

Earth Systems 3209

June 2019 Public Exam Outcome Report

This examination follows the specifications, conventions and standards set out in the:
Earth Systems 3209 Provincial Exam Standards

Units	1 - Introduction	4 - Forces Within Earth
	2 - Historical Geology	5 - Earth's Resources
	3 - Earth Materials	

PART I: Selected Response—Total Value: 80 Marks

Item	Curriculum Guide Page	Outcome	Cognitive Level	Outcome Description
Unit I				
1	28	114-6	L1	Identify the characteristics of a minor branch of earth science.
2	30	333-1	L2	Recognize the sequence of events in the Solar Nebula Hypothesis.
3	30	333-1	L1	Identify a factor that led to the segregation/formation of Earth layers.
4	32	333-1	L2	Determine the layer of Earth from a diagram based on a description.
5	34	333-1	L2	Identify relationships between Earth's spheres.
Unit II				
6	40	332-5	L1	Relate catastrophism to geologic time.
7	42	332-6	L2	Interpret a geologic feature from a cross-section.
8	40	332-6	L1	Identify an example of relative dating.
9	44	213-5/116-7	L3	Determine the sequence of events in a geologic cross-section.
10	42	332-6	L2	Interpret a geologic feature from a cross-section.
11	46	332-6	L2	Calculate the age of a rock based on a glacial varve calculation.
12	48	332-4	L2	Calculate a solution to a radioactive decay problem.
13	48	332-4	L3	Calculate a solution to a radioactive decay problem.
14	52	332-7	L2	Identify a method of fossilization based on a diagram.
15	56	332-4	L1	Identify a geologic time frame based on a description.
16	60	332-7	L1	Identify the result of a mass extinction.
17	60	332-4	L2	Recognize the correct sequence of evolution of organisms.
18	60	332-4	L1	Determine the dominant life form in a geological time frame.
19	60	332-7	L1	Identify the accepted explanation of a mass extinction.

Unit III 20	68	330-3	L1	Identify a characteristic of minerals.
21	68	330-3	L1	Classify a chemical formula into a mineral group.
22	70	330-3	L2	Identify a characteristic of a mineral group based on a diagram.
23	70	330-3	L2	Determine a mineral and its characteristic based on a diagram.
24	68/74	330-3	L1	Identify a mineral property based on its characteristics.
25	70, 225	213-3, Lab #3	L2	Identify a mineral property based on a diagram.
26	70, 225	213-3, Lab #3	L3	Calculate specific gravity of a mineral.
27	70, 225	213-3, Lab #3	L1	Use a mineral property to distinguish between two minerals.
28	74	116-7	L3	Analyze a diagram to identify processes in the rock cycle.
29	78	330-2	L2	Identify an igneous texture based on a diagram.
30	78/82	330-2	L3	Classify an igneous rock based on texture and composition.
31	78/82	330-2	L2	Relate an igneous rock to its texture and composition.
32	96	330-2	L2	Interpret a cross-section to identify a geologic feature.
33	86	330-2	L1	Define a class of sedimentary rocks.
34	90	330-2	L1	Identify a sedimentary feature based on a description.
35	88	330-2	L2	Analyze a diagram to classify a sedimentary rock.
36	86	330-2	L2	Relate sedimentary rocks to current velocity from a diagram.
37	88	330-2	L1	Identify a sedimentary rock based on its formation.
38	90	330-2	L2	Analyze a diagram to classify a sedimentary rock.
39	90	330-2	L2	Describe a process in the formation of a biochemical sedimentary rock.
40	94	330-2	L1	Identify an agent of metamorphism based on a description.
41	94	330-2	L2	Relate a metamorphic rock to its parent rock.
42	96	330-2	L1	Identify a metamorphic rock based on grade of metamorphism.
43	96	330-2	L2	Analyze a diagram to identify an area of regional metamorphism.
44	94	330-2	L3	Interpret a cross-section to identify a metamorphic rock.
45	104	330-2	L1	Define a type of metamorphism.
46	96	330-2	L2	Recognize the sequence of rocks when slate undergoes metamorphism.
47	98	117-7	L1	Identify a geoscience career based on a description.
Unit IV 48	104	114-2	L1	Identify a supercontinent based on a description.
49	104	114-2	L1	Recognize a feature of the Theory of Continental Drift.
50	104	114-2	L1	Identify a piece of evidence that supported Continental Drift.
51	106	115-3	L1	Identify a scientist based on their contribution to plate tectonics.
52	110	115-7	L2	Use a diagram to identify the force associated with a plate boundary.

53	110	115-7	L2	Analyze a diagram to determine a geologic feature.
54	114	115-7	L2	Use a diagram to identify a piece of evidence for Plate Tectonics.
55	116	330-12	L1	Recognize a Newfoundland geologic zone based on a description.
56	112	115-7	L2	Identify a plate boundary based on a diagram.
57	122	115-7	L3	Relate the type of plate boundary to its associated forces and environment.
58	112	115-7	L3	Analyze a diagram to identify geologic features and rock compositions.
59	120	332-7	L2	Identify the type of force associated with a diagram.
60	120	332-7	L1	Define a type of deformation.
61	122	332-7	L3	Relate the location, temperature and time to a type of deformation.
62	124	332-7	L1	Identify a fault type based on its force.
63	124	332-7	L2	Use a diagram to identify a geologic feature.
64	126	331-9	L1	Define a term related to earthquakes.
65	130	331-9	L2	Perform a calculation to compare earthquake amplitudes.
66	132	215-6	L2	Use a diagram to relate the time difference in P and S waves and earthquake location.
67	132	331-9	L3	Use a P and S wave travel-time graph to determine the distance between a seismograph station and an earthquake.
68	134	331-9	L2	Use a diagram to identify a type of volcano.
69	136	331-9	L1	Identify which type of volcanism is associated with a specific location.
Unit V 70	146	330-8	L1	Identify the type of economic mineral deposit based on a description.
71	152	330-10	L1	Use a description to identify an ore processing technique.
72	148	330-9	L1	Identify a characteristic of a type of mining.
73	160	330-10	L2	Relate the density of gas, oil and water.
74	152	330-10	L2	Analyze a diagram to identify a mineral processing technique.
75	156	330-10	L1	Identify the characteristics of a reservoir rock.
76	156	330-10	L3	Determine a force type and petroleum trap.
77	164	330-10	L2	Analyze a diagram to determine the characteristics of a fraction of petroleum separated by distillation.
78	160	330-10	L2	Identify an oil trap from a diagram.
79	146	330-8	L2	Identify the location of an economic mineral deposit based on a diagram.
80	156	214-18	L3	Interpret a diagram to determine the components of a petroleum trap.