

Set of questions for the diploma examination for undergraduate students
of Management and Production Engineering (bachelor degree; 7semester course)

(valid from the academic year 2017/2018)

1. The model of the needs satisfaction process according to J. Dietrych: stages, characteristics, examples of applications.
2. Optimisation in technique: definition, methods, examples.
3. Friction in technique: classification, characteristics, examples.
4. Stresses of machine parts: classification, characteristics, methods of determination, examples.
5. Strength conditions. Loads on machine parts: classification, characteristics, examples.
6. Elements of construction drawings (projections, sections, dimensioning): principles, characteristics, examples.
7. Tolerance and fits: definitions, classification, characteristics, examples.
8. Construction, technological, technical and operational documentation: characteristics, components, examples of application.
9. Engineering and tooling plastics and materials: classification, characteristics, examples of application.
10. Phase transformations in the Fe-C system: construction, characteristics, ways of use in technology.
11. Measurement of geometrical and electrical quantities: techniques, tools, examples.
12. Measurement errors: classification, characteristics, causes, examples.
13. Typical machine components (axles, shafts, couplings, bearings, gears, brakes): classification, characteristics, examples of use.
14. Drive units of machinery and equipment: classification, characteristics, examples.
15. Connections of machine parts and components: classification, characteristics, examples.
16. Computer aided design methods and tools (CAD, CAM, CMMs): characteristics, examples.
17. Major operational problems/tasks in an industrial enterprise.
18. Reliability and durability of technical objects: definitions, how to determine and interpretation, examples of application in operational practice.
19. Damage of technical objects: classification, characteristics, causes, ways of prevention, methods of elimination.
20. Machine and processes diagnostics: definitions, methods and tools.



21. Production system, production process, technological process: characteristics, examples.
22. Production control methods and tools: classification, characteristics, examples.
23. Manufacturing processes and techniques: classification, characteristics, examples.
24. Control systems and control systems: definitions, structures, characteristics, examples.
25. Flexible manufacturing systems: classification, characteristics, examples.
26. Effects and consequences of automation and robotisation.
27. Databases and knowledge bases: classification, structure, characteristics, purpose, examples.
28. Logistics systems in a company: classification, characteristics, examples.
29. Methods and tools in production logistics: classification, characteristics, examples.
30. Quality management concepts: ISO 9001, TQM - characteristics, examples.
31. Quality management methods and tools: classification, characteristics, examples.
32. Integrated management system: definition, components, examples.
33. Ergonomic design of machinery, equipment, workstations: methods, examples.
34. Hazards in the working environment: classification, characteristics, ways to reduce.
35. Sources and effects of environmental pollution and methods of environmental protection: classification, characteristics, examples.
36. Environmental protection (protection of the atmosphere, hydrosphere, lithosphere, waste management, reclamation and revitalisation of degraded areas): methods, examples.
37. Environmental management methods and tools: classification, characteristics, examples.
38. Enterprise management methods: classification, characteristics, examples.
39. Organisational and decision-making structures in an enterprise: classification, characteristics, examples.
40. Business activity: principles of undertaking and conducting, ways of financing, classification and characteristics of commercial law companies.
41. Methods of protecting intellectual property. Copyright. Patent. Utility models and industrial designs. Industrial designs. Trade marks.
42. Business costs: classification, characteristics, examples.
43. State fiscal policy: classification, characteristics, examples of tools.
44. State monetary policy: interest rates, role of the central bank in the economy.
45. Unemployment: classification, characteristics, causes, measurement of the phenomenon.
46. Methods of motivating employees: classification, characteristics, tools, examples.