View Attempt 1 of 1

Title: **Quiz 1**

Started: September 23, 2011 5:39 PM

Submitted: September 23, 2011 5:52 PM

Time spent: 00:13:27

Total score: **20/20 = 100%** | Total score adjusted by 0.0 | Maximum possible score: 20

1.

High-end jewellery is commonly loaned to famous people _____.

Student Response	
A.	before they buy it
B.	because they trade between their friends
C.	since it is unfashionable to not wear expensive jewellery
D.	as a favour from the designer
E.	as a marketing tool for the designer

2.

Bonding _____.

Student Response	
A.	is a unit of measurement for precious metals
B.	is the fourth element of the Periodic Table
C.	is the glue that holds matter together
D.	is a state of matter
E.	is not present in gemstones or precious metals

3.

A positively charged atom is called _____.

Student Response	
A.	a compound
B.	a cation
C.	an electron
D.	a mixture
E.	an anion

4.

The two main divisions of igneous rocks are _____.

Student Response	
A.	mafic and felsic
B.	volcanic and sedimentary
C.	regional and contact
D.	granitic and dioritic
E.	intrusive and extrusive

5.

Which of the following describe a mineral by definition?

Student Response	
A.	crystalline
B.	naturally occurring
C.	definite chemical composition
D.	not lab-grown
E.	all

6.

An eight-sided polyhedron is called a _____.

Student Response	
A.	Tetrahedron
B.	Cube
C.	Icosahedron
D.	Octahedron
E.	Square

7.

Historically, which country has produced the most gold annually?

Student Response	
A.	South Africa
B.	Canada
C.	Venezuela
D.	China
E.	Italy

8.

DeBeers Consolidated Mines is _____.

Student Response	
A.	a group devoted to artisanal gold mining in Africa
B.	an association of independent jewellers and gemologists
C.	the company that held much of the diamond monopoly until the mid 1980's
D.	a luxury brand founded in Paris and now present globally
E.	the association that oversees ethical production of platinum group metals from South Africa

9.

Of the emeralds discussed in the lectures, which one remains uncut?

Student Response
1. Mogul Emerald
2. Hooker Emerald
3. Incomparable Emerald
4. Patricia Emerald

10.

Which country produces the best quality emeralds?

Student Response
1. Colombia
2. Egypt
3. India
4. All the above

11.

A “Canadian” diamond according to the Voluntary Code of Conduct for Authenticating Canadian Diamond Claims, is mined in Canada, but can be_____

Student Response
1. Cut and polished in Antwerp
2. Cut and polished in Cairo
3. Cut and polished in Yellowknife
4. All of the above

12.

Which of the following countries have produced historically significant diamonds?

Student Response
1. India, Australia, South Africa

2. US, Australia, Brazil
3. India, South Africa, Congo
4. South Africa, Canada, Australia

13.

What role do institutes such as the GIA play?

Student Response
1. Supply standard certifications of diamonds
2. Protect consumers
3. Protect retailers
4. Provide education
5. All the above

14.

Which diamond has the largest single cut carat size?

Student Response
1. Jubilee
2. Millennium Diamond
3. Golden Jubilee
4. Cullinan I
5. Cullinan II

15.

Trace elements are always included in mineral formulae

Student Response	Correct Answer
False	False

16.

A volcanic rock ____:

Student Response
1. forms from cooling on the surface of the Earth
2. forms cooling below the surface of the Earth
3. is an igneous rock
4. a+c
5. b+c

17.

Of the following, which are the three main types of tectonic plate boundaries?

A. Convergent
B. Asthenospheric
C. Divergent
D. Transform
E. Fracture

Student Response
1. B, C, D
2. A, B, C
3. B, D, E
4. A, C, D
5. C, D, E

18.

Mid-oceanic ridges form at ____:

Student Response
1. convergent plate boundaries
2. divergent plate boundaries

3.	mantle plumes
4.	both a+b

19.

