



Republic of the Philippines
Department of Education
CARAGA REGION

**TABLE OF SPECIFICATION FOR THE DIAGNOSTIC TEST IN GENERAL CHEMISTRY I
SY 2022-2023**

MOST ESSENTIAL LEARNING COMPETENCIES	No. of days based on LC Codes	%	No. of Items	Lower-order Thinking Skills		Moderate-order Thinking Skills		Higher-order Thinking Skills	
				Rem	Und	App	Ana	Eval	Cre
				Item Placement					
1. Use properties of matter to identify substances and to separate them (STEM_GC11MPla-b-5)	2	3%	2	1		2			
2. Recognize the formulas of common chemical substances (STEM_GC11MPla-b-9)	2	3%	2	3		4			
3. Compare consumer products on the basis of their components for use, safety, quality and cost (STEM_GC11MPla-b-11)	2	3%	1			5			
4. Describe various simple separation techniques such as distillation, chromatography (STEM_GC11MPla-b-12)	2	3%	1				6		
5. Recognize common isotopes and their uses (STEM_GC11AMlc-e-19)	2	3%	1		7				
6. Represent compounds using chemical formulas, structural formulas and models (STEM_GC11AMlc-e-21)	2	3%	2	8		9**			
7. Name compounds given their formula and write formula given the name of the compound (STEM_GC11AMlc-e-23)	2	3%	2		10, 11**				
8. Calculate the empirical formula from the percent composition of a compound (STEM_GC11PCIf-32)	2	3%	1				12*		
9. Calculate molecular formula given molar mass (STEM_GC11PCIf-33)	2	3%	2				13*, 14*		
10. Write and balanced chemical equations (STEM_GC11CRIf-g-37)	2	3%	2		15***			16***	



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11. Construct mole or mass ratios for a reaction in order to calculate the amount of reactant needed or amount of product formed in terms of moles or mass (STEM_GC11MRlg-h-38)	1	1.5%	1			17*			
12. Calculate percent yield and theoretical yield of the reaction (STEM_GC11MRlg-h-39)	1	1.5%	1					18***	
13. Explain the concept of limiting reagent in a chemical reaction; identify the excess reagent(s) (STEM_GC11MRlg-h-40)	4	6%	2					19***, 20***	
14. Define pressure and give the common units of pressure (STEM_GC11GIhi-43)	1	1.5%	1	21					
15. Use the gas laws to determine pressure, volume, or temperature of a gas under certain conditions of change (STEM_GC11G-lhi-45)	1	1.5%	1				22***		
16. Use the ideal gas equation to calculate pressure, volume, temperature, or number of moles of a gas (STEM_GC11G-lhi-46)	1	1.5%	1					23***	
17. Use Dalton's law of partial pressures to relate mole fraction and partial pressure of gases in a mixture (STEM_GC11DLIi-47)	1	1.5%	1					24***	
18. Apply the principles of stoichiometry to determine the amounts (volume, number of moles, or mass) of gaseous reactants and products (STEM_GC11GSli-j-48)	2	3%	2	25				26***	
19. Relate the rate of gas effusion with molar mass (STEM_GC11KMTlj-50)	2	3%	1		27***				
20. Use quantum numbers to describe an electron in an atom (STEM_GC11ESIIa-b-54)	1	1.5%	1		28				
21. Determine the magnetic property of the atom based on its electronic configuration (STEM_GC11ESIIa-b-57)	1	1.5%	1					29**	
22. Draw an orbital diagram to represent the electronic configuration of atoms (STEM_GC11ESIIa-b-58)	2	3%	2			30**		31**	
23. Draw the Lewis structure of ions (STEM_GC11CBIIIdg-70)	4	6%	2	32			33***		
24. Apply the octet rule in the formation of molecular covalent compounds (STEM_GC11CBIIId-g-76)	1	1.5%	1		34**				

25. Write the formula of molecular compounds formed by the nonmetallic elements of the representative block (STEM_GC11CBIIId-g-77)	2	3%	1	35					
26. Draw Lewis structure of molecular covalent compounds (STEM_GC11CBIIId-g-78)	1	1.5%	1				36***		
27. Describe the geometry of simple compounds (STEM_GC11CBIIId-g-81)	2	3%	2		37**	38**			
28. Determine the polarity of simple molecules (STEM_GC11CBIIId-g-82)	2	3%	2			39	40**		
29. Describe the different functional groups (STEM_GC11OCIIlg-j-87)	4	6%	2	41	42**				
30. Describe structural isomerism; give examples (STEM_GC11OCIIlg-j-89)	1	1.5%	1				43**		
31. Describe some simple reactions of organic compounds: combustion of organic fuels, addition, condensation, and saponification of fats (STEM_GC11OCIIlg-j-90)	3	4.5%	2	44		45***			
32. Describe the formation and structure of polymers (STEM_GC11OCIIlg-j-91)	2	3%	1	46					
33. Explain the properties of some polymers in terms of their structures (STEM_GC11OCIIlg-j-93)	2	3%	2		47	48			
34. Describe the structure of proteins, nucleic acids, lipids, and carbohydrates, and relate them to their function (STEM_GC11OCIIlg-j-95)	4	6%	2				49**	50***	
Total	66	100%	50	10	10	10	10	10	

Legend: *Problem Solving; **Information Literacy; ***Critical Thinking

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