PORTFOLIO
BASIC CHEMISTRY I

ACADEMIC YEAR 2019/2020 ODD SEMESTER

Course Coordinator:
Dr. Harun Nasrudin, M.S.

Teaching Team:
Dr. Utiya Azizah, M.Pd.; Rusly Hidayah, S.Si., M.Pd.;
Prof. Suyatno, M.Si.; Dr. Maria Monica SBW, M.Si.; Dr. Nuniek Herdyastuti, M.Si.; Dr. Amaria, M.Si., Prof. Sari Edy C. M.Si.

CHEMISTRY DEPARTMENT

FACULTY OF MATHEMATICS AND SCIENCE
UNIVERSITAS NEGERI SURABAYA

TABLE OF CONTENT

A. SEMESTER LEARNING ACTIYITY PLAN

A.1. COURSE IDETITY

Module Name	Basic Chemistry I
Module level	Bachelor
Abbreviation, if applicable	8420403123
Sub-heading, if applicable	-
Course included in the module, if applicable	-
Semester/term	1st/First Year
Module coordinator(s)	Dr. Harun Nasrudin,M.S.
Lecturer(s)	Dr. Harun Nasrudin,M.S.; Dr. Utiya Azizah, M.Pd.; Rusly Hidayah, S.Si., M.Pd.; Prof. Suyatno, M.Si.; Dr. Maria Monica SBW, M.Si.; Dr. Nuniek Herdyastuti, M.Si.; Dr. Amaria, M.Si., Prof. Sari Edy C. M.Si.
Language	Indonesian
Classification within the curriculum	Compulsory Course
Teaching format/class hours per week during the semester:	3 hours lecturers (50 min per hours)
Workload:	3 x 50 minutes lectures, 3 x 60 minutes structured activity, 3 x 60 minutes individual activity, 14 weeks per semester, 119 total hours per semester ~ 4.77 ECTS**
Credit points:	3 CU = 3 x 1.59 = 4.77 ECTS
Prerequisite course(s):	-
Targeted learning outcomes:	CLO 1 Students have the ability to utilize learning resources and ICT to support mastery of concepts and theories of the scientific method, material properties, stoichiometry, atomic structure, system periodic Elements, chemical bonds, energetics, and solutions. CLO 2 Students have the ability to make decisions about the relationship of basic concepts chemistry with laboratory activities and presence chemistry in everyday life. CLO 3 Students have knowledge of the scientific method, material properties, stoichiometry, atomic structure, system periodic elements, chemical bonds, energetics, and solutions. CLO 4 Students have the ability to have an honest and responsible attitude in carry out lectures and practicum.
Content:	**Introduction**: The stages of the scientific method, Chemistry as a scientific activity, material and energy, extensive and intensive properties, chemical and physical properties, elements, compounds, and mixtures

<table>
<tr><td></td><td>Stoichiometry: Basic Chemistry Law, Atoms and Molecules, Mole Concepts, Avogadro Constanta, Compound Formulas, Chemical Reactions and Equalization, Polarity and Equivalents
Atomic Structure: Basic Particles, Hydrogen Atom Spectrum and Rutherford Atomic Model, Bohr Atomic Model, Atomic Wave Mechanics Model, Electron Configuration
Periodic System of Elements: Development of the Periodic System, Periodic System and Electron Configuration, Periodicity Properties (Atomic Radius, Ionization Energy, Electron Affinity, and Electronegativity)
Chemical Bonds: Ion Bonds, Covalent Bonds, Molecular Structures, Metal Bonds, and Chemical Styles (London Style v.d Waals, Hydrogen Bonds,)
Energetics: Several Terms (Systems, environment, state functions, adiabatic processes, isotherm processes, work, heat capacity, etc.), Law I Thermodynamics, Hess Law, Bonding Energy, Thermochemistry, Law II Thermodynamics, Entropy, Free Energy.
Solution: Electrolyte and non-electrolyte solution, colligative properties, acid-base, pH of solution, hydrolysis, namesake ion, buffer solution, and titration.</td></tr>
<tr><td>Study / exam achievements:</td><td>Students are considered to complete the course and pass if they obtain at least 40% of maximum final grade. The final grade (NA) is calculated based on the following ratio:
<table>
<tr><td>Assessment Components</td><td>Percentage of contribution</td></tr>
<tr><td>Participation</td><td>20%</td></tr>
<tr><td>Assignment</td><td>30%</td></tr>
<tr><td>Mid-semester test</td><td>20%</td></tr>
<tr><td>Final semester test</td><td>30%</td></tr>
</table></td></tr>
<tr><td>Media:</td><td>Computer, LCD, White board</td></tr>
<tr><td>Learning Methods</td><td>Individuals assignment, group assignment, discussion, presentation, and practicum</td></tr>
<tr><td>Literature:</td><td>1. Tim Kimia Dasar. 2017. Kimia Dasar I . Surabaya: Unesa University Press.
2. Brady and Humiston. 2004. General Chemistry, Principles and Structures. New York: John Willey and Sons.
3. Chang, Raymond. 2005. General Chemistry The Essential Concepts Third Edition. USA: McGraw Hill.
4. Achmad, Hiskia dan Tupamahu. 1990. Penuntun Belajar Struktur Atom, Struktur Molekul, Sistem Periodik. Bandung: ITB.
5. Achmad, Hiskia dan Tupamahu. 1991. Stoikiometri dan Energetika Kimia, Bandung, PT Citra Aditya Bakti.</td></tr>
</table>

	6. Ahmad, Hiskia. 1990. *Kimia Larutan*. Bandung: Jurusan Kimia FMIPA ITB
Notes:	*1 CU in learning process = three periods consist of: (a) scheduled instruction in a classroom or laboratory (50 minutes); (b) structured activity (60 minutes); and (c) individual activity (60 minutes) according to the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 44 Year 2015 jo. the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 50 Year 2018. **1 CU = 1,59 ECTS according to Rector Decree Of Universitas Negeri Surabaya No. 598/Un38/HK/Ak/2019

A.2. COURSE TOPIC

This course examines the concept of Scientific Methods, Material Properties, Stoichiometry, Atomic Structure, Periodic System of Elements, Chemical Bonding, Energetics, Solutions, and appropriate laboratory activities through discussion, assignment, and practicum.

A.3. COURSE PROGRAM

UNESA	**UNIVERSITAS NEGERI SURABAYA** **FACULTY OF MATHEMATICS AND NATURAL SCIENCE** **UNDERGRADUATE PROGRAMME OF CHEMISTRY EDUCATION**	**Document Code**

SEMESTER LEARNING ACTIYITY PLAN

COURSE	**CODE**	**Course Group**	**Credit Unit**		**Semester**	**Date**
BASIC CHEMISTRY 1	8420403123		**T= 2**	**P= 1**	1	November 30, 2019

AUTHORIZATION	**Compiler**	**Coordinator**	**Head of Study Program**
CHEMISTRY EDUCATION	**Dr. Harun Nasrudin, M.S.**	**Dr. Nuniek Herdyastuti, M.Si.**	**Dr. Sukarmin, M.Pd**

