}$ <p><u>Recommendation:</u> prefer wrong solution of ICAI (i.e. $\frac{26.8}{100}$) in calculation of d_1.</p>
Q-10D	Real option	Value of abandonment means value of put
Q-11A	Adjusted NPV	<p>Adjusted NPV = Base NPV + PV of Taxes on interest</p> <p>Discount rate:</p> <p>⇒ For Base NPV = k_e</p> <p>⇒ For PV of Taxes on interest</p> <p>(i) k_d pre-tax if debt amt is fixed</p> <p>(ii) k_0 if debt amount vary.</p>
Q-11B	Adjusted NPV	<ul style="list-style-type: none"> • Nothing unique • ICAI first alternative solution is different but no issue. our solution is <u>second alternative solution</u> which is in line with our concept.

Q-12A	Replacement decision	<ul style="list-style-type: none"> • Have a look on Replacement decision treatment. • All cash flows should be incremental / change.
Q-12D	Replacement decision	<ul style="list-style-type: none"> • Calculate Dep on total value including installation and consultation.
Q-12E	Replacement	<ul style="list-style-type: none"> • In fact it is unequal life project where decision depends upon ⇒ Annual equal cash flows / NPV = $\frac{PV \text{ of } CF / NPV}{PVIFA}$
Q-13A	Replacement at optimal point	<ul style="list-style-type: none"> • Calculate Annual equal cost of new machine • Calculate annual running cost of old machine and take decision. ⇒ This solution is little different from current study mat solution but i recommend old solution of ICAI which we did in class -
Q-13B	Replacement cycle.	<p>calculate NPV for different cycle</p> <ul style="list-style-type: none"> ⓐ Replace every year ⓑ Replace in every 2y etc.

(iii) calculate equivalent annual equal NPV to compare.

Q-13C Investment at optimum point

- life is not given. Hence assume perpetual life.
- Current NPV is not comparable with NPV at 1y end / 2y end.
- Hence do PV to take decision.