

**ENTRANCE EXAM TEST**

**example**

**Conditions:**

- You will only need a pen and a sheet of paper for the test.
- Please write your name and surname at the top of each sheet of paper.
- The test will take 50 minutes to complete.
- The test consists of 10 open-ended questions. Please answer each question with several meaningful sentences. Use legible handwriting to ensure good readability in photograph/scan, as well as on a screen. If appropriate, you may include simple drawings.
- Answer to each question is worth a maximum of 10 points.
- The minimum sum of points is 40 to pass the entrance exam test.

**Questions:**

1. Hydraulics - fundamentals: explain principle of conservation of energy in flow of real liquid and write appropriate equation
2. Hydraulics - open-channel flow: discuss rating curve and describe how it can be predicted using Chezy formula
3. Hydrology - fundamentals: summarize basic hydrological parameters, define them and describe their units
4. Hydrology - rainfall and runoff: define rainfall and runoff, explain their mutual relation, discuss application of rainfall-runoff models in hydrology
5. Water management: explain basic water purification techniques and how they are exploited in water processing/treatment plants
6. Water management: describe types of wastewater and summarize major parts of wastewater treatment plant
7. Hydraulic structures: explain function of navigational lock and describe its parts
8. Environmental engineering: discuss role of Darcy's law in groundwater hydrodynamics, describe quantities mutually related in Darcy's formula
9. Environmental engineering: summarize basic physical properties of soil and explain hydraulic conductivity
10. Environmental engineering: discuss role of water drainage and types of drainage structures