AL-FARABI KAZAKH NATIONAL UNIVERSITY

S.M. Romanova
O.I. Ponomarenko
Y.Yu. Yarovaya

QUESTIONS AND EXERCISES ON HYDROCHEMISTRY AND INORGANIC CHEMISTRY

For the group of specialties «Chemistry», «Biotechnology», «Hydrology», «Ichthyology, industrial fishing and fishery»

Educational manual

Almaty
«Kazak University»
2021

UDC 546
LBC 24.1
R 75

Recommended for publication by the Academic Council of the Department of Chemistry and Chemical Technology and RISO of al-Farabi KazNU (protocol No 3, 12.03.2021)

Reviewer:
Candidate of Chemical Sciences, Professor ***R.K. Nadirov***

Romanova S.M.

R 75 Questions and exercises in hydrochemistry (for the specialties «Chemistry», «Biotechnology», «Hydrology», «Ichthyology, industrial fishing and fishery»: educational manual / S.M. Romanova, O.I. Ponomarenko, Y.Yu. Yarovaya. – Almaty: Kazak University, 2020. – 189 p.

ISBN 978-601-04-5329-6

The manual contains questions and exercises in the form of tests on the main sections of hydrochemistry. The manual can be recommended for independent work in preparation for classes, midterm and final control for university students majoring in "Chemistry", "Biotechnology", "Hydrology", "Ichthyology, industrial fishing and fishery", and will also be useful to teachers, students, undergraduates, PhD students of higher educational institutions of chemical and non-chemical specialties.

UDC 546
LBC 24.1

ISBN 978-601-04-5329-6

FOREWORD

The courses "Hydrochemistry" and "Inorganic Chemistry" are one of the fundamental scientific disciplines of the chemical cycle and a necessary basis for the successful study of both chemical and special disciplines. These disciplines are studied by students of non-chemical specialties, namely: "Biotechnology", "Hydrology", "Fisheries and industrial fish farming".

Hydrochemistry is a science that studies the chemical composition of natural waters and its changes in time and space in a causal relationship with chemical, physical and biological processes occurring both in water and in the environment.

The manual contains questions and exercises on the discipline "Hydrochemistry with the basics of inorganic chemistry "in accordance with the standard curriculum on the following topics: composition, structure and properties of water as a solvent; the chemical composition of natural waters; formation of the chemical composition of natural waters; classification of the composition of natural waters; hydrochemistry of atmospheric precipitation, rivers, lakes, reservoirs; the composition of the water when it is used; fight against pollution of natural waters. The typical program of the discipline "Hydrochemistry" is compiled taking into account modern requirements for its teaching, as one of the fundamental natural disciplines, without studying which it is impossible to train specialists with a wide profile with a university education, as well as on the basis of the requirements of the educational standard in accordance with the modern methodological and scientific content of the course hydrochemistry and inorganic chemistry. At the same time, many years of experience in teaching these disciplines at leading universities in the near and far abroad and the experience of leading teachers of the Department of General and Inorganic Chemistry of the Faculty of Chemistry and Chemical Technology of al-Farabi KazNU.

Educational manual of Romanova S.M., Ponomarenko O.I., Yarovaya Y.Yu. "Questions and exercises on hydrochemistry with the basics of inorganic chemistry" for the group of "Chemistry", "Biotechnology", "Hydrology", "Ichthyology, industrial fishing and fisheries"

CONTENT

Educational issue

Romanova Sofia Maksimovna
Ponomarenko Okcana Ivanovna
Yarovaya Elena Yurievna

QUESTIONS AND EXERCISES ON HYDROCHEMISTRY AND INORGANIC CHEMISTRY

For the group of specialties «Chemistry», «Biotechnology», «Hydrology», «Ichthyology, industrial fishing and fishery»

Educational manual

Corrector *D. Ashimkhan*
Typesetting *U. Moldasheva*
Cover design by *M. Bakeev*

IB No14442
Signed for publishing 16.04.2021. Format 60x84 $^{1}/_{16}$. Offset paper.
Digital printing. Volume 11,7 printer's sheet. 50 copies. Order No4008.
Publishing house «Kazak University»
Al-Farabi Kazakh National University
KazNU, 71 Al-Farabi, 050040, Almaty

Printed in the printing office of the «Kazak University» Publishing House.