LOGM 634 - Homework Set #2

Due 13 January 2017

# From the Ebeling text - Exercise 4.1

For a system having a Weibull failure distribution with a shapre parameter of 1.4 and a scale parameter of 550 days, find the following

1. The life
2. The standard deviation
3. The design life for a reliability of

# From the Ebeling text - Exercise 4.20

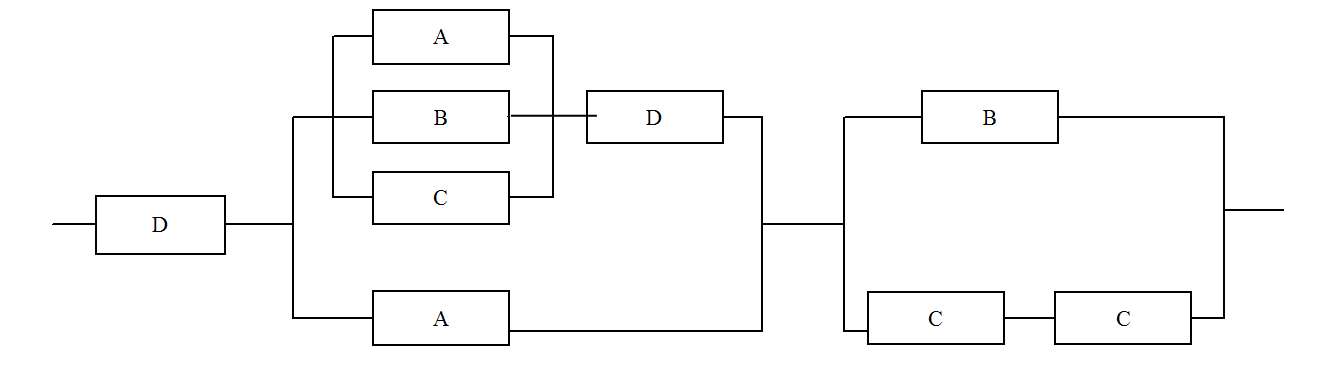
A rotor used in an AC motor manufactured by the Toole N. Di Company has a time failure that is lognormal with an found to be 3600 operating hours and a shape parameter equal to 2.

1. Current preventative maintenance practices require the rotor to be repplaced every 100 operating hours. Determine the probability that a rotor will survive the 100 hr.
2. If at the end of 100 operating hours, the maintenance department neglects to replace the rotor, what is the probability that it will survive until the next scheduled replacement (assume that that it has not failed at 100 hr).
3. If the rotor is operating after 200 hr, should it be replaced?
4. From the above analysis, what can you say about the hazard rate and the preventative maintenance replacement policy?

# Summary Exercise (20 Points)

Use the system relational block diagram shown in Figure 1 and the component distributions to answer the following questions:

1. What is the probability of system failure within 1200 hrs?
2. What is the probability of system failure within 200 hrs, given it has lasted for 1000 hours?



Reliability Block Diagram for Exercise 0