		Reg. 110							
		Question Pa	aper Code: 59920						
	B.E./I	B.Tech. DEGREE I	EXAMINATION, SEF	2020					
		El	ective						
		Chemical	Engineering						
	15	UCH920 – PROCI	ESS PLANT UTILITII	ES					
(Use of Steam table and Psychrometry chart is permitted)									
		(Regula	ation 2015)						
Dur	ation: One hour			Maximum: 30 N	A arks				
		PART A - (6	$6 \times 1 = 6 \text{ Marks}$						
	(A	nswer any Six of t	he following Question	ns)					
1.	Hardness of water is due to the presence of salts of								
	(a) Potassium	(b) Chlorine	(c) Magnesium	(d) Boron					
2.	Which of the following	g is not a use of rev	erse osmosis?		CO1- R				
	(a) Treatment of industrial waste water to remove heavy metal ions								
	(b) Separation of sulfites and bisulfites from paper and processing industry effluents								
	(c) Treatment of municipal water to remove inorganic salts								
	(d) Treatment of industrial effluents to decolorize it								
3.	The working pressure of	of boiler is		CC)2- R				
	(a) 25 psi	(b) 50 psi	(c) 75 psi	(d) 100 psi					
4.	4. The properties of water are arranged in the steam tables as function of								
	(a) Pressure		(b) Temperature						
	(c) Pressure and tempe	rature	(d) None of the abo	ve					
5.	What kind of energy or	utput is obtained from	om a 'Steam Power Pl	ant'?	CO2- R				
5.	What kind of energy or	utput is obtained from	om a 'Steam Power Pl	ant'?	CO2- R				

(b) Sound energy (c) Electricity (d) Thermal energy

(a) Heat energy

6.	One tonne of refrigeration is equal to									
	(a) 21 kJ/min	(b) 210 kJ/min	(c) 420 kJ/min	(d) 620 kJ/min	1					
7.	Which of the following	ng refrigerant is highl	y toxic and flammable?	C	O3- R					
	(a) ammonia	(b) carbon dioxide	(c) sulphur dioxide	(d) freon-12						
8.	The pressure of centrifugal compressor is CO4									
	(a) 0.8 to 12 bar	(b) 12 to 700 bar	(c) 0.8 to 24 bar	(d) 0.1 to 450	bar					
9.	For summer air con than	ditioning, the relative	e humidity should not be	less C	O4- R					
	(a) 40%	(b) 60%	(c) 75%	(d) 90%						
10.	For minimum work,	CO5- R								
	(a) adiabatic	(b) isothermal	(c) isochore	(d) isobar						
	PART – B (3x 8= 24 Marks)									
(Answer any Three of the following Questions)										
11.	Explain about the chemical softening.			CO1- U	(8)					
12.	With a neat sketch, Explain about the fluidized bed boiler			CO2- U	(8)					
13.	Describe the working	CO3- U	(8)							
14.	Explain about the imp	CO4- U	(8)							
15.	Compare the perform	CO4- U	(8)							