When magma cools and solidifies under the surface of the Earth, it becomes classified as which type of rock?

	Student Response
1.	Igneous (extrusive)
2.	Sedimentary (chemical precipitate)
3.	Metamorphic (high pressure-high temperature)
☑ 4.	Igneous (intrusive)
5.	Metamorphic (low pressure-low temperature)

20.

If two minerals have the same colour and luster, which of the following are other physical properties that you could test without damaging the mineral?

[Select all that apply - wrong answers will be penalized]

	Student Response
☑ 1.	Specific gravity
☑ 2.	Refractive index
☑ 3.	Fluorescence
4.	Hardness
5.	Bulk chemistry

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Title: **Quiz 2**

Started: October 14, 2011 6:02 PM

Submitt October 14, 2011 6:29 PM

ed:

Time spent: 00:26:57

Total score: **20/20 = 100%** | Total score adjusted by 0.0 | Maximum possible score: 20

1.

Blue colour in diamonds is caused by the presence of:

Student Response	
1.	Garnet
☑ 2.	Boron
3.	Graphite
4.	Nitrogen

Score: 1/1

2.

What is the Mohs hardness of diamond?

Student Response	
☑ A.	10
B.	9.5
C.	9
D.	8
E.	7.5

Score: 1/1

3.

Which of the following minerals can scratch diamond?

Student Response	
☑ 1.	diamond
2.	beryl

3.	corundum
4.	forsterite

Score: 1/1

4.

Ideally, what element(s) comprise(s) diamond?

	Student Response
1.	Only O and C
2.	Only C
3.	C and Cl
4.	Au and D

Score: 1/1

5.

The P-T stability field for diamond is sometimes called _____.

	Student Response
A.	Diamond Pavillion
B.	The Kim Zone
C.	Craton Door
D.	La Ventana
E.	The Diamond Window

Score: 1/1

6.

Which of the following best desribes the chemical formula of diamond?

	Student Response
A.	carbon polymorph

B. moissanite
C. boron nitride
D. titanium chromium oxide
E. carbon oxide

Score: 1/1

7.

Which of the following options lists the common sources of diamond?

A. kimberlite
B. granite
C. pegmatite
D. placer deposits
E. lamprophyres

Student Response
1. D
2. A, D, E
3. A, B, E
4. B, C
5. A, B, C, D, E

Score: 1/1

8.

The type-classification (i.e., Type I / Type II) of diamonds provides an indication of a diamond's value as a gemstone because:

Student Response
1. it is assigned based on carat size and opacity
2. it is assigned based on carat size and luminescence
3. it is assigned based on opacity and inclusions

4.	it is assigned based on carat size and chemical purity / impurity
5.	it is assigned based on chemical purity / impurity

Score: 1/1

9.

An example of a mineral that is a cyclosilicate:

Student Response	
A.	is beryl
B.	has ring structures of SiO4 tetrahedra
C.	is corundum
D.	a, b
E.	a,b,c

Score: 1/1

10.

Which following statement is true regarding general relative sizes of faceted gem beryl varieties?

Student Response	
1.	red beryl < emerald < aquamarine
2.	emerald < red beryl < aquamarine
3.	red beryl < aquamarine < emerald
4.	aquamarine < emerald < red beryl
5.	emerald < aquamarine < red beryl

Score: 1/1

11.

Which of the following statements is true, from a mineralogical perspective?

Student Response

1.	Emerald is harder than diamond
2.	Emerald is harder than corundum
3.	Aquamarine is harder than emerald
4.	Aquamarine is harder than diamond
5.	Diamond is harder than emerald

Score: 1/1

12.

A 2 carat cut emerald from Colombia would be _____.

	Student Response
A.	of good size
B.	of small size
C.	of exceptional size
D.	so large it would be found in a museum

Score: 1/1

13.

