Exam 2:

Brittle and Ductile Material Static Failure Theories

Maximum Normal Stress Theory Modified Mohr Columb Mohr

Maximum Shearing Stress Theory Distortion Energy Theory

von Mises Stresses

what causes failure--distortion or volume change? expression for von Mises Stresses

How do you handle stress risers?

Fatigue (dynamic loadings)

What is High Cycle Fatigue (how many cycles?) What is Low Cycle Fatigue

> How do you analyze parts that have subjected to low cycle fatigue What is the assumption about the failure mode?

 $S_f = aN^b$ Can you make an S-N Diagram?

What are Marin factors How do you determine Marin factors? Explain how size impacts fatigue? Explain how d_{eq} is determined Explain how reliability impacts fatigue Explain how temperature impacts fatigue? How does loading impact fatigue?

What are theoretical stress concentrations? How do you determine them What are notch sensitivities? What are fatigue stress concentration factors?

What is a Goodman Diagram--can you construct one? What is a Soderberg Diagram--can you construct one? What is the yield line? What are alternating and mean stresses?

What are alternating and mean von Mises stresses

Can you list all the steps needed to go completely solve a fatigue problem? Can you find factors of safety from a Goodman Diagram? Can you accurately determine stresses at critical sections?

What is a fluctuating load?

What is a fully reversed load?

Are there differences in the way stress concentrations are handled between fully reversed and fluctuating?