Learning Outcomes	**Program Learning Outcomes (PLO)**	
	PLO1 (KNO-1)	Mastering the theoretical concepts of structure, dynamics, and energy, as well as the basic principles of separation, analysis, synthesis, and characterization of chemicals
	PLO3 (SKI-1)	Mastering the principles of occupational health and safety, managing laboratories, using the equipment and operating chemical instruments
	Course Learning Outcomes (CLO)	
	CLO1	Students have the ability to utilize learning resources and ICT to support mastery of concepts and theories of the scientific method, material properties, stoichiometry, atomic structure, system periodic.
	CLO2	Students have the ability to make decisions about the relationship of basic concepts chemistry with laboratory activities and presence chemistry in everyday life.
	CLO3	Students have knowledge of the scientific method, material properties, stoichiometry, atomic structure, system periodic elements, chemical bonds, energetics, and solutions.
	CLO4	Students have the ability to have an honest and responsible attitude in carry out lectures and practicum.
	Sub CLO	
	Sub-CLO1	Describes chemistry as the result of scientific activities that study matter with universal properties

	Sub-CLO2	Applying the things that underlie stoichiometry, namely: basic laws of chemistry, atoms and molecules, the concept of moles and Avogadro's constant, compound formulas, chemical reactions and polarity and equivalence to complete chemical calculations
	Sub-CLO3	Analyzed the development of the discovery and the elementary particles of the atom according to Rutherford, Bohr, wave mechanics and electron configuration
	Sub-CLO4	Analyze the development, usefulness, and basis for composing the periodic system and its relation to the electron configuration of the elements and their periodic properties
	Sub-CLO5	Identify the relationship between chemical bonds and chemical forces to explain knowledge according to the study program.
	Sub-CLO6	Describing terms, the laws of thermodynamics, and determining the occurrence of thermodynamic reactions
	Sub-CLO7	Analyze several aspects of the solution and apply them in quantitative terms
Brief Description of the Course	Study of basic concepts: Scientific Methods, Material Properties, Stoichiometry, Atomic Structure, Periodic System of Elements, Chemical Bonding, Energetics, Solutions, and appropriate laboratory activities through discussion, assignment, and practicum.	
Study Materials: Learning Materials	**Introduction**: The stages of the scientific method, Chemistry as a scientific activity, material and energy, extensive and intensive properties, chemical and physical properties, elements, compounds, and mixtures **Stoichiometry:** Basic Chemistry Law, Atoms and Molecules, Mole Concepts, Avogadro Constanta, Compound Formulas, Chemical Reactions and Equalization, Polarity and Equivalents **Atomic Structure**: Basic Particles, Hydrogen Atom Spectrum and Rutherford Atomic Model, Bohr Atomic Model, Atomic Wave Mechanics Model, Electron Configuration **Periodic System of Elements**: Development of the Periodic System, Periodic System and Electron Configuration, Periodicity Properties (Atomic Radius, Ionization Energy, Electron Affinity, and Electronegativity) **Chemical Bonds**: Ion Bonds, Covalent Bonds, Molecular Structures, Metal Bonds, and Chemical Styles (London Style v.d Waals, Hydrogen Bonds,) **Energetics**: Several Terms (Systems, environment, state functions, adiabatic processes, isotherm processes, work, heat capacity, etc.), Law I Thermodynamics, Hess Law, Bonding Energy, Thermochemistry, Law II Thermodynamics, Entropy, Free Energy. **Solution**: Electrolyte and non-electrolyte solution, colligative properties, acid-base, pH of solution, hydrolysis, namesake ion, buffer solution, and titration.	
Reference	**Main :**	
	1. Tim Kimia Dasar. 2017. *Kimia Dasar I .* Surabaya: Unesa University Press. 2. Brady and Humiston. 2004. *General Chemistry, Principles and Structures*. New York: John Willey and Sons. 3. Chang, Raymond. 2005. *General Chemistry The Essential Concepts Third Edition.* USA: McGraw Hill.	
	Additional :	
	1. Achmad, Hiskia dan Tupamahu. 1990. *Penuntun Belajar Struktur Atom, Struktur Molekul, Sistem Periodik.* Bandung: ITB. 2. Achmad, Hiskia dan Tupamahu. 1991. *Stoikiometri dan Energetika Kimia*, Bandung, PT Citra Aditya Bakti.	

	3. Ahmad, Hiskia. 1990. *Kimia Larutan*. Bandung: Jurusan Kimia FMIPA ITB
Lecturer	Dr. Harun Nasrudin,M.S.; Dr. Utiya Aizah, M.Pd.; Rusly Hidayah, S.Si., M.Pd.; Prof. Suyatno, M.Si.; Dr. Maria Monica SBW, M.Si.; Dr. Nuniek Herdyastuti, M.Si.; Dr. Amaria, M.Si., Prof. Sari Edy C. M.Si.
Prerequisite courses	–

Meeting	**The final ability of each activity**	**Assessment**		**Learning Forms, Learning Methods, Student Assignment**		**Reference**	**Rating Weight (%)**
		Indicator	**Criteria & Form**	***Offline***	***online***		
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
1	Describes chemistry as the result of scientific activities that study matter with universal properties	1. Describe scientific steps 2. Describe the extensive and intensive nature 3. Describe the differences in chemical and physical properties, elements, compounds, and mixtures	Essay Writing Test	Interactive discussion	–	**Introduction**: The stages of the scientific method, Chemistry as a scientific activity, material and energy, extensive and intensive properties, chemical and physical properties, elements, compounds, and mixtures	**10**
2	Applying the things that underlie stoichiometry, namely: basic laws of chemistry, atoms and molecules, the concept of moles and Avogadro's constant, compound formulas, chemical reactions and polarity and equivalence	1. Describe the basic laws of chemistry 2. Describe the difference between Atom, Molecule, and Molecular Concept	Essay Writing Test	Interactive discussion and exercise	–	**Stoichiometry:** Basic Chemistry Law, Atoms and Molecules, Mole Concepts, Avogadro Constanta, Compound Formulas,	**15**

	to complete chemical calculations					Chemical Reactions and Equalization, Polarity and Equivalents	
3	Applying the things that underlie stoichiometry, namely: basic laws of chemistry, atoms and molecules, the concept of moles and Avogadro's constant, compound formulas, chemical reactions and polarity and equivalence to complete chemical calculations	1. Applying Avogadro's Constants and Compound Formulas 2. Applying Chemical Reactions and Equivalents, Polarities and Equivalents in practice questions	Essay Writing Test	Interactive discussion and individual task	–	**Stoichiometry:** Basic Chemistry Law, Atoms and Molecules, Mole Concepts, Avogadro Constanta, Compound Formulas, Chemical Reactions and Equalization, Polarity and Equivalents	
4	Applying the things that underlie stoichiometry, namely: basic laws of chemistry, atoms and molecules, the concept of moles and Avogadro's constant, compound formulas, chemical reactions and polarity and equivalence to complete chemical calculations	1. Report how to use and operate equipment according to basic chemistry practicum 2. Conduct chemical separation experiments, Laovisier Law and chemical reactions by applying the principles of	▪ Presentation assessment sheet ▪ Assessment report laboratory activities	Presentation, Question and answer, Laboratory activities	–	**Stoichiometry:** Basic Chemistry Law, Atoms and Molecules, Mole Concepts, Avogadro Constanta, Compound Formulas, Chemical Reactions and Equalization,	

		occupational safety and health				Polarity and Equivalents	
5	Analyzed the development of the discovery and the elementary particles of the atom according to Rutherford, Bohr, wave mechanics and electron configuration	1. Describe the basic particles that make up the atom 2. Analyze the development of atomic theory	▪ Essay Writing Test ▪ Presentation assessment sheet	Group task Presentation Question and answer	–	**Atomic Structure**: Basic Particles, Hydrogen Atom Spectrum and Rutherford Atomic Model, Bohr Atomic Model, Atomic Wave Mechanics Model, Electron Configuration	**10**
6	Analyzed the development of the discovery and the elementary particles of the atom according to Rutherford, Bohr, wave mechanics and electron configuration	1. Determine the quantum numbers of various atoms 2. Determine the electron configurations of various atoms	Essay Writing Test	Interactive discussion and exercise	–	**Atomic Structure**: Basic Particles, Hydrogen Atom Spectrum and Rutherford Atomic Model, Bohr Atomic Model, Atomic Wave Mechanics Model, Electron Configuration	
7	Analyze the development, usefulness, and basis for composing the periodic system and its relation to the electron configuration of the elements and their periodic properties	1. Describe the development of the Periodic System of the Elements and electron configuration relationships.	▪ Essay Writing Test ▪ Presentation assessment sheet	Group task Presentation Question and answer	–	**Periodic System of Elements**: Development of the Periodic System, Periodic System and Electron	**10**

