Earth Systems 3209

June 2018 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
2 - Historical Geology
3 - Earth Materials
4 - Forces Within Earth
5 - Earth's Resources

PART I: Selected Response—Total Value: 75%

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	Identify a stage in the solar nebular hypothesis.
3	30	333-1	L1	Identify a layer of Earth based on its associated characteristics.
4	32	332-3	L2	Determine the order of formation of Earth's spheres.
5	32	333-1	L2	Identify a layer of Earth's interior.
Unit II 6	40-42	332-5 332-6	L2	Relate catastrophism to geologic time.
7	42	332-6	L2	Use a geological sequence to identify a geologic feature.
8	42	332-6	L3	Use a geological sequence to identify a relative dating feature/technique.
9	42	332-6	L1	Identify a relative dating principal/law based on a geologic scenario.
10	40	332-5	L1	Relate uniformitarianism to geologic time.
11	48	332-4	L2	Calculate a solution to a radioactive decay problem.
12	60	332-4	L1	Determine the dominant life form in a geological time frame.
13	48	332-4	L1	Use characteristics to define half-life.
14	48	332-4	L3	Calculate a solution to a radioactive decay problem.
15	52	332-7	L2	Identify a method of fossilization based on its description.
16	52	332-7	L1	Identify a condition that increases chance an organism is fossilized.
17	56	332-4	L1	Identify a geological time frame from an associated characteristic.
18	58	332-4	L2	Determine the dominant life form in a geological time frame.

Unit III 19	66	330-3	L1	Identify an element based on its chemical symbol.
20	66	330-3	L1	Identify a mineral group based on minerals composition.
21	68	330-3	L1	Define mineral based on its characteristics.
22	68	330-3	L1	Idenitfy a mineral group baased on abundance in Earth's layers.
23	68	330-3	L2	Identify a mineral property based on its characteristics.
24	70	330-3	L1	Identify a mineral property based on its characteristics.
25	70 & 225	330-3 Lab#3	L2	Identify a mineral property associated with a series of graphics.
26	70	330-3	L2	Use a mineral property to distinguish between two minerals.
27	70	330-3	L1	Identify a mineral property based on its characteristics.
28	72	330-3	L2	Destinguish between two minerals based on differences in mineral properties.
29	74	330-2	L3	Identify processes associated with the rock cycle.
30	76	330-2	L2	Classify igneous rocks based on texture and composition.
31	76	330-2	L1	Identify an igneous rock based on the environment in which it formed.
32	76	330-2	L1	Classify igneous rocks based on composition.
33	78	330-2	L1	Identify a sedimentary rock and its relevant environment.
34	80	330-2	L1	Identify minerals associated with different igneous rock compositions.
35	94	330-2	L2	Relate metamorphism to igneous rock intrusions.
36	80	330-2	L3	Use a composition chart to identify minerals in igneous rocks.
37	86	330-2	L1	Identify processes involved in the formation of igneous rocks.
38	86	330-2	L2	Identify a sedimentary rock based on its characteristics.
39	86	330-2	L1	Classify a chemical sedimentary rock.
40	90	330-2	L1	Classify the grade of coal in association with metamorphism.
41	86	330-2	L1	Identify a sedimentary rock feature based on its relevant environment.
42	88 & 92	330-2	L3	Identify a metamorphic rock and its parent rock as seen in a diagram.
43	98	117-7	L1	Identify a scientist based on the rock features they study.
44	94	330-2	L2	Recognize the stages of metamorphism associated with slate.

Unit IV 45	104	114-2	L1	Identify early theories/ideas behind movement of Earth's surface.
46	104	114-2	L1	Relate evidence to the theory of continental drift.
47	106	115-3	L1	Identify a scientist based on contribution to plate tectonics.
48	108	115-7	L1	Identify evidence used to explain the movement of tectonic plates.
49	110	115-7	L1	Identify a stike-slip fault.
50	114	115-7	L1	Identify a specific deformation feature.
51	112	115-7	L2	Use a diagram to identify a type of plate boundary.
52	124	332-7	L3	Use a diagram to identify a deformation feature.
53	116 & 191	330-12 STSE	L1	Identify a geologic zone of Newfoundland.
54	122	332-7	L3	Identify the factors associated with deformation within a mountain environment.
55	120	332-7	L2	Identify the forces associated with folded rocks.
56	124	332-7	L1	Identify charateristics of earthquake waves.
57	126	331-9	L2	Use a diagram to identify different features associated with earthquakes.
58	110	115-7	L1	Identify forces associated with a rift valley.
59	128	331-9	L2	Describe differences in velocities of types of earthquake waves.
60	124	332-7	L1	Identify names of past supercontinents.
61	112	115-7	L2	Identify the plate boundary within a mountain environment.
62	136	331-9	L3	Relate volcano types to plate boundaries.
63	138	332-3	L1	Recognize the long-term effects of volcanic activity on a global scale.
64	132	214-3, 214-10, 215-4, 215-6, 331-9, Lab #5	L2	Use the arrival times of earthquake waves to determine the distance of seismic stations from an epicenter.

Unit V 65	146	330-8	L1	Identify the characteristic that defines an ore body.
66	146	330-8	L3	Analyze a diagram to identify mineral deposit type.
67	146	330-8	L1	Identify a feature of an open pit mine.
68	148	330-9	L1	Identify an exploration technique.
69	152	330-10	L1	Identify an ore processing technique.
70	154	330-10	L1	Define a term related to petroleum.
71	156	330-10	L1	Identify the characteristics of a petroleum trap.
72	156	330-10	L2	Deteremine sequence of the evolutionary stages of petroleum formation.
73	164	330-10	L2	Analyze a diagram to identify the cracking of petroleum at different temperatures.
74	156 & 158	330-10	L2	Identify the characterics of a petroleum trap.
75	146	330-8	L3	Analyze a diagram to identify mineral deposit type.

PART II: Constructed Response—Total Value: 25%

Item	Curriculum Guide Page	Outcome	Cognitive Level	Value	Outcome Description
Unit I 76	32	332-3	L2	3%	Show connections between earth's spheres.
Unit II 77(a)	52	117-9,213-8, 214-2, 215-6, and 332-7 Core Lab	L3	2%	Indicate what information that can be gathered with reference to a fossil diagram.
77(b)	48	332-4	L3	2%	Calculate a solution to a radioactive decay problem.
Unit III 78(a)	76	330-2	L2	2%	Analyze a diagram and identify the conditions and environment for different igneous textures.
78(b)	68	330-3	L3	2%	Compare mineral properties of selected samples.
78(c)	96	330-2	L2	2%	Relate metamorphism to an associated tectonic environment.
Unit IV 79(a)	122	332-7	L2	3%	Relate plate boundaries, fault types, and associated movement.
79(b)	136	331-9	L3	2%	Relate plate boundaries, volcano types, magma composition and eruption styles.
79(c)	114	332-8	L3	2%	Identify plate tectonic evidence that supports seafloor spreading.
Unit V 80(a)	156	330-10	L3	3%	Describe a petroleum trap and its required components and processes.
80(b)	148	330-9	L2	2%	Identify environmental effects associated with open pit mining.