## UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, April 2018

Course: CHEG452 – Chemical Project Economics Semester: VIII

**Program: B. Tech Chemical Engineering (RPC)** 

Time: 03 hrs. Max. Marks: 100

Instructions: 1. Kindly attempt the paper section wise. 2. Assume suitable data wherever necessary.

## 3. The notations used here have the usual meanings.

	Attempt <u>all</u> the	e quest	ions.	ı		
S. No.					Marks	CO
Q 1	Discuss in brief about the activity ratio.					CO <sub>3</sub>
Q 2	A company wants to set up a reserve which will help it to have an annual equivalent amount of Rs. 10,00,000 for the next 20 years towards its employees welfare measures. The reserve is assumed to grow at the rate of 15% annually. Find the single-payment that must be made now as the reserve amount.				05	CO1
Q 3	Explain about the payback period method of prof	Explain about the payback period method of profitability evaluation.				CO <sub>4</sub>
Q 4	Estimate the fixed capital investment for a 1500 ton/day ammonia plant using the turnover ratio of 0.65. The current gross selling price of ammonia is \$150/ton. The plant will operate at a 95% stream time.				05	CO2
	SECTION B (4 Attempt <u>all</u> the		<i>'</i>			
Q 5	Initial purchase cost (Rs.) 3,00 Annual operating 20 maintenance cost (Rs.)	xer - 1 0,000 0,000 5,000	Mixer - 2 2,00,000 35,000 70,000 5	ws:	15	CO1
Q 6	Explain in detail about the cost factors considered in the estimation of total product cost.				15	CO2
Q 7	Prepare a balance sheet for KDP Pvt. Ltd. from the following ledger balances as on 31st March 2018. Find out the current ratio and cash ratio.				15	CO3

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ii) Explain in brief about the following: (a) Rate of return on investment (b) Capitalized cost profitability						
A heat exchanger has been designed and insulation is being considered for the unit.					20	CO4
The insulation can be obtained in thicknesses of 0.025, 0.051, 0.076, or 0.102 m. The following data have been determined for the different insulation thicknesses.						
Details 0.02	25 m 0.0	)51 m	0.076 m	0.102 m		
energy saved 8	38	102	108	111		
t for installed ulation (Rs.) 5,60	7,0	07,000	7,77,000	8,05,000		
	0	10	10	10		
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any capital utilized in this type of investment. The exchanger operates for 300 days/yr.	