Gota de aceite is a term referring a specific quality of an emerald's _____, meaning _____:

	Student Response
1.	luster: aggregates of the mineral grow radially, like a star
2.	luster: the mineral's sheen is somewhat softened, as if covered in a drop of oil
3.	habit: the mineral's sheen is somewhat softened, as if covered in a drop of oil
4.	hardness: the mineral is harder (will scratch) acetate
5.	habit: aggregates of the mineral grow radially, like a star

Score: 1/1

14.

Where are the most valuable emeralds mined?

Student Response	
A.	Colombia
B.	Austria
C.	Pakistan
D.	Brazil
E.	Canada

Score: 1/1

15.

Which mineral has historically been sometimes misclassified as ruby?

Student Response	
1.	red peridot
2.	fancy ruby
3.	bloodstone
4.	red diamond
5.	red spinel

Score: 1/1

16.

Which of the following is not a variety of gem corundum?

Student Response	
A.	ruby
B.	colourless corundum
C.	fancy sapphire
D.	sapphire
E.	tanzanite

Score: 1/1

17.

Which of the following is NOT a common source of gem corundum?

Student Response	
A.	Alkali Basalts
☑ B.	Granite
C.	Dirty Marbles
D.	Placer Deposits

Score: 1/1

18.

How would you tell the difference between an uncut blue beryl and an uncut blue corundum?

Student Response	
1.	corundum is always cloudy until it is cut
2.	beryl is harder; beryl has tapered (rather than flat) ends
3.	beryl is a hexagonal prism; corundum is tabular
☑ 4.	corundum is harder; corundum has tapered (rather than flat) ends
5.	both are cyclosilicates; that means there's no other way to tell the difference until after cutting and

Score: 1/1

19.

Historically, Sri Lanka (just southeast of India) is known for producing the finest:

Student Response	
☑ 1.	sapphire
2.	peridot
3.	goethite

4.	diamond
5.	rubies

Score: 1/1

20.

Corundum can only be red or blue.

Student Response	Correct Answer
False	False

Score: 1/1

View Attempt 1 of 1

Title: **Quiz 3**

Started: October 28, 2011 5:16 PM

Submitted: October 28, 2011 5:46 PM

Time spent: 00:30:05

Total score: **18/20 = 90%** | Total score adjusted by 0.0 | Maximum possible score: 20

1.

The type and quality of display lighting is very important to gemstone retailers. The balanced emittance of natural daylight is hard to reproduce, because compared to it:

	Student Response
1.	incandescent (tungsten) bulbs burn more intensely across the low-wavelength “blue” range
2.	incandescent (tungsten) bulbs burn more intensely across the higher-wavelength “red” range
3.	fluorescent bulbs burn more intensely across the low-wavelength “blue” range
4.	fluorescent bulbs burn more intensely across the higher-wavelength “red” range
5.	none of the above; the type of light source used does not affect the gem’s optical qualities

Score: 1/1

2.

The VISIBLE portion of the electromagnetic spectrum is in the _____ range.

Student Response
A. 260 - 350 cm
B. 260 - 350 nm
C. 400 - 700 nm
D. 400 - 700 m
E. 1 - 100 km

Score: 1/1

3.

Strongly pleochroic gemstones have:

Student Response
1. the full range of colours when viewed from different angles, like opal
2. two or even three different colours when viewed from different angles, such as spinel
3. two or even three different colours when viewed from different angles, such as tanzanite
4. the best dispersion qualities due to high refractive indices, such as diamond
5. the worst dispersion qualities due to high reflective indices, such as opal

Score: 1/1

4.

The visible portion of the electromagnetic spectrum is:

Student Response
1. at the high intensity end of the spectrum: low frequency, long wavelength
2. at the low intensity end of the spectrum: low frequency, long wavelength
3. at the high intensity end of the spectrum: high frequency, short wavelength
4. at the low intensity end of the spectrum: high frequency, short wavelength

☑	5. the middle portion; neither high nor low intensity; medium frequencies and wavelengths

Score: 1/1

5.