		2. Analyze various characteristics of periodicity				Configuration, Periodicity Properties (Atomic Radius, Ionization Energy, Electron Affinity, and Electronegativity)	
8	**Midterm Exams**						
9	Identify the relationship between chemical bonds and chemical forces to explain knowledge according to the study program.	1. Determine Ionic Bonds, Covalent Bonds, Energy Bonds, and Other Chemical Bonds (van.der Waals, Hydrogen Bonds, Metal Bonds) and their relation to the properties of substances 2. Describe the resonance structure of a molecule	Essay Writing Test	Interactive discussion	–	**Chemical Bonds**: Ion Bonds, Covalent Bonds, Molecular Structures, Metal Bonds, and Chemical Styles (London Style v.d Waals, Hydrogen Bonds)	**15**
10	Identify the relationship between chemical bonds and chemical forces to explain knowledge according to the study program.	1. Determine the shape and polarity of a molecule based on the Valence Shell Electron Pair Repulsion Theory or hybridization theory. 2. Determine the bond order by means of a diagram of the energy levels of the	Essay Writing Test	Interactive discussion and group task	–	**Chemical Bonds**: Ion Bonds, Covalent Bonds, Molecular Structures, Metal Bonds, and Chemical Styles (London Style v.d Waals, Hydrogen Bonds)	

		orbitals of various diatomic molecules					
11	Describing terms, the laws of thermodynamics, and determining the occurrence of thermodynamic reactions	1. Mendeskripsikan perbedaan Sistem, lingkungan, fungsi keadaan, proses adiabatic, proses isoterm, kerja, dan kapasitas kalor. 2. Menerapkan Hukum Termodinamika I, Hukum Hess, dan Energi Ikatan dalam perhitungan 3. Describe the differences in systems, environments, state functions, adiabatic processes, isothermic processes, work, and heat capacity. 4. Applying the Law of Thermodynamics I, Hess's Law, and Bond Energy in calculations	Essay Writing Test	Interactive discussion	–	**Energetics**: Several Terms (Systems, environment, state functions, adiabatic processes, isotherm processes, work, heat capacity, etc.), Law I Thermodynamics, Hess Law, Bonding Energy, Thermochemistry, Law II Thermodynamics, Entropy, Free Energy.	**20**
12	Describing terms, the laws of thermodynamics, and determining the occurrence of thermodynamic reactions	1. Applying Thermochemical equations, Law of Thermodynamics II, Entropy, Free Energy in calculations.	▪ Essay Writing Test ▪ Assessment report laboratory activities	Interactive discussion and Laboratory activities	–	**Energetics**: Several Terms (Systems, environment, state functions, adiabatic	

		2. Perform thermochemical experiments				processes, isotherm processes, work, heat capacity, etc.), Law I Thermodynamics, Hess Law, Bonding Energy, Thermochemistry , Law II Thermodynamics, Entropy, Free Energy.	
13	Analyze several aspects of the solution and apply them in quantitative terms	1. Calculating the various concentrations of the solution 2. Determine the colligative properties of electrolyte and non-electrolyte solutions. 3. Distinguishing the acid-base theory	Essay Writing Test	Interactive discussion and group task	–	**Solution**: Electrolyte and non-electrolyte solution, colligative properties, acid-base, pH of solution, hydrolysis, namesake ion, buffer solution, and titration.	**20**
14	Analyze several aspects of the solution and apply them in quantitative terms	1. Calculate the pH of the solution. 2. Analyze the ionic equilibrium in the salt solution and relate the pH. 3. Determine the working principle, pH calculation and the	Essay Writing Test	Interactive discussion and group task	–	**Solution**: Electrolyte and non-electrolyte solution, colligative properties, acid-base, pH of solution, hydrolysis,	

		role of buffer solutions in life.				namesake ion, buffer solution, and titration.	
15	Analyze several aspects of the solution and apply them in quantitative terms	1. Determine the pH indicator route. 2. Analyze data on the results of various types of acid-base titrations 3. Carry out an acid-base titration experiment	▪ Essay Writing Test ▪ Assessment report laboratory activities	Interactive discussion and Laboratory activities	–	**Solution**: Electrolyte and non-electrolyte solution, colligative properties, acid-base, pH of solution, hydrolysis, namesake ion, buffer solution, and titration.	
16	**Final Exams**						**100**

A.4. MAPPING OF LEARNING OUTCOMES – COURSE OUTCOMES

A.4.1. The Expected Program Learning Outcomes (PLO) of Undergraduate Program of Education Chemistry (UPCE)

NO	ASPECTS	PLO	CODE
1	KNOWLEDGE	1. Capable to demonstrate knowledge related to theoretical concepts about structure, dynamics, and energy, as well as the basic principles of separation, analysis, synthesis and characterization of chemicals	KNO-1
		2. Capable to demonstrate the pedagogical knowledge of chemistry in designing, implementing, and evaluating chemistry learning	KNO-2
2	SKILL	3. Mastering the principles of ocupational health and safety, managing laboratories, using the equipment and operating chemical instruments	SKI-1
		4. Capable to design, implement, evaluate, learn and develop chemistry learning media by utilizing Information and Communication Technology	SKI-2
3	COMPETENCIES	5. Applying logical, critical, systematic and innovative thinking in the context of development or implementation of science, technology, and art that regards and applies humanities in accordance with chemistry education in solving problems	COM-1
		6. Mastering the basics of the scientific method, designing and conducting research, writing scientific reports and communicating them both verbally and in writing by utilizing information and communication technology in the field of education	COM-2
4	ATTITUDE AND SOCIAL	7. Capable to make decisions based on data/information in order to complete their responsibility assignment and evaluate the performance that has been done both individually and in groups, have an entrepreneurial spirit with environmental insight	SOC-1
		8. Capable to adapt to various developments in chemistry, develop and learn continuously throughout life to continue education, both formal and informal	SOC-2

A4.2. The Education Program Objectives (PEOs) of Basic Chemistry I.

PEO 1. Comprehending the concept and chemistry learning, laboratory management, scientific method, and ICT as well as its implementation to solve the problem in their profession.

PEO 5. Having capability to develop and apply chemistry concept along with the progress of science and technology as well as humanities values.

