

- 1.1 What was the new building material of the 18th century? What were the main conditions, inventions that have made possible the use of it as a structural material?
 - 1.2 What was the typical structure/outlook of a factory of the late 18th and 19th century? Draw a sketch with marking the different building elements (section or simple axonometric view)!
 - 1.3 Name the first industrialized construction around middle of the 19th century, using standardized elements! (name, purpose, time, author, used materials)
 - 1.4 Name the exhibition hall with the biggest span at the end of the 19th century! (name, purpose, time, author, used materials) What was the bearing structure? Draw a sketch (section)!
 - 1.5 What was the invention that enabled the constant, reliable drive of machines, instead of water or wind? (inventor's name, purpose, time)
 - 1.6 How did the invention of reliable drive of machines change the location possibilities of workshops, factories?
 - 1.7 Who was the most determining civil engineer of the 19th century, the designs of whom revolutionised public transport and modern engineering? Name with at least one example!
 - 1.8 Who was the engineer of the 19th century inventing the usage of steel cables that enabled considerable span of bridges? Name with at least one example!
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- 2.1 What was the new building material of the beginning 20th century? What were the main advantages of its wide-spread use? Name at least one patent/system for the new material!
 - 2.2 What was (among others) the most important invention that enabled mass production in factories? Where and when was it first used in big scale?
 - 2.3 Name one important example of the new material and new forms of „structural architecture“ of the 1920s, 1930s (great span structure)! Draw a sketch (section or simple axonometric view)! (name, purpose, time, author, used materials)
 - 2.4 Who was the most determining architect in the USA before World War II forming the “Model” factory idea? Name at least one example of his work!
 - 2.5 Name the first real modern industrial building in Europe, of a young architect (name, purpose, time, author, used materials)! What were the structural innovations, the main changes from the symbolic architectural language?
 - 2.6 Name the first multifunctional building/ “plaza” of the world (before World War II)!
 - 2.7 Name the first real modern industrial building in Europe, of a young architect (name, purpose, time, author, used materials)!
 - 2.8 Who is considered America's first truly modern architect (beginning of the 20th century)? Name at least one example of his work! What were the main innovations?
 - 2.9 What were the art movements that influenced the modern architecture of the early 1900s before Bauhaus? Name some architects!
 - 2.10 How did a typical industrial building of the early 1900s look like? Draw a sketch and name the elements of construction (section or simple axonometric view)!
 - 2.11 What is the most important principle of spatial organization/arrangement of production and storage buildings starting from the beginning of the 20th century? Name at least one important example! Draw a simple schematic floorplan!
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- 3.1 What was the invention that enabled roofing and natural lighting of great uninterrupted production surfaces? (structure, material, form, author)
 - 3.2 Name the first example of modern office/administrative building type of the 1950s: high-rise, vertical part with offices, everything else in the horizontal part! (name, purpose, time, author)
 - 3.3 Name at least one important example of the „cool boxes“ of the 1960s or 1980s! (name, purpose, time, author, used materials, main advantage)
 - 3.4 Name at least one important industrial building of the „high-tech“ architecture of the 1980s! (name, purpose, time, author, used materials) Draw a sketch (section or simple axonometric view)!
 - 3.5 Name at least one industrial building of the 1990s when architects started to experiment with new materials, where materials were used in a new unconventional way! (name, purpose, time, author, used materials)

