

Name:  
Enrolment No:



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**Online End Semester Examination, December 2020**

**Course: Chemical Project Economics**  
**Program: B. Tech. CE+RP**  
**Course Code: CHCE 4003**

**Semester: VII**  
**Time 03 hrs.**  
**Max. Marks: 100**

**SECTION A**

- 1. All questions are compulsory**
- 2. Each question carries 5 marks**
- 3. Assume suitable and necessary data if required and Justify**

Q 1	The net income available to stockholders is \$ 200 and total assets are \$ 1050 then return on common equity is a. 0.250 b. 0.190 c. 0.809 d. 0.235	5	CO4
Q 2	Which of the following costs are not considered in inventory decisions a. Carrying Costs b. Ordering Costs c. Shortage Costs d. Machining Costs	5	CO5
Q 3	If Z-Score is less than 1.8, firm prospects is: a. Bankrupt b. Can't Say c. Financially Weak d. Financially Strong	5	CO3
Q 4	An infinitely lived stream is called a. Perpetuity b. Annuity	5	CO2

	c. Margin d. Arbitrage		
Q 5	The value of the asset by the end of useful service is:  a. Fund value b. Equity value c. Salvage value d. Market value	5	CO2
Q 6	Economic Efficiency is also called as  a. Technical Efficiency b. Productivity c. Worthiness d. Profit	5	CO1
	<b>SECTION B</b>		
	<b>1. All questions are compulsory</b> <b>2. Each question carries 10 marks</b> <b>3. Assume suitable and necessary data if required and justify</b>		
Q 7	How the economic efficiency of a complex refinery can be improved?	10	CO1
Q 8	A Company has purchased an equipment whose first cost is Rs 1,00,000 with an estimated life of 8 years. The estimated salvage value of the equipment at the end of its lifetime is 20,000. Determine the depreciation and book value for the 5 <sup>th</sup> year using sum-of-the-years-digits method of depreciation and also by sinking fund method with an interest rate of 12%, compounded annually.	10	CO2
Q 9	What are the different types of cost indexes? An evaporator of area 200 m <sup>2</sup> was purchased in 2016 at a cost of \$6,00,000. In 2020, another evaporator of area 50 m <sup>2</sup> was added. What is the cost of second evaporator (in \$)? Assume the cost of evaporator scales as (capacity) <sup>0.54</sup>	10	CO3
Q 10	What are the different types of financial ratios? Explain their uses and limitations	10	CO4

Q 11	Explain in detail the Bill of Materials in Product Manufacturing	10	CO5
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**SECTION C**

- 1. Answer any one Question**
- 2. Each Question carries 20 Marks.**
- 3. Assume Suitable and necessary data if required and Justify**

Q 12	<p>The salt content of a middle-eastern crude oil (API gravity 24.2) was found to be 60 PTB(pounds per thousand barrels). In order to ship and market this oil, it is necessary to install a desalting unit in the field, which will reduce the salt content to 15 PTB. This upgrading in the quality of oil-in terms of an acceptable PTB-could realize a possible saving of 0.1 \$/bbl in the shipping cost of the oil. Assume the following: The crude oil desalter has a design capacity of 120,000 bbl/day. The current capital investment of the desalting unit is estimated to be \$ 3.0 million plus another \$2.0 million for storage tanks and other facilities. Service life of equipment is 10 years with negligible salvage value, while the operating factor = 0.95. The total operating expenses of the desalter are estimated to be \$10/1,000 bbl. The annual maintenance expenses are 10% of the total capital investment. Evaluate the economic merits of the desalter.</p> <p align="center">OR</p> <p>Explain the flow of information through an accounting system with a neat sketch</p> <p>The following information applies to a company on given date. Determine current ratio, cash ratio and working capital for the company on the given date</p> <table border="1" data-bbox="259 1459 1185 1852"> <tr> <td>Long Term debts</td> <td>\$2,600</td> </tr> <tr> <td>Debts due within 1 year</td> <td>\$2,000</td> </tr> <tr> <td>Accounts payable</td> <td>\$3,300</td> </tr> <tr> <td>Machinery and equipment (at cost)</td> <td>\$11,000</td> </tr> <tr> <td>Cash in Bank</td> <td>\$4,100</td> </tr> <tr> <td>Prepaid rent</td> <td>\$400</td> </tr> <tr> <td>Government Bonds</td> <td>\$4,000</td> </tr> </table>	Long Term debts	\$2,600	Debts due within 1 year	\$2,000	Accounts payable	\$3,300	Machinery and equipment (at cost)	\$11,000	Cash in Bank	\$4,100	Prepaid rent	\$400	Government Bonds	\$4,000	<p align="center"><b>20</b></p> <p align="center"><b>10</b></p> <p align="center"><b>10</b></p>	<p align="center"><b>CO4</b></p>
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		Social Security taxes payable	\$340			
		Reserve for depreciation	\$700			
		Reserve for expansion	\$2,200			
		Inventory	\$2,600			
		Accounts Receivable	\$2,700			

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