A4.3. Mapping of Program Learning Outcomes (PLO) – Education Program Objectives (PEOs)

	PLO 1 (KNO-1)	PLO 3 (SKI-1)
PEO 1	√	√
PEO 5	√	√

B. COURSE ASSESSMENT

B.1. Assessment Rubric

Cognitive Criteria

1. The ability to give answers correctly
2. The ability to provide argumentation according to theory
3. The ability to provide systematic explanations
4. The ability to solve problems comprehensively

B.2. Assessment System

Final Assessment Course with practicum

Practicum : 20%
Group/Individuals Assignment : 20%
Midterm examination : 30%
Final examination : 30%

Distribution of the weight of the ability of the test item

	PLO 1 (KNO-1)	PLO 3 (SKI-1)	Total
Practicum	60%	40%	100%
Group/Individuals Assignment	70%	30%	100%
Midterm examination	70%	30%	100%
Final examination	80%	20%	100%

Success Criteria of Program Learning Outcomes (PLO)

Excellent	≥ 80
Good	≥ 70
Satisfy	≥ 55
Failed	< 55

Final index for undergraduate program defined as follow:

Final Index	Range
A	4 (85 ≤-≥ 100)
A-	3,75 (80 ≤-< 85)
B+	3,5 (75 ≤- < 80)
B	3 (70 ≤-< 75)
B-	2,75 (65 ≤-<70)
C+	2,5 (60 ≤-<65)
C	2 (55 ≤-<60)
D	1 (40 ≤-<55)
E	0 (0 ≤-<40)

C. COURSE DEVELOPMENT

C.1. Academic Year 2019/2020 odd semester

Parameter	∑ of person	Percentage
Number or students taking this subject	87	100 %
Number of students who pass at first attempt (>B-)	68	78,16 %
Number of students who pass at first attempt (C ≥ - ≤ B-)	18	20,69 %
Number of failed students after remedial (D & E)	1	1,15 %

C.2. Problems Analysis

In 2019/2020 academic year in the basic chemistry I course, there were 100 % of students who had passed the examination at the first attempt. At the end of the semester examination, there is no remedial. There is one student who did not graduate because the student did not take the final exam and collecting assignments. There are 18 students who graduated, but the grades are below standard, namely 55 - <70. So, it was thought that the learning strategy/methods still need to be improved to achieve higher results in the future. The average final score in 2019/2020 is lower than before, due students have different characteristics, namely they difficult to cooperate with their group and not serious when doing the task, therefore the have lack of average score.

C.3. Solutive Strategy

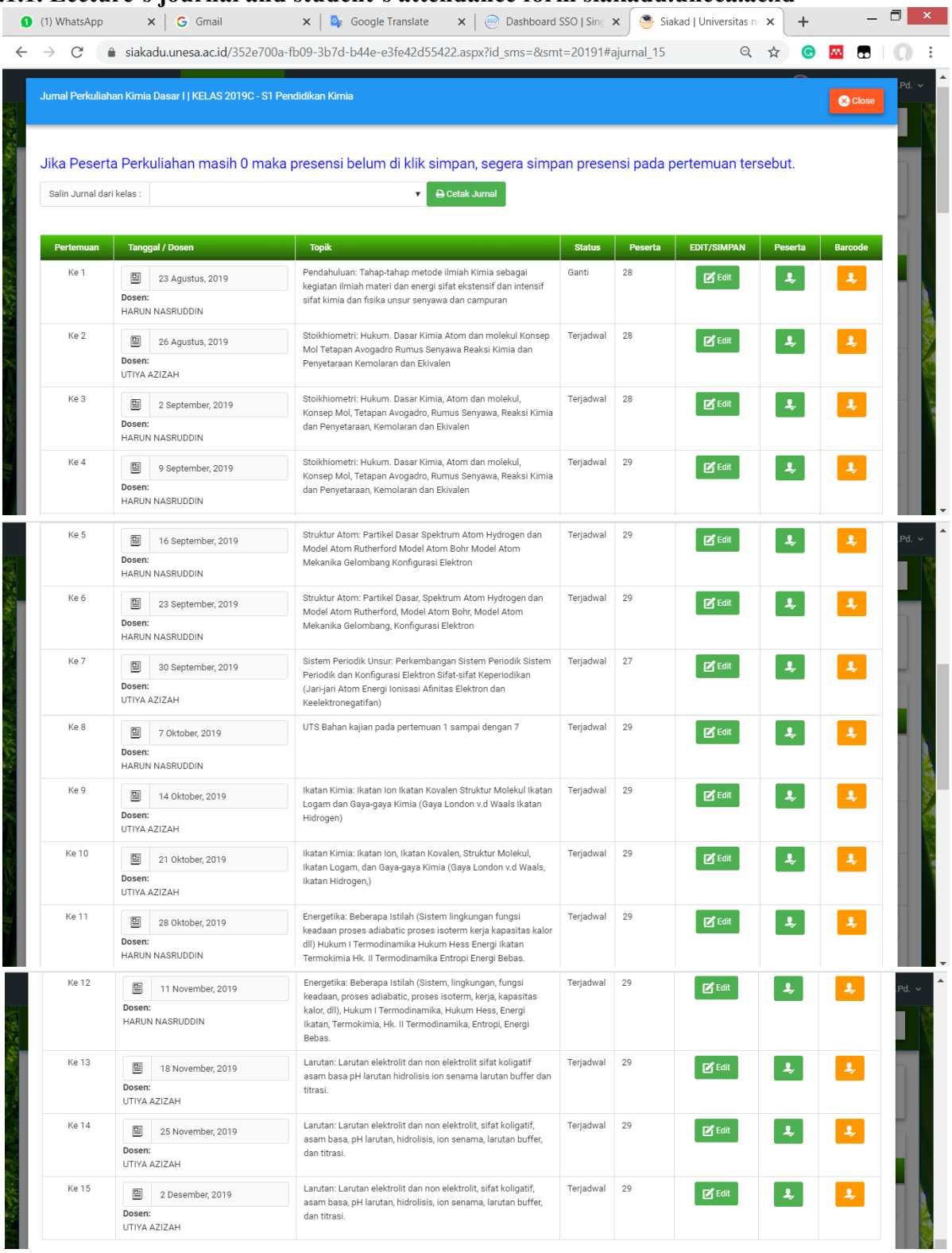
New teaching and learning methods should be developed for the next academic years, consisting of:

1. Redesigning the course material (PPT slides, course contents, etc.) to become more interesting and interactive to stimulate student's interest in this course.
2. Giving "lecture by online" to stimulate our students to learn about the next lecture topics.
3. Enhance the cooperative skills of students with exchange the methods and models of learning

D. APPENDICES

D.1. DOCUMENT OF COURSE ACTIVITY

D.1.1. Lecture's journal and student's attendance form siakadu.uneca.ac.id



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Jurnal Perkuliahan Kimia Dasar I | KELAS 2019C - S1 Pendidikan Kimia — Close

Jika Peserta Perkuliahan masih 0 maka presensi belum di klik simpan, segera simpan presensi pada pertemuan tersebut.