- 3.6 Name some different tent structures of the 1970s; cables, light surface structures! (name, purpose, time, author, used materials)
- 3.7 Name some examples of spatial truss structures and domes beginning from the 1930s to 1970s! (name, purpose, time, author, used materials)
- 3.8 What was the reason of appearance of light structures after World War II? Name some building types with author!
- 3.9 What were the characteristics, premises of high-tech architecture in 1960s, 1970s?
- 4.1 Who was one of the most determining architects in the USA in the middle of the 20th century, the "master" of more world famous architects of high-tech architecture? Name at least one example of his work!
- 4.2 Who was the most determining architect in Germany, a co-founder of important architect's school of the fifties and sixties? Name at least one example of his work!
- 4.3 What can be the solutions for decreasing the weight of a bigger span main girder? Draw some sketches (axonometric view)!
- 4.4 Compare two possible solutions for a main girder: the solid webbed/ plate girder and the lattice girder/ truss! (aspects of decision, advantage, disadvantage)
- 4.5 What is the most common supplementary element for foundations of precast reinforced concrete columns? Draw a sketch (section, axonometric view)!
- 4.6 What is the most common simple lightweight construction for external walls of simple industrial buildings? Draw a sketch (axonometric view)!
- 4.7 Why is it not common in today's hall building praxis to build material sparing shell structures of reinforced concrete?
- 4.8 What can be the aspects of decision (advantage, disadvantage) when choosing the material of bearing structure steel or reinforced concrete for the same span!
- 4.9 What are the principle possibilities of roofing bigger spans? When thinking of economic solution for simple, not accentuated tasks, which one of these is the most common structure nowadays? Why?
- 5.1 Draw an axonometric picture of the typical (middle) section of the following structure: prefabricated reinforced concrete structure with 18 metre span, short main girder system covered with wide span reinforced concrete roof elements! Name the elements!
- 5.2 Draw an axonometric picture of the typical (middle) section of the following structure: prefabricated reinforced concrete structure with 18 metre span, long main girder system covered with great reinforced concrete roof elements! Name the elements!
- 5.3 Draw an axonometric picture of the typical (middle) section of the following structure: steel structure with 18 metre span, steel frame and purlins covered with trapezoidal sheet metal roof elements! Name the elements!
- 5.4 Draw an axonometric picture of the typical (middle) section of the following structure: steel structure with 18 metre span, steel frame covered with great trapezoidal sheet metal roof elements (without purlins)! Name the elements!
- 6.1 What are the requirements of adequate lighting of workplaces?
- 6.2 Why are colours important for the workplace environment?
- 6.3 Compare two possible solutions of natural lighting; side lights - skylights! (aspects of decision, advantage, disadvantage)
- 6.4 What kind of longitudinal skylight would you choose for a 4-bay plant formed of the structure according to 5.1? Draw an axonometric picture!
- 6.5 What kind of longitudinal skylight would you choose for a 4-bay plant formed of the structure according to 5.2? Draw an axonometric picture!
- 6.6 What kind of longitudinal skylight would you choose for a 4-bay plant formed of the structure according to 5.3? Draw an axonometric picture!
- 6.7 What kind of longitudinal skylight would you choose for a 4-bay plant formed of the structure according to 5.4? Draw an axonometric picture!
- 6.8 What are the main characteristics and advantages of "variable spaces, areas" in schools, offices, workplaces?
- 6.9 Name some main guidelines for a "good" contemporary office-like working environment!

- 7.1 What is the typical architectural appearance of a light industry plant today (span, storeys...)?
- 7.2 Which are the characteristics of heavy industry? What is the typical architectural appearance of a heavy industry plant (span, storeys...)?
- 7.3 How can a special requirement of technology influence the architectural concept? Show at least one example requirement – construction. Draw a sketch (section, axonometric view)!
- 7.4 What are the components of a technology plan?
- 7.5 List the industrial revolutions until today describing the main characteristics of each with only a few words!
- 7.6 What can be alternative solutions for future food production?
- 8.1 Compare the advantages and disadvantages of brown/rust zones originating after stopping production, closing companies!
- 8.2 Name some revitalization examples, where important elements/buildings were kept, and completed with new buildings! (previous function, new function, name, time, author)
- 8.3 Name some revitalization examples with cultural functions! (previous function, new function, name, time, author)
- 8.4 Name some larger scale revitalization examples (thematic parks)! (previous function, new function, name, time, author)
- 8.5 Name some large scale developments for socio-economical purposes, of nationwide, or region-wide importance! (previous function, new function, name, time, author)
- 8.6 What was the invention of engineers of IPARTERV honoured with the Auguste Perret Prize? What was the essence of the invention?
- 9.1 What does the concept “open-plan office” mean? Name at least one typical example (name, purpose, time, author)!
- 9.2 What does the concept “Bürolandschaft” (Office-Landscape) mean? Name at least one important office building example!
- 9.3 Name at least one important exceptional, experimental office building of the 1960s or 1970s! (name, purpose, time, author) Draw a sketch (plan, section or simple axonometric view)! What was its main concept, or innovation?
- 9.4 What is the “Cubicle” and the “Cubicle farm” in offices?
- 9.5 What does “deskless office” mean in offices?
- 9.6 What does “touchdown place” mean in offices?
- 9.7 What are the possible basic units (minimum, optimum, maximum) for the module system of office buildings?
- 9.8 How does the requirement of providing underground parking places influence the structural system of a metropolitan multi-story office building?
- 9.9 What is the acceptable minimum and the recommended optimum (m) for clearance of open plan offices?
- 9.10 How does the requirement of flexible office floorplan influence the building constructions?
- 10.1 There may be different strategies for energy conscious/environmentally conscious future workplaces. What are the characteristics, principles of high-tech design approach? Name at least one typical example (name, purpose, time, author)!
- 10.2 There may be different strategies for energy conscious/environmentally conscious future workplaces. What are the characteristics, principles of smart-tech design approach? Name at least one typical example (name, purpose, time, author)!