Internal reflection_____:

Student Response
1. is sought after when cutting diamonds
2. occurs when much of the light that enters a cut gem is returned through the table to your eye
3. is a flaw created when cutting diamonds
☑ 4. 1 and 2
5. 2 and 3

Score: 1/1

6.

Reflection and refraction are the same phenomenon

Student Response	Correct Answer
False	False

Score: 1/1

7.

A gem viewed under fluorescent light will:

Student Response
1. look the same when it is viewed under natural sunlight
2. look the same when it is viewed under incandescent light
3. look different when it is viewed under natural sunlight
4. look different when it is viewed under incandescent light
☑ 5. look different when it is viewed under natural or incandescent light

Score: 1/1

8.

Bicoloured tourmaline crystals develop because:

Student Response	
☑	1. the magma that the crystal is growing from runs out of the first and atomic-site-preferential chrom preferred chromophore begins to substitute in the crystal lattice after this happens
	2. the development of the crystal from one chromophore makes a crystal that only has room later for
	3. the crystallography is fixed upwards with regard to colouration
	4. none of the above; there's no such thing as bicolouration in tourmaline
	5. the crystallographic orientation requires different chromophores at each end

Score: 1/1

9.

Pegmatites usually form as dykes, which are:

Student Response	
☑	1. relatively thin (1-100 m) linear (planar in 3D) intrusive bodies injected into the rock around an intr
	2. thick (500m – 3 km) linear (planar in 3D) intrusive bodies injected into the rock around an intrusic
	3. large circular to semi-round intrusions inside the Earth's crust
	4. sedimentary beds which have been tipped into vertical position by tectonic stresses in the crust
	5. volcanic edifices

Score: 1/1

10.

Corrosion is a problem for gemstone development in pegmatites. Corrosion is when:

Student Response	
	1. another prospector takes over the claim on a pegmatite because the claim was not renewed immedi
☑	2. leftover volatiles like carbonate and fluorine dissolve portions of mineral crystals after they form
	3. the magma becomes enriched in certain elements because of early crystallization of other elements

4.	rainwater dissolves part of the mineral crystal, such as acid rain
5.	water in the magma dissolves part of the mineral crystal after it formed

Score: 1/1

11.

Which element is considered “essential” to the crystallographic structure of tourmaline:

Student Response	
1.	Boron (B)
2.	Thorium (Th)
3.	Beryllium (Be)
4.	Argon (Ar)
5.	Thulium (Tl)

Score: 1/1

12.

Of the following, which is NOT a gem variety found in pegmatites?

Student Response	
A.	Tourmaline
B.	Emerald
C.	Sapphire
D.	Spodumene
E.	Diamond

Score: 1/1

13.

The open spaced areas in pegmatites that house many gem specimens are often called _____.

Student Response

A.	pockets
B.	corrosion zones
C.	cores
D.	roots
E.	hot spots

Score: 1/1

14.

The geochemistry of most pegmatites is normally closely related to _____.

Student Response	
A.	granite
B.	gneiss
C.	kimberlite
D.	basalt
E.	shale

Score: 1/1

15.

Tourmaline has as its base the silicate structure of:

Student Response	
1.	Si8O22
2.	Si2O3
3.	Si6O18
4.	SiO4
5.	SiO2

Score: 1/1

16.

A fluxing agent helps pegmatites to grow bigger crystals because:

Student Response	
A.	it keeps the liquid moving, which slows the startup of new crystals so the existing ones are forced
B.	it keeps the liquid moving, which ensures that magma containing needed elements keep washing u
C.	it lowers the crystallization (freezing) point of the magma so there is more time for crystals to grov
D.	**all of the above**
E.	B and C above

Score: 0/1

17.

What are the two main colours of gem varieties of spodumene:

Student Response	
1.	pink and yellow
2.	pink and green
3.	blue and green
4.	blue and brown
5.	blue and pink

Score: 1/1

18.

What is the gem variety of the mineral zoisite?

Student Response	
A.	garnet
B.	tanzanite
C.	peridot
D.	opal
E.	kunzite

Score: 1/1

19.