Salin Jurnal dari kelas : — Cetak Jurnal

Pertemuan	Tanggal / Dosen	Topik	Status	Peserta	EDIT/SIMPAN	Peserta	Barcode
Ke 1	23 Agustus, 2019 Dosen: HARUN NASRUDDIN	Pendahuluan: Tahap-tahap metode ilmiah Kimia sebagai kegiatan ilmiah materi dan energi sifat ekstensif dan intensif sifat kimia dan fisika unsur senyawa dan campuran	Ganti	28	Edit		
Ke 2	26 Agustus, 2019 Dosen: UTIYA AZIZAH	Stoikhiometri: Hukum. Dasar Kimia Atom dan molekul Konsep Mol Tetapan Avogadro Rumus Senyawa Reaksi Kimia dan Penyetaraan Kemolaran dan Ekivalen	Terjadwal	28	Edit		
Ke 3	2 September, 2019 Dosen: HARUN NASRUDDIN	Stoikhiometri: Hukum. Dasar Kimia, Atom dan molekul, Konsep Mol, Tetapan Avogadro, Rumus Senyawa, Reaksi Kimia dan Penyetaraan, Kemolaran dan Ekivalen	Terjadwal	28	Edit		
Ke 4	9 September, 2019 Dosen: HARUN NASRUDDIN	Stoikhiometri: Hukum. Dasar Kimia, Atom dan molekul, Konsep Mol, Tetapan Avogadro, Rumus Senyawa, Reaksi Kimia dan Penyetaraan, Kemolaran dan Ekivalen	Terjadwal	29	Edit		
Ke 5	16 September, 2019 Dosen: HARUN NASRUDDIN	Struktur Atom: Partikel Dasar Spektrum Atom Hydrogen dan Model Atom Rutherford Model Atom Bohr Model Atom Mekanika Gelombang Konfigurasi Elektron	Terjadwal	29	Edit		
Ke 6	23 September, 2019 Dosen: HARUN NASRUDDIN	Struktur Atom: Partikel Dasar, Spektrum Atom Hydrogen dan Model Atom Rutherford, Model Atom Bohr, Model Atom Mekanika Gelombang, Konfigurasi Elektron	Terjadwal	29	Edit		
Ke 7	30 September, 2019 Dosen: UTIYA AZIZAH	Sistem Periodik Unsur: Perkembangan Sistem Periodik Sistem Periodik dan Konfigurasi Elektron Sifat-sifat Keperiodikan (Jari-jari Atom Energi Ionisasi Afinitas Elektron dan Keelektronegatifan)	Terjadwal	27	Edit		
Ke 8	7 Oktober, 2019 Dosen: HARUN NASRUDDIN	UTS Bahan kajian pada pertemuan 1 sampai dengan 7	Terjadwal	29	Edit		
Ke 9	14 Oktober, 2019 Dosen: UTIYA AZIZAH	Ikatan Kimia: Ikatan Ion Ikatan Kovalen Struktur Molekul Ikatan Logam dan Gaya-gaya Kimia (Gaya London v.d Waals Ikatan Hidrogen)	Terjadwal	29	Edit		
Ke 10	21 Oktober, 2019 Dosen: UTIYA AZIZAH	Ikatan Kimia: Ikatan Ion, Ikatan Kovalen, Struktur Molekul, Ikatan Logam, dan Gaya-gaya Kimia (Gaya London v.d Waals, Ikatan Hidrogen,)	Terjadwal	29	Edit		
Ke 11	28 Oktober, 2019 Dosen: HARUN NASRUDDIN	Energetika: Beberapa Istilah (Sistem lingkungan fungsi keadaan proses adiabatic proses isoterm kerja kapasitas kalor dll) Hukum I Termodinamika Hukum Hess Energi Ikatan Termokimia Hk. II Termodinamika Entropi Energi Bebas.	Terjadwal	29	Edit		
Ke 12	11 November, 2019 Dosen: HARUN NASRUDDIN	Energetika: Beberapa Istilah (Sistem, lingkungan, fungsi keadaan, proses adiabatic, proses isoterm, kerja, kapasitas kalor, dll), Hukum I Termodinamika, Hukum Hess, Energi Ikatan, Termokimia, Hk. II Termodinamika, Entropi, Energi Bebas.	Terjadwal	29	Edit		
Ke 13	18 November, 2019 Dosen: UTIYA AZIZAH	Larutan: Larutan elektrolit dan non elektrolit sifat koligatif asam basa pH larutan hidrolisis ion senama larutan buffer dan titrasi.	Terjadwal	29	Edit		
Ke 14	25 November, 2019 Dosen: UTIYA AZIZAH	Larutan: Larutan elektrolit dan non elektrolit, sifat koligatif, asam basa, pH larutan, hidrolisis, ion senama, larutan buffer, dan titrasi.	Terjadwal	29	Edit		
Ke 15	2 Desember, 2019 Dosen: UTIYA AZIZAH	Larutan: Larutan elektrolit dan non elektrolit, sifat koligatif, asam basa, pH larutan, hidrolisis, ion senama, larutan buffer, dan titrasi.	Terjadwal	29	Edit		

KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS NEGERI SURABAYA

Jl. Lidah Wetan, Surabaya - 60213
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PRESENSI KULIAH

Periode 2019/2020 Gasal

Mata Kuliah : **Kimia Dasar I**
Kelas : 2019C
Prodi : S1 Pendidikan Kimia

Dosen : Dr. Harun Nasrudin, M.S.
Dr. Utiya Azizah, M.Pd.

No	NIM	Nama Mahasiswa	Pertemuan Ke															%
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
			23 Aug 19	26 Aug 19	02 Sep 19	09 Sep 19	16 Sep 19	23 Sep 19	30 Sep 19	07 Oct 19	14 Oct 19	21 Oct 19	28 Oct 19	11 Nov 19	18 Nov 19	25 Nov 19	02 Dec 19	
1.	19030194001	EKA NUR AFIYANTI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
2.	19030194005	DINI ANGGRAINI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
3.	19030194007	SELVIA NURAINI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
4.	19030194009	AMALIA CAHYANING WULAN AGUSTINE	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
5.	19030194015	TITO VANZAL	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
6.	19030194016	DWI WILUJENG FATTIKASARI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
7.	19030194018	AZZA NURIAH WIDOWATI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
8.	19030194022	HANY ARMAYANTI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
9.	19030194023	ILMIATUL MUFA'IDAH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
10.	19030194025	DIAN ZULFATUR RIZQIYAH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
11.	19030194028	ADELIA FOURISTA KHAIRINIZA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
12.	19030194029	NOVITA INDAH RAMADHANI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
13.	19030194032	SEPTIA NURKHALIDA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
14.	19030194034	AFIQA AZRA AMANINA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
15.	19030194037	SALSABILA ALMAS DWI RANTI	H	H	H	H	H	H	I	H	H	H	H	H	H	H	H	100 %
16.	19030194041	MIFTAKHUL JANAH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
17.	19030194043	NIRMALA PUTERI BATARI	H	H	I	H	H	H	H	H	H	H	H	H	H	H	H	100 %
18.	19030194045	MUHAMMAD DANU ERLANGGA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
19.	19030194047	BELLA WAHYUNING TYAS	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
20.	19030194048	FAUZIA HANIM ZULFAH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
21.	19030194050	EKA HASLINDA FATMAWATI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
22.	19030194055	ELFA SELVIANA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
23.	19030194059	SUDZUASMAIS	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
24.	19030194060	AINUN TAZKIA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
25.	19030194068	SABRINA AJI SABILA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
26.	19030194069	RYO WIDI DANIELSON	H	H	H	H	H	H	I	H	H	H	H	H	H	H	H	100 %
27.	19030194076	SISKA WIDIANA PUTRI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
28.	19030194077	AIZA ALYA	I	I	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
29.	19030194085	RINTIS MEGA AYIRAHMA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	100 %
Tanda Tangan Dosen / Asisten																		

D.1.2. Sample of statement of examination official report

(Scan Berita Acara Ujian Kimia Dasar 1)

D.2. SAMPLE OF STUDENT WORK

D.2.1. Sample of Test Paper

KEMENTERIAN RISET, TEKNOLOGI DAN PENDIDIKAN TINGGI
UNIVERSITAS NEGERI SURABAYA
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
JURUSAN KIMIA

Kampus Ketintang
Jalan Ketintang Gedung C5 dan C6
Surabaya 60231
T: +6231–8298761
F: +6231–8298761

FINAL TEST OF ODD SEMESTER 2019/2020

Examination Subject	: Basic Chemistry I
Department/Faculty	: Chemistry/Mathematics and Natural Sciences
Program/Year	: Chemistry Education (PKU 2019)
Day / date	: Wednesday/18 December 2019
Period	: 100 minutes
Time	: III
Lecturers	: Team
Characteristic	: Closed Book

Directions:

1. Answer the following questions on the answer sheet.

2. Used a calculator (not a handphone)

A. CHEMICAL BONDING (score 40)

1. Consider the physical properties of the following two substances

Num	Physical Properties	Substance A	Substance B
1	The electric conductivity melted	Conduct electricity	Does not Conduct electricity
2	The electrical conductivity of solutions	Conduct electricity	Does not Conduct electricity
3	Boiling point and melting point	high	low

Based on these data, determine the types of bonds contained in substance A and substance B.

