أجب عن جميع الأسئلة الآتية

1-a Find the heat transferred per square meter of R-134 . A water cooled condenser. The tube

are equipped with fins from R-134. A side only. Coefficient of extended surface 3.5, cupper

tube wall thickness 1.5 mm means water temperature 20°C. Overall coefficient of heat
transfer for water 4000 and for R-134 A 1000 w/m^{2}°C.   (6)

1-b Define the specific heats, And what is the relationship between The specific heats.

2-a Find the conduction heat transfer through a hollow sphere?   (6)

2-b Determine the rise of heat transfer for atmospheric air at 358K flowing at a velocity of 3
m/s across a 0.5 m-diameter, 10 m long duct whose temperature is 373 K.   (6)

3-a Defined the refrigeration and what is the application of A/C?   (6)

3-b Calculate (i) relative humidity. (ii) humidity ratio. (iii) dew point temperature. (iv) density
and (v) enthalpy of atmospheric air when the DBT is 35°C, WBT is 23°C and the barometer
reads 750 mm Hg.   (6)

4-a Catalogue for R-12 compressor states that compressor cooling capacity is 53.5 kw at - 6°C
evaporating temperature. 38°C , condensing temperature and 18°C suction temperature
saturated liquid leaves the con dens-er. Compute the compressor cooling load for – 4°C
actual suction temperature.   (6)

4-b Define the following and write the symbol and units (i) Dry bulb temperature (ii) Wet bulb
temperature (iii) Relative humidity (iv) Humidity percentage (v) sensitive heat (vi) Latent
heat.   (6)

5-a An ammonia compressor with a displacement of 80 L/sec operates in a system at
evaporating and condensing temperatures of -6°C and 43°C respectively. The volumetric
efficiency 0.72. Suction gas enters the compressor with 16°C superheat. Determine The
refrigeration capacity in Tons and Kw and the compressor power in Kw.   (6)

5-b What are the basic processes in conditioning of air.   (6)