CIRO Study Guide Question Answers

Answer the following questions based on NORMAL Conditions in the Sample CIRO Screen.
What is the superheat at the compressor inlet? 7°
What is the temperature differential between the oil cooler oil inlet and the oil outlet? 35°
What is the temperature differential between the oil cooler coolant outlet and the oil outlet? 51°
What is the superheat at the compressor outlet? 85°
What is the theoretical discharge temperature of the compressor under these conditions? 180°
What is the pressure drop from the compressor discharge to the condenser outlet? 3 psi
What is the excess pressure due to non-condensables in the system? 0
What is the condition of the refrigerant leaving the oil cooler? Saturated
How much horsepower is being developed by the compressor motor under the normal conditions? 262.6
What is the instantaneous Kw demand developed by the compressor motor under normal conditions? 210KW
If power is $0.17 per kwh, how much does it cost to run the motor under normal conditions for one hour? $35.70
For one day (24 hours)? $856.80 For one week? $5997.60 For a 5000 run-hour year? $178,500.00

Answer the following questions based on ABNORMAL Conditions in the Sample CIRO Screen.
What is the superheat at the compressor inlet? 7°
What is the temperature differential between the oil cooler oil inlet and the oil outlet? 38°
What is the temperature differential between the oil cooler coolant outlet and the oil outlet? 59°
What is the oil cooling coolant? Ammonia liquid
What is the superheat at the compressor outlet? 96°
What is the theoretical discharge temperature of the compressor under these conditions? 220°
What is the pressure drop from the compressor discharge to the condenser outlet? 3 psi
What is the excess pressure due to non-condensables in the “abnormal” system? 0 psi
What is the condition of the refrigerant leaving the oil cooler? Saturated
How much horsepower is being developed by the compressor motor? 302 hp
What is the instantaneous Kw demand developed by the compressor motor? 242
If power is $0.17 per kwh, how much does it cost to run the motor under normal conditions for one hour? $35.81
For one day (24 hours)? $859.44 For one week? $6016.08 For a 5000-run-time year? $179,050.00

What is the excess cost per hour for running poorly? $5.44 For 24 hours? $130.56
For one week? $913.92 For a 5000 run-hour year? $27,200.00
What would happen to the condenser sump temperature if the fans were not running if you assume the wet bulb temperature is the same as under NORMAL conditions? Go up
What would happen to the condenser sump water temperature if the pump was not running if you assume the wet bulb temperature is the same as under NORMAL conditions? Go down
What might happen to the condenser sump water temperature if the coils were sealed up significantly? Go down
What might be going on that causes the higher condensing conditions? Scaled tubes

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