2. There are two elements with the notation 12A and 35B. If the two elements are bonded, determine the shape of the molecule and the polarity that occurs.
3. Using the molecular orbital theory, determine the bond order O_2^{2-} if the atomic number is O = 8 by drawing the energy level diagram.

B. ENERGETICS (Score 20)

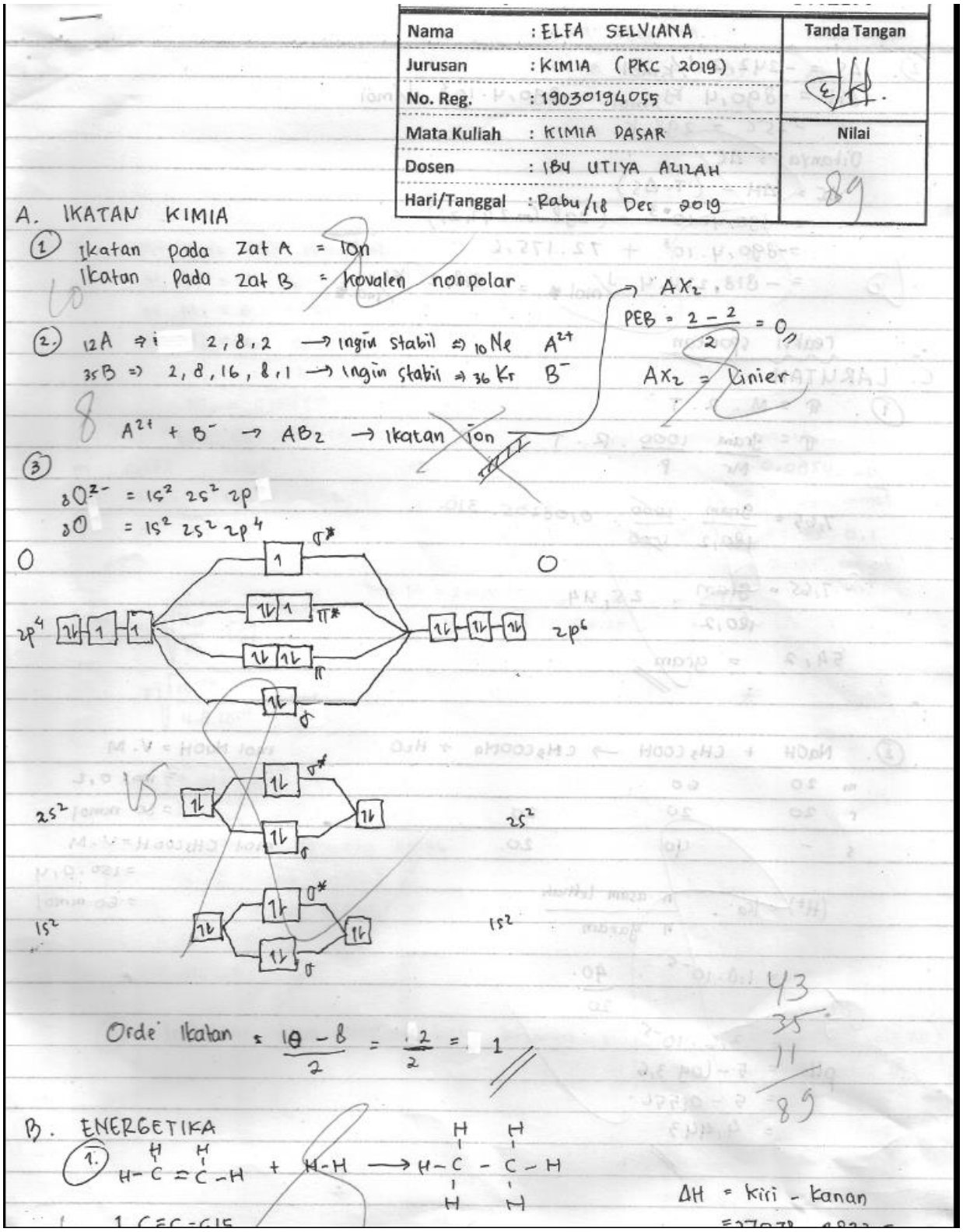
4. Find ΔH in the reaction $H_2C = CH_2(g) + H_2(g) \longrightarrow H_3C - CH_3\,(g)$, if the bond energy is $C = C$ = 615 kJ/mol; $C - H$ = 414,2 kJ/mol; $H - H$ = 436 kJ/mol; $C - C$ = 347,3 kJ/mol.
5. Consider the methane combustion reaction: $CH_4(g) + O_2(g) \rightarrow CO_2(g) + 2H_2O(l)$ If you know the price of the change in entropy is – 242,2 J/K mole and the change in enthalpy – 890,4 kJ/mole, calculate the standard Gibbs free energy change at 250C? The reaction takes place spontaneously or not?

C. SOLUTION (Score 40)

6. Determine the mass (in grams) of glucose (molar mass = 180.2 g / mol) needed to make 1.00 liters of intravenous injection solution whose osmotic pressure is the same as the osmotic pressure of blood, if the osmotic pressure of the blood is 7.65 atm at 37^0C.
7. Calculate the pH of the solution made by mixing 100 mL NaOH 0,200 M and 150 mL CH_3COOH 0,400 M (Ka = 1,8 x 10^{-5}).
8. 1.7872 grams of the sample contains sodium carbonate. The sample is dissolved up to 100 mL. 25 mL of the sample is titrated with indicator A and requires 21.35 mL of 0.1 M HCl until the indicator changes color. (Known Ka H_2CO_3 = 4,2 .10^{-7} ; Ka $NaHCO_3$ = 4,8 . 10^{-11}). Specify: a) pH at the equivalence point, and b) The indicator used in the titration.

Note: Ar C = 12,01 ; H = 1 ; Na = 22,99; Cl = 35,45 ; O = 15,99

D.2.2. Sample of Student's Work



Nama	: ELFA SELVIANA	Tanda Tangan
Jurusan	: KIMIA (PKC 2019)	
No. Reg.	: 1903019405S	
Mata Kuliah	: KIMIA DASAR	Nilai
Dosen	: IBU UTIYA AZIZAH	89
Hari/Tanggal	: Rabu/18 Des 2019	

A. IKATAN KIMIA

(1) Ikatan pada Zat A = Ion
Ikatan pada Zat B = kovalen nonpolar

(2) $_{12}A \Rightarrow 2, 8, 2 \rightarrow$ ingin stabil $\Rightarrow {}_{10}Ne$ A^{2+}
$_{35}B \Rightarrow 2, 8, 16, 8, 1 \rightarrow$ ingin stabil $\Rightarrow {}_{36}Kr$ B^{-}

