

كلية الهندسة
قسم هندسة النفط
الزمن : ثلاث ساعات 3
أستاذ المقرر: أ. وليد بن صالح
رقم الطالب:

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Question 1: (10 points).

Define the following terms:

1. POT
2. Intangible assets
3. R-ratio in EPSA
4. DCFROR
5. MEC in EPSA agreements
6. IRR
7. Cost Oil
8. Posted Price of Crude Oil
9. Gross Revenue
10. Variable costs

Question 2: (10 Points).

Calculate the future sum of money after 15 years if the principal is equal to \$1,000,000 and the nominal interest rate is 7%. Assuming:

- A. Simple interest.
- B. Yearly compounding interest.
- C. Interest is compounded 3 months a year.
- D. Interest is compounded continuously.

Question 3: (20 Points).

Given below the net cash flow schedules for two projects "A" and "B", Your Company is to invest into **only one** of the two projects. Which project should you recommend to your management? Assume a full-year discounting and use the R.O.I, PV (10%), POT, ROR, and PIR techniques to justify your choice.

Year	1 st	2 nd	3 rd	4 th	5 th	6 th
NCF (MM\$), Project A	-17 (Investment)	6	5	5	4	4
NCF (MM\$), Project B	-12 (Investment)	5	5	4	2	

Question 4: (20 Points).

Pentland is a medium size prospect between NOC and Waha Oil Company with recoverable reserves **400 million barrels** of oil and **200*10⁹ scf** of gas. It is estimated that this development will cost about **\$750 million** including bonus, with an annual operating expenditure of **\$45 million**. Production is expected to start in 2009. Calculate the yearly and the cumulative net cash flow for the first and the second Parties up to 2012, assuming a tax-royalty agreement with the following terms:

Tax Rate	Royalty
65%	16%
Annual Depreciation	Annual Depletion
10%	Estimate by 'Cost per unit basis' method
Charges:	
Gas export charges	Oil export charges
£0.40/ 10 ³ scf	\$0.60/bbl
Prices:	
Gas price	Oil price:
\$2.5 per 10 ³ scf	\$14 per barrel

Year	Oil Prod. (bopd) 10 ³	Gas Prod. (scfd) 10 ⁶	Exploration & appraisal \$ Millions	Development wells \$ Millions	Platform Development \$ Millions	Export infrastructure \$ Millions
2002	-	-	5			
2003	-	-	10			
2004	-	-			1	
2005	-	-		8	20	
2006	-	-		16	200	11
2007	-	-		0	255	101
2008	-	-		8	30	16
2009	86	44		34		23
2010	170	86		16		
2011	170	86				
2012	170	86				