### Questions from the "PAL Prüfungsbuch" Atomic structure, chemical bond and periodic table of the elements – unbound tasks

#### All tasks are to be scored with 10 to 0 points

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Technische Universität München Analytical Research Group PD Dr. Thomas Letzel; PD Dr. Johanna Graßmann

U4:

- 1) Give a short description of two essential characteristics each of atomic bond and ionic bond
- 2) State **three** typical examples for each of the two types of chemical bonding

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# U5:

A chemical element with the atomic number 9 has the molar mass M = 19.0 g/mol. Thereto complete the following table.

Number of protons	Number o neutrons	of	Number of electrons		Periodic number	
Metal or non- metal	E h	Electronegativity high or low		Reactive	or inert	
Main group number	A b	Acid former or base former		Element	name	



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# Exam Questions – Part 1 - unbound tasks Atomic structure, chemical bond and periodic table of the elements

U6:

- 1) Using the example of water describe the so called hydrogen bridge bond
- 2) State two characteristics of water that are influenced by hydrogen bridge bonds

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U9:

Describe and identify the element with the atomic number 19 and a molar mass M = 39 g/mol

- 1) Outline an atom of this element according to Bohr's atomic model
- 2) Characterize the element by stating the adjoining data

1. Bohr's atomic model:	2. Characterization:
	Number of protons
	Number of neutrons
	Periodic number
	Main group number
	Element symbol

#### U10:

- 1) Explain the term "polarized atomic bond"
- 2) State differences between ionic bond and polarized atomic bond

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