

اسم المدرس: ٩. سياء مرعون

الاسم والرقم الجامعي:

Second Exam in IE 341, Eng. Economy

Time: 50 min.

Date: May. 3, 2015

ANSWERS (USE CAPITAL LETTERS)

5 6

Q1) Using the present worth (PW) method and a MARR = 20% per year, is the investment proposal shown in the table below acceptable?

Year End	0	1	2	3
NCF (\$)	-5,000	2,000	2,000	4000

A) Yes, and PW = \$370 B) Yes, and PW = \$1,476 C) No, because PW = -\$1,414 D) No, because PW = -\$612

Q2) What is the PW, when i = 15% per year, of \$3,500 per year, starting one year and continuing forever; and \$6,000 in year five?

A) \$23,670

B) \$32,050

C) \$26,316

D) \$62,500

Q3) What is the value of future worth for a project that has initial investment of \$110,000 and that saving \$32,000 per year for the next six years, and be worth 70,000 in the end of year six, If the MARR is 20%,?

B) \$7658

C) \$9087

D) \$8765

Q4) A bond with a face value of \$4,000 and a coupon rate of 14%, paid annually, if a yield is 15%, assume that the bond will mature in 10 years, a person purchasing the bond should be willing to pay:

A) more than \$4983 B)more than \$3800 C) less than \$4983 D)less than \$3800

Q5) Assume a MARR of 10% per year and a useful life for each alternative of six years that equal the study period. The rank order of alternatives from least capital to greatest capital is Do Nothing < A < C < B. The last comparison to be made is

	Δ (A-Do Nothing)	Δ (C-A)	Δ (????)	
ΔCapital	-\$15,000	-\$2,000	6 11	
Investment	صادرمر	שו ותו	الكتاا	
ΔAnnual	4,000	900		
Revenues				
ΔAnnual	الكـ(1,000-اتـال)	115000	لطلة	
Expenses				
ΔMarket value	6,000	-2,220		
ΔIRR	12.7%	10.9%		

A) Δ (C-B)

B) Δ (A-B)

C) Δ (B-C)

 $D) \cdot \Delta (B-A)$

Q6) Which alternative should the company select with coterminated assumption, MARR=9%?

	Alt. X	Alt. Y	
Capital Investment	\$500,000	\$250,000	
Uniform Annual Savings	\$131,900	\$40,690	
Useful life (years)	5	10	

A) Alt. X because the PW=\$13,045

B) Alt. X because the FW= \$20,071

C) Alt. X because the FW= \$30.897

D)Alt.X because the AW=\$3,354

Q7) An initial investment of \$1,000 will generate annual net revenues of \$400 for 12 years and have no salvage value. If the MARR is 25%, Find the external Rate of Return ERR%, if ε =MARR.

A) 10.5%

B) 25%

C) 26.16%

D) 29.22%

Q8) What is the Simple payback period for this investment if the MARR is 18% per year and the capital investment is \$85,000?

End of year	1	2	3	4	5
Savings	\$45,000	\$45,000	\$30,000	\$40,000	\$46,000

A) 3 Years

B) 5 Years

C) 1 Year

D) 2 Years

Q9) You can buy a machine for \$100,000 that will produce a net income, after operating expenses, of \$10,000 per year. If you plan to keep the machine for four years, what must the market (resale) value be at the end of four years to justify the investment? i=15%

A) \$217,073

B) \$100,000

C) \$124,966

D) \$49,934

E) \$200,000

Final answer question (5 marks)

For the following mutually exclusive alternatives the study period is 10 years and the MARR =12% per year answer the following questions

	A	В	C	D	
Capital	11,000	16,000	13,000	18,000	
Investment					
Annual Costs	250	300	400	100	
Market Value	1,000	1,300	1,750	2,000	
PW(12%)	-12,090	-17,276	????	-17,921	

Q10) the PW of alternative C equals .- 14,696.50

Q12) The first comparison in the incremental analysis should be $\Delta(????? - ????)$... $\Delta(...)$

Q13) write down the equation of the IRR $\Delta(D-B)$

-2000 + 200 (PA , (7, 16)) XO

Q14) Rank order the alternatives from the best to the worst (if any)

Q15) Draw the cash flow diagram for the Δ (C-A)

