

## **Examination questions for *Acoustical Applications***

1. Basic acoustic quantities
2. Levels and decibels – calculations with decibels
3. Elementary sound sources
4. Radiation characteristics of sound sources
5. Measurement of sound power
6. Measurement of directional characteristics – directivity index
7. Materials for room acoustics, measurements
8. Measurement of sound insulation, transmission loss
9. Mechanical vibrations, oscillations of mass on spring, without and with damping
10. Forced vibrations
11. Hook's law, Young's modulus, Poisson's ratio
12. Types of waves in structures
13. Speed of sound in structures
14. Sources of noise in gasses and liquids – principles of control
15. Sources of noise in structures – principles of control
16. Airborne and liquid-borne noise transmission – principles of control
17. Structure-borne noise transmission – principles of control
18. Active noise control – principle and application
19. Methods of sound quality assessment
20. Visualization of ultrasonic field
21. Methods and instruments used for ultrasonic testing of materials and for determination of material properties
22. Medical ultrasonic diagnostics and power ultrasound applications
23. Signal processing on ultrasonic waves (surface waves, acousto-optics)