

**Set of questions for II cycle of studies students for Diploma Examination  
of diploma semester obligatory since 11.04.2019**

**Technical Fundamentals of Architectural Design**

1. Systematize material solutions for the fronts of the buildings. Give one chosen example.
2. Types of glass used in modern times because of sunlight protection, heat, security and visual effects.
3. Give examples of house heating. Explain a given example.
4. Describe different ways of room ventilation. Tell how the choice of ventilation influences the shape of architectural solutions.
5. Compare design assumptions for energy saving and passive buildings.
6. Building foundation in extreme ground conditions. Give one example of foundation on a cliff, on a low-bearing soil, infill building.
7. Building foundation below the level of groundwater. Describe an example of solutions in the context of construction and waterproofing.
8. What is the assessment of technical status of the building? Who does that and what for?
9. Of covering auditoriums, sport halls, swimming pools. Give an example of the used construction in one of them.
10. Designing the load -bearing structures of concourses. Give the key elements of a concourse and their functions.
11. Describe the way of functioning of prefabricated reinforced concrete floors and concrete slabs. Give the span for which they are applicable?
12. Reinforced concrete floors in the building with the board -slab type of construction. Describe the assumptions for designing such buildings. What parameters and stress define the cross-section of the central column?
13. Characterize the post and lintel slab. Describe the work of spandrel beam in the mechanics of materials context (types of tensions, section optimization, etc.)
14. Grid as a construction system. Describe the issue and give examples.
15. High and high-rise buildings. Describe the solutions for their construction system according to their height.
16. Describe the issue of the building stability. What parameters and elements of the building define its dimensional stiffness?
17. Expansions in building constructions and their influence on architectural building design. What is the risk of no expansions?
18. Coatings – definition, the essence of work, sketches. Give examples of its realization.
19. Explain the essence of work of reinforced concrete floors. Give examples of system resolution.
20. Describe the differences in work of a static flat trusses and space trusses.
21. Roof hanging design. Definition, divisions, examples of realization.
22. Energy performance of the building, Give the factors affecting energy demand. Refer to the modern requirements.

23. Thermal protection of the buildings. The latest requirements and main rules for partitions design.
24. The main rules for designing non-transparent partitions in the buildings because of condensation.
25. Heat bridge, concept definition, classification and examples of bridges in the buildings. Describe a given example of minimalising the heat bridge.