Appendix 12b

REPORT

of dissertation for the acquisition of:

educational and scientific degree " **doctor** "	X
scientific degree **"Doctor of Science"**	
	the true is indicated by the sign "X"

Author of the dissertation:

MSc	Eng.	Monika	Yanulova	Petrunova	45 Primary School Sofia
academic position	scientific degree	name	middle name	last name	workplace

Topic of the dissertation:

Interactive systems for training and testing

Scientific area:

4	Natural sciences, mathematics, and computer science
code	name

Professional area:

4.6	Informatics and Computer Sciences (Informatics)
code	name

Scientific specialty:

Informatics

The report was written by:

Prof.	Dr.	Tasho	Angelov	Tashev	TU-Sofia
academic position	scientific degree	name	middle name	last name	workplace

1. Meeting the minimum requirements under the Regulations:

A) The candidate meets the minimum requirements	20 points	X
B) The candidate doesn't meet the minimum requirements	0 points	
		one of the answers given is marked with the sign "X"

It is mandatory to fill in if answer B is marked. The publication activity of the candidate is analyzed. The response of the results achieved (quoted) is analyzed.
PhD student Monika Petrunova has three publications, presented in one journal and two international conferences, indexed in Scopus. All three publications are co-authored with her scientific supervisors, with her being the first author in all of them. The publications are related to the results from the individual chapters

of her dissertation. One of the publications was printed in volume 60, issue 6 of the JCTM journal, indexed in internationally recognized scientific databases (Scopus) with a Q3 factor and earns her 45 points. The other two publications were published in the proceedings of the ICAI 2021 and ICAI 2025 conferences, indexed in IEEE Xplore. They earn her 2 * 18 = 36 points. In total, the PhD student has 81 points, compared to the required 30 points according to the Minimum Requirements of ZRASRB and the Regulations for Awarding Scientific Degrees and Occupying Academic Positions at UCTM.

2. The relevance of the topic of the dissertation:

A) The topic is relevant and new (there are no known results on the topic by other authors)	8 points	X
B) The topic is relevant and results from other authors are known	6 points	
C) The topic is not relevant, but results from other authors are known	2 points	
D) The topic is not relevant and no results from other authors are known	1 point	
E) The topic does not correspond to the level of dissertation	0 points	
		one of the answers given is marked with the sign "X"

The evaluation of the relevance of the dissertation must be substantiated
The dissertation proposes a comprehensive automated analysis system that transforms raw data from online tests into objective assessments and provides a clear diagnosis of students' shortcomings. The implementation of universal formulas and scripts optimizes the administrative work of teachers, eliminating subjective errors and ensuring compatibility with the Bulgarian regulatory framework. Their relevance is expressed in the successful overcoming of the technological barrier to effective distance learning, providing ready-made tools for control and qualitative improvement of the learning process. In real practice, this means faster assessment, more precise feedback for students and higher pedagogical efficiency of digital platforms.

3. Type of research:

A) Theoretical	4 points	
B) Applied	4 points	
C) Theoretical with application elements	4 points	X
D) It does not correspond to the level of dissertation	0 points	
		one of the answers given is marked with the sign "X"

The level of research must be substantiated if answer D is marked.

4. Objectives of the research:

A) Realistic and of scientific and / or applied interest	8 points	X
B) Realistic, but not of scientific and / or applied interest	3 points	

C) Unattainable (unrealistic)	0 points	
		one of the answers given is marked with the sign "X"

Objectives must be specified. The type of the set objectives must be justified.
The aim of the dissertation is to optimize the online testing process by combining theoretical analysis, practical assessment and automated diagnostics. This includes: - Research of modern online platforms and the regulatory framework in Bulgaria for knowledge testing, with a focus on the preferences of teachers and students. - Analysis of global and local practices for transforming points into grades and development of flexible, user-friendly formulas for this conversion. - Creation of tools for automatic error analysis (e.g. at input/output levels) to assist teachers in interpreting the results.

5. Contributions of the dissertation:

A) With lasting scientific and / or applied response, they form the basis for new research and applications	20 points	
B) They are of significant scientific and / or applied interest, complete and / or summarize previous research	16 points	X
C) They are of scientific and / or applied interest	12 points	
D) Lack of significant contributions	8 points	
E) Lack of contributions	0 points	
		one of the answers given is marked with the sign "X"

Contributions must be specified. The type of results achieved must be justified.
I would summarize the contributions of the doctoral student as: **Scientific and applied contributions** - Key requirements and criteria for the effectiveness of digital platforms have been systematized and derived based on the real needs of teachers and the identified difficulties. - A large-scale comparative analysis of different assessment systems (points, percentages, ECTS) and formulas for transforming points into grades in relation to the Bulgarian regulatory framework has been conducted. - A model and methodology for diagnosing learning deficits has been developed, which is independent of the type of test, the number of questions or the educational stage. **Applied contributions** - Algorithms and scripts for automated analysis of results have been created, which overcome the limitations of standard platforms and save time. - A mechanism for automatic calculation of grades has been implemented, applicable to both online tests and manually entered data. - A method for automatic detection of "problematic questions" has been introduced and solutions for better visual and pedagogical control in a remote environment have been proposed. - Through validation, the high adaptability of the developed tools at different levels of education - from primary school to university - has been proven.

6. Conclusion

A) The evaluation of the dissertation is **POSITIVE**	This evaluation is assigned to a total number of at least 40 points	(56) X
B) The evaluation of the dissertation is **NEGATIVE**	This evaluation is assigned to a total number below 40 points	
		one of the answers given is marked with the sign "X"

To be filled in at the request of the member of the scientific jury
The scientifically applied and applied contributions in the dissertation work, supported by publications in conferences and editions referenced in Scopus, give me reason to give a positive assessment of the work of the doctoral student, M.Eng. Monika Yanulova Petrunova, and to propose her to receive the educational and scientific degree "Doctor" in the scientific specialty "Informatics", Professional Direction 4.6 "Informatics and Computer Science (Informatics)".

15.04.2026	The report was written by Prof. Dr. Tasho Tashev:	
date		signature