



Q.3 Fill in the blanks [5]

- (a) ----- represents a weighted average of possible NPV's of all outcomes from an event in which weights reflect probabilities of outcomes.
- (b) Petroleum Economists assist in making -----
- (c) Some fields which have been producing for decades are being ----- using technologies.
- (d) Any investment proposal may be considered as an activity which initially ----- money and later ----- money.
- (e) For any oil and gas project, initially the cash flow will be dominated by -----.

**SECTION –B**  
**[40 Marks]**

Q.4 Given the cash flows of the four projects, A, B, C, and D, and using the Payback Period decision model, which projects do you accept and which projects do you reject with a three year cut-off period for recapturing the initial cash outflow? [8]

Projects	E	F	G	H
Cost	\$40,000	\$250,000	\$75,000	\$100,000
Cash Flow Year One	\$10,000	\$40,000	\$20,000	\$30,000
Cash Flow Year Two	\$10,000	\$120,000	\$35,000	\$30,000
Cash Flow Year Three	\$10,000	\$200,000	\$40,000	\$30,000
Cash Flow Year Four	\$10,000	\$200,000	\$40,000	\$20,000
Cash Flow Year Five	\$10,000	\$200,000	\$35,000	\$10,000
Cash Flow Year Six	\$10,000	\$200,000	\$20,000	\$0

Q.5 Buffalo Industries has three potential projects all with an initial cost of \$2,000,000. The capital budget for the year will only allow Buffalo industries to accept one of the three projects. Given the discount rates and the future cash flows of each project, which project should they accept based on NPV? [8]

<i>Cash Flows</i>	<i>Project M</i>	<i>Project N</i>	<i>Project O</i>
<i>Year one</i>	\$500,000	\$600,000	\$1,000,000
<i>Year two</i>	\$500,000	\$600,000	\$800,000
<i>Year three</i>	\$500,000	\$600,000	\$600,000
<i>Year four</i>	\$500,000	\$600,000	\$400,000
<i>Year five</i>	\$500,000	\$600,000	\$200,000
<i>Discount Rate</i>	6%	9%	15%

Q.6 Describe the Depletion Method for finding Capital Allowances. [8]

Q.7 Company ABC plans to invest in project C which have an initial investment of \$500,000. If the operating cash inflows to be generated from project C will be \$250,000. What is the profitability index for project C? [8]

Q.8 A. Write short notes on: [8]  
i. Over run cost ii. Underrun cost iii. Fixed OPEX iv. Variable OPEX

OR,

B. Answer the following: [2+2+4]  
i. Define the term Decommissioning.  
ii. What are the ways to defer decommissioning?  
iii. Name the external factors that influence the oil and gas industry.

### SECTION –C [40 Marks]

Q.9 Find the IRR of an investment having initial cash outflow of \$250,000. The cash inflows during the first, second, third and fourth years are expected to be \$55,200, \$90,000, \$75,100 and \$50,400 respectively. Assume that r is 20%. [20]

Q.10 (a) Considering EMV as the economic indicator, you have to take a decision for selecting a project for your company between projects A and B. The details of the projects are given below: [10+10]

- (i) The outcome from project A is 500,000 if it is successful, otherwise loss of 50,000. The probability of success is 0.2 for project A.
- (ii) For project B, the probabilities of success are 0.2 and 0.1 and the outcomes are 40,000, - 20,000, 150,000 and – 200,000 ( All outcomes in \$).

(b) Calculate the project's net cash flow of the project. The details of the project in any particular year are given as below:

Production = 20MMbbl ; Oil Price = \$ 100/bbl; Royalty Rate = 10%;  
Tax Rate = 50% ; CAPEX = \$200 Million, OPEX = \$20 Million (Assume  
that previous CAPEX was \$100 million with 20% straight line capital  
allowance).

Calculate the net Cash flow for just 1 year of the project.

OR,

(a) Define the term Risk and Hazard.

[2+18]

(b) Describe the various types of risks in E & P industry. Also describe how  
should these risks should be mitigated.

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