$A^{2+} + B^{-} \rightarrow AB_2 \rightarrow$ Ikatan Ion

AX_2
PEB = $\frac{2-2}{2} = 0$
AX_2 = linier

(3)
$_8O^{2-} = 1s^2\ 2s^2\ 2p$
$_8O = 1s^2\ 2s^2\ 2p^4$

Orde Ikatan = $\frac{10-8}{2} = \frac{2}{2} = 1$

B. ENERGETIKA

(1) $H-C(H)=C(H)-H + H-H \longrightarrow H-C(H)-C(H)-H$

ΔH = kiri - kanan

(2). $\Delta S = -242,2\ J/K.mol$

$\Delta H = -890,4\ KJ/mol = -890,4 \cdot 10^3\ J/mol$

$T = 25°C = 298\ K.$

Ditanya : ΔG

$\Delta G = \Delta H - (T \cdot \Delta S)$

$= -890,4 \cdot 10^{*3} - (298 \cdot (-242,2))$

$= -890,4 \cdot 10^3 + 72.175,6$

$= -818.224,4\ J/mol = -818,2\ KJ/mol.$

reaksi spontan

C. LARUTAN

(1). $\pi = M \cdot R \cdot T$

$\pi = \frac{gram}{Mr} \cdot \frac{1000}{P} \cdot R \cdot T$

$7,65 = \frac{gram}{180,2} \cdot \frac{1000}{1000} \cdot 0,08205 \cdot 310$

$7,65 = \frac{gram}{180,2} \cdot 25,44$

$54,2 = gram$

(2). $NaOH + CH_3COOH \rightarrow CH_3COONa + H_2O$

m	20	60		
r	20	20	20	
s	-	40	20	

$(H^+) = Ka \cdot \frac{n\ asam\ lemah}{n\ garam}$

$= 1,8 \cdot 10^{-5} \cdot \frac{40}{20}$

$= 3,6 \cdot 10^{-5}$

$pH = 5 - \log 3,6$

$= 5 - 0,556$

$= 4,443$

mol NaOH = V . M

= 100 . 0,2

= 20 mmol

mol CH_3COOH = V . M

= 150 . 0,4

= 60 mmol

UTS/UAS FAKULTAS MIPA - UNESA

Nama	: ELFA SELVIANA	Tanda Tangan
Jurusan	: KIMIA (PKC 2019)	
No. Reg.	: 1903019405S	
Mata Kuliah	: KIMIA DASAR	Nilai
Dosen	: IBU UTIYA AZIZAH	
Hari/Tanggal	: Rabu, 18 Des. 2019	

③. (a) pH pada titik ekuivalent

$M_1 . V_1 = M_2 . V_2$

$25 . M_1 = 0,1 . 21,35$

$M_1 = \frac{0,1 . 21,35}{25}$

$M_1 = 0,0854$

$NaHCO_3 + HCl \longrightarrow NaCl + H_2CO_3$

	$NaHCO_3$	HCl	$NaCl$	H_2CO_3
m	2,135	2,135		
r	2,135	2,135	2,135	
s	–	–	2,135 mmol	

. mol $NaHCO_3$ = M . V
= 0,0854 . 25
= 2,135 mmol

. mol HCl = 21,35 . 0,1
= 2,135 mmol

$\hookrightarrow M = \frac{2,135}{21,35 + 25} = \frac{2,135}{46,35} = 0,046$

$[OH^-] = \sqrt{\frac{K_w}{K_a} \cdot [G]}$

$= \sqrt{\frac{10^{-14}}{4,8 . 10^{-11}} \cdot 0,046}$

$= \sqrt{9,583 . 10^{-6}}$

$= 3,096 . 10^{-3}$

$pOH = 3 - \log 3,096$

$PH = 14 - (3 - \log 3,096)$

$= 11 + \log 3,096$

$= 11 + 0,49$

$= 11,49$ //

D.3. RECAPITULATION OF ASSESSMENT

D.3.1. Validate Test Item

The end-of-semester evaluation questions consist of eight items in the form of essay questions analyzed content through experts in the appropriate field of Chemistry Education analyzed. Essay questions are validated with expert judgment in the course team members. The analysis was conducted by taking into account several aspects, namely the suitability of the questions with the course outcome, language, content and construct.

D.3.2 Evaluation Results of Basic Chemistry I

PROGRAM STUDI S1 Pendidikan Kimia

DAFTAR NILAI MAHASISWA

Mata Kuliah : Kimia Dasar I

Kelas : 2019C

Tahun Ajaran : 2019/2020 Gasal

Original data :

Keterangan :

1. Komponen nilai yang diisi hanya : Part,Tugas,UTS dan UAS
2. Nilai UAS mahasiswa dengan kehadiran dibawah 73.3% (kolom dg warna merah) tidak akan disimpan
3. Jangan merubah apapun di dokumen ini kecuali pada point nomer satu di atas.
4. PPTI / BAAK tidak menerima file nilai untuk diupload. Proses upload nilai dilakukan oleh dosen pengampu yang bersangkutan.

No	NIM	Nama Mahasiswa	Angkatan	Kehadiran	Prakt	Tugas	UTS	UAS	NA	Huruf	Pakai
1	19030194003	NANDA FAUZIYAH FEBRIANTI	2019	100%	83	75	45	62	66.7	B-	1
2	19030194004	VERAWATI ISNAINI	2019	100%	86	76	57	51	66.7	B-	1
3	19030194008	ANNISA PUTRIA DEWITASARI	2019	100%	94	86	60	75	79.1	B+	1
4	19030194010	ANDANG NURHUDA	2019	100%	91	83	55	68	74.5	B	1
5	19030194011	HASNA CHOIRIYAH	2019	100%	70	62	45	75	64.1	C+	1
6	19030194012	ALIMATHUS SA'DIYAH	2019	100%	82	74	55	74	71.8	B	1
7	19030194013	RIA FATMAWATI	2019	100%	73	65	50	62	62.7	C+	1
8	19030194021	EVITA HARTI NANDA	2019	100%	90	82	60	83	79.5	B+	1
9	19030194024	ANNISA NUR RAHMAWATI	2019	100%	87	79	55	77	75.2	B+	1
10	19030194026	DYAH KIRANI NOVIYANA	2019	100%	80	72	45	80	70.6	B	1
11	19030194030	NAWANG WAHYU WULANDARI	2019	100%	78	68	60	63	66.9	B-	1
12	19030194031	AMALIA MUNJIATUL UMMAH	2019	100%	83	75	55	75	72.6	B	1
13	19030194033	SALSABILA RACHMASARI PUTRI	2019	100%	88	80	65	83	79.5	B+	1
14	19030194036	MAYA KUMALASARI	2019	100%	95	87	70	80	83.1	A-	1
15	19030194039	ARZA RIZKY SEPTI ANSYACH	2019	100%	92	84	45	74	74.8	B	1
16	19030194042	PUTRI NUR AZIZAH	2019	100%	94	86	63	87	83.3	A-	1
17	19030194044	YULISA DWI ANGGRAENI	2019	100%	92	84	45	84	77.8	B+	1
18	19030194054	CICI APRILIA	2019	100%	88	80	55	65	72.1	B	1
19	19030194056	FADHILATUR ROCHMATIN	2019	100%	87	79	60	81	77.4	B+	1
20	19030194062	DINI CATUR ANISAH	2019	100%	81	73	67	91	78.8	B+	1
21	19030194064	FITRIA RAHMATUL ULA	2019	100%	84	76	57	87	77.1	B+	1
22	19030194072	ISTI INDRA WINARSEH	2019	100%	91	83	65	80	80.1	A-	1
23	19030194073	SHINTA TAQIYYAH NABILAH NUHA	2019	100%	85	77	45	63	68	B-	1
24	19030194074	SANIYYATUL AWALIYAH	2019	100%	83	75	45	64	67.3	B-	1
25	19030194075	AMELIA WULANDARI	2019	100%	72	64	45	64	61.8	C+	1
26	19030194080	OCTAVIA DWI FADLIILAH	2019	100%	77	69	57	51	62.8	C+	1
27	19030194082	TASSHA PUTRI RATNASARI	2019	100%	84	76	45	74	70.8	B	1
28	19030194083	MAHARANI AGUSTINA ARIVI	2019	100%	83	75	75	67	74.2	B	1
29	19030194084	IZZATUL MUHIDAH	2019	100%	84	76	75	78	78	B+	1
30	19030194087	AGUNG WIJAYA	2019	100%	76	68	65	53	64.5	C+	1
31	19030194002	SINTIA NUR AENI	2019	93.33%	87	82.3	78	80	81.69	A-	1
32	19030194006	MAULIDIA USWATUN KHASANAH	2019	93.33%	89	85.7	70	85	83.01	A-	1
33	19030194014	DWI MEI SILVIA	2019	93.33%	86	81.3	80	73	79.49	B+	1
34	19030194017	SAFIRA FIRDAUS YAHYA	2019	93.33%	88	82	70	87	82.3	A-	1
35	19030194019	KHUROTA A'YUNIN	2019	93.33%	86	84.7	95	81	85.91	A	1

