

Questions for the final examination

2020/2021 academic year

Diagnostics of Mechatronic Systems

01. Please, give a definition of maintenance! Describe the various stages of the maintenance process in case of general machinery!

02. How to classify the idea of deterioration in case of general machinery (way to damage, effect, reasons, root cause, formation and appearance of damage)?

03. Please, give a definition of the Coulomb type of friction! Where are the limitations of this law? Please, give some examples!

04. What does the mechanical wear depend on in case of general machinery? Please, give some examples!

05. What is a fretting corrosion?

06. Please, give a summary of the "run to failure" and the "rigid time cycle" types of maintenance! What are the "pros & cons" of them?

07. Please, explain the individual work phases during the usage of condition parameters! Please, give an example!

08. What are the basic idea and the main steps of the RCM (Reliability Based Maintenance)? Where is it most widely applicable?

09. Please, give a definition of TPM! Where is it most widely applicable?

10. What is a "risk matrix"? Please, give an example!

11. Please, explain the following terms used in vibration diagnostics: RMS, Peak, Peak-Peak, Period, Frequency, Spectrum, Time Signal!

12. Please, analyze the various options to be used to fix an accelerometer!

13. Please, explain the term of resonance and give some examples!

14. What are the general features of unbalance? Please, give a definition of static unbalance and explain it in details, using a simple sketch!

15. Describe the balancing procedure using a vibration analyzer!

16. What are the general reasons of misalignment? Explain the alignment procedure by using a simple sketch!

17. What are the main types of the shaft misalignment? Please, draw a simple sketch!

18. How to use the strobe light during the balancing procedure? What are the general conditions for the use of a strobe light? Please, draw a simple sketch!

19. Please, explain the reasons of the damage of the coupling during a strong misalignment!

20. Please, describe the ranges of the electromagnetic waves! Where shall be the X-Ray (Röntgen) in the spectrum? Please, give a short summary of the NDT (Non Destructive Testing) method, using X-Ray equipment!

Compiled by:
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