

Engineering Economy

Final EXAM 2016-2017
Second Semester

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① Depreciation is defined as ?

② In 2005 index was 1027 for a cost £400\$, in 2012 the cost become 102174\$, what was the index in 2012 ?

③ If the Number of years was 5 with cost 70000 . at salvage value Zero , then fill the following table:

year	D_k	BV at Beginning of year	BV at the end.
year 1			
year 3			

④ For a project with capital investment 155000 with 12 years. annual income 45000 & annual expenses 5000 & a salvage value at year 12 equal 11000 , using straight line method find the following if you were given that 40% tax income:

- 1] BTCF for the 3rd year?
- 2] ATCF for the 4th year?

⑤ For the following, All of them inflows except one :

- (a) operating benefit.
- (b) Taxable income.
- (c) Salvage value.
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⑥ Two Machines with the following DATA:

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	used Machine.	New Machine
capital investment	16000	50000
annual income.	9000	3000
salvage value	5000	10000
Life time.	3	6

* find the net PW for the new machine?

⑦ → Compare between PW for the used & new machine & what are the values for each PW?

⑧ If the cost was 10000, with annual income 5000 for 10 years & salvage value 3000, What is the AW?

⑨ If the fixed cost is 40000, variable cost 20 per unit & the unit is to be sold with 60\$ for each. Find the Number of units at Breakdown?

⑩ If the first unit took 8000 hours & the sixth unit 900 hours → what is the learning curve slope?

⑪ If the cost was 11481000. with annual forever 2150000, what is the payback period?

12) To double the money in the future for 14 years. what is the interest rate?

13) If you were given an interest rate 13% per year, with continuous compounding, what is i_{eff} ?

14) What is the best i_{eff} for:

- (a) 12.8% compounded bi-monthly.
- (b) 13.8% compounded monthly.
- (c) 10.8% compounded semi-annually.
- (d) 13% compounded once.

15) Fill the table with the given informations:

principal cost = 200000
interest = 10%

year	interest amount	principal
1		
2		
3		
4		

16) For $MARR = 9\%$

	A	B	C	D
IRR	11%	10%	9%	13%

* What is the Best project To choose?

* * * * *

Best of Luck.