36	19030194020	NENI ANUGRAHENI NURRAHMAH	2019	93.33%	72	80	92	83	81.7	A-	1
37	19030194035	DANANG PUTRA PRATAMA	2019	93.33%	88	57	69	78	71.9	B	1
38	19030194038	SYIFA AMANDHA	2019	93.33%	80	82.7	74	69	76.31	B+	1
39	19030194040	WELLA YEKTI INKOMARA	2019	93.33%	67	76.7	70	58	67.81	B-	1
40	19030194046	ELVIRA MIFTARIDA AFANDI	2019	93.33%	65	76	100	70	76.8	B+	1
41	19030194049	ANNISA NABILA	2019	93.33%	70	77.7	75	68	72.71	B	1
42	19030194051	NADIA EKA VANIA SUNARTO	2019	93.33%	67	76.7	68	71	71.31	B	1
43	19030194052	FAJAR NOVA PRASETYO	2019	93.33%	65	76	68	78	72.8	B	1
44	19030194053	GITA THERESA ARY SUDARSONO	2019	93.33%	68	77	71	75	73.4	B	1
45	19030194057	ZULIA TRIS FEBRIANTI	2019	93.33%	70	76.7	80	78	76.41	B+	1
46	19030194061	NUR LAILIL APRILIA	2019	93.33%	74	80.7	69	68	73.21	B	1
47	19030194063	ALVIN MAGHFIRAH	2019	93.33%	70	79.3	70	79	75.49	B+	1
48	19030194066	COLLIA NAWANG PUTRI	2019	93.33%	66	76.3	80	83	76.99	B+	1
49	19030194067	IGA PUTRI SUBANDI	2019	93.33%	71	77	75	55	68.8	B-	1
50	19030194070	RANI RATNA KUSUMA	2019	93.33%	67	75	82	49	67	B-	1
51	19030194071	FAIZ RIZKY NUR AWWALUDIN	2019	93.33%	65	77.7	72	15	55.21	C	1
52	19030194078	SYARIFAH AISAH	2019	93.33%	68	77	69	62	69.1	B-	1
53	19030194079	YESIKA DWI PRASTIWI	2019	93.33%	73	71.3	72	49	65.09	B-	1
54	19030194081	LILLA PANGESTU HARWYANDANI	2019	93.33%	67	78.3	75	69	72.59	B	1
55	19030194086	ADELLA ICHA ARDHANI	2019	93.33%	73	78.7	80	82	78.81	B+	1
56	19030194088	FIRDA NURIN NIKMAH	2019	93.33%	68	49.3	43	0	36.99	E	1
57	19030194089	FITANI WARDHA MACHFIRO	2019	93.33%	73	75.7	51	49	62.21	C+	1
58	19030194090	TSABITA LATHUF ZHAFIRAH.A	2019	93.33%	70	54.7	68	43	56.91	C	1
59	19030194001	EKA NUR AFIYANTI	2019	100%	77	82	85	75	79.5	B+	1
60	19030194005	DINI ANGGRAINI	2019	100%	84	86	83	89	85.9	A	1
61	19030194007	SELVIA NURAINI	2019	100%	82	84	83	74	80.4	A-	1
62	19030194009	AMALIA CAHYANING WULAN AGUSTINE	2019	100%	78	80	79	77	78.5	B+	1
63	19030194015	TITO VANZAL	2019	100%	89	91	88	89	89.4	A	1
64	19030194016	DWI WILUJENG FATTIKASARI	2019	100%	90	91	78	95	89.4	A	1
65	19030194018	AZZA NURIAH WIDOWATI	2019	100%	78	80	70	64	72.8	B	1
66	19030194022	HANY ARMAYANTI	2019	100%	86	88	83	89	86.9	A	1
67	19030194023	ILMIATUL MUFA'IDAH	2019	100%	87	85	87	91	87.6	A	1
68	19030194025	DIAN ZULFATUR RIZQIYAH	2019	100%	77	79	72	71	74.8	B	1
69	19030194028	ADELIA FOURISTA KHAIRINIZA	2019	100%	75	77	80	70	75.1	B+	1
70	19030194029	NOVITA INDAH RAMADHANI	2019	100%	75	80	79	58	72.2	B	1
71	19030194032	SEPTIA NURKHALIDA	2019	100%	87	89	74	87	85	A	1
72	19030194034	AFIQA AZRA AMANINA	2019	100%	84	86	84	73	81.3	A-	1
73	19030194037	SALSABILA ALMAS DWI RANTI	2019	100%	83	85	73	59	74.4	B	1
74	19030194041	MIFTAKHUL JANAH	2019	100%	77	79	85	41	68.4	B-	1
75	19030194043	NIRMALA PUTERI BATARI	2019	100%	81	83	79	69	77.6	B+	1
76	19030194045	MUHAMMAD DANU ERLANGGA	2019	100%	91	93	80	95	90.6	A	1
77	19030194047	BELLA WAHYUNING TYAS	2019	100%	89	91	81	88	87.7	A	1
78	19030194048	FAUZIA HANIM ZULFAH	2019	100%	88	90	75	83	84.5	A-	1
79	19030194050	EKA HASLINDA FATMAWATI	2019	100%	84	86	77	60	76	B+	1
80	19030194055	ELFA SELVIANA	2019	100%	87	89	82	95	89	A	1
81	19030194059	SUDZUASMAIS	2019	100%	83	85	70	52	71.7	B	1
82	19030194060	AINUN TAZKIA	2019	100%	83	85	76	83	82.2	A-	1
83	19030194068	SABRINA AJI SABILA	2019	100%	85	87	73	82	82.3	A-	1
84	19030194069	RYO WIDI DANIELSON	2019	100%	85	87	80	80	83.1	A-	1
85	19030194076	SISKA WIDIANA PUTRI	2019	100%	80	80	80	89	82.7	A-	1
86	19030194077	AIZA ALYA	2019	100%	82	84	81	85	83.3	A-	1
87	19030194085	RINTIS MEGA AYIRAHMA	2019	100%	65	70	81	65	69.7	B-	1

D.3.3 Percentage of PLO achievements of basic chemistry I at Academic Year 2019/2020

	PLO-1	PLO-2	PLO-3	PLO-4	PLO-5	PLO-6	PLO-7	PLO-8
EXELENCE	26%		30%					
GOOD	45%		47%					
SATISFY	26%		22%					
FALSE	2%		1%					
	100%	0%	100%	0%	0%	0%	0%	0%