**Birzeit University**

**Mechanical & Mechatronics Engineering Department**

**Heat Transfer ENME 431-1**

**Quiz 2 Form A**

**Instructor : Dr. Afif Akel Hasan 1st. semester 2020/2021**

**Closed book quiz, formula sheet is given.**

**Question 50 points**

Given temperature distribution in a hollow cylinder with heat generation at steady state;

 Conductivity = 20W/m.K, Given inner radius r1 =0.80m and outer radius r2=1.5 m

1. Determine temperature of inner surface r =0.8 m [4]
2. Determine the heat flux at inner surface r =0.8 m [10]
3. Determine heat transfer per unit length from outer surface [10]
4. Determine the specific heat generation W /m3 in the cylinder. [10]
5. What is the maximum cylinder temperature, and at where does it occur? [10]
6. Sketch temperature versus r, and flux versus r [6]

**Formula sheet**

 

 



 







 

 

  