Which colour of topaz is most desirable (and hence, fetches the highest prices):

Student Response
1. orange-red
2. blue-green
3. yellow-orange
4. orange-brown
5. pink to red

Score: 1/1

20.

What is the chromophore for alexandrite?

Student Response
A. Ti
B. Co
C. Cr
D. Fe
E. Cu

Score: 0/1

View Attempt 1 of 1

Title: **Quiz 4**

Started: November 19, 2011 3:21 PM

Submitted: November 19, 2011 3:46 PM

Time spent: 00:24:36

Total score: **20/20 = 100%** | Total score adjusted by 0.0 | Maximum possible score: 20

1.

What type of mine would be chosen if a deposit has a high grade, is far below the surface, and has complex geological geometry?

Student Response	
☑ 1.	underground mine
2.	placer mine
3.	open pit mine
4.	none of the above

2.

What are BC's top two commodities?

Student Response	
A.	silver and gold
B.	jade and coal
C.	copper and gold
☑ D.	coal and copper
E.	diamonds and gold

3.

Mesothermal deposits _____.

Student Response	
A.	typically form at shallow depths
B.	are associated with volcanoes
C.	are the least important of Canada's gold deposits
D.	all of these
☑ E.	none of these

4.

Different colours of gold are produced primarily from _____.

Student Response	
A.	inclusions of other minerals
B.	heating and quenching
C.	its opaque nature
D.	alloying with other elements
E.	the temperature of gold formation

5.

As a mineral, gold belongs to which crystal system?

Student Response	
A.	monoclinic
B.	hexagonal
C.	isometric
D.	triclinic
E.	tetragonal

6.

The most significant lode gold district in Canada by historical production is _____.

Student Response	
A.	Yellowknife
B.	Hemlo
C.	Bridge River
D.	Timmins
E.	Hope Bay

7.

Gold classifies as _____.

Student Response	
A.	a mineral
B.	a metal
C.	an element
D.	all of these

8.

Most lode gold deposits have a grade, in g/t, between _____.

Student Response	
A.	0.05 and 0.5
B.	2 and 15
C.	1 and 5
D.	10 and 100
E.	0.1 and 1

9.

The alchemical symbol for gold alludes to the _____.

Student Response	
A.	ocean
B.	sky
C.	sun
D.	flowers
E.	king

10.

Fair Trade jewellery and gems ensure responsible _____.

Student Response
A. social practices
B. environmental practices
C. labour practices
D. chains of custody
E. all of the above

11.

Ethical, Green, and Fair Trade practices are too costly to implement widely in the gem and jewellery industry.

Student Response	Correct Answer
False	False

12.

The film "Red Gold" was produced by _____.

Student Response
A. independent film makers
B. the State of Alaska
C. the Pebble Partnership
D. Northern Dynasty Minerals
E. the community of Bristol Bay

13.

The Pebble Deposit is _____.

Student Response

A.	a kimberlite pipe
B.	the location of a meteorite impact
C.	a mesothermal lode gold vein system
D.	a copper-gold porphyry system
E.	a placer gold pay dirt lens

14.

Cawthorn suggests the Bushveld Complex could supply the world's PGE demand for _____.

Student Response	
A.	10 years
B.	indefinitely
C.	90 years
D.	5 years
E.	40 years

15.

Common ore grade of a platinum deposit is only approximately _____.

Student Response	
A.	15 g/t
B.	0.4 g/t
C.	4%
D.	40 g/t
E.	4 g/t

16.

The Platinum Group Elements refers to which complete set of elements?

Student Response	
☑ A.	Ru, Rh, Pd, Os, Ir, Pt
B.	Pt, Pd, Au
C.	Pt, Pd, Ni
D.	Rh, Rd, Ir, Pt
E.	Ru, Rh, Pd, Os, Ir, Pt, Ag, Au

17.

The total supply of platinum in 2008 was approximately _____.

Student Response	
A.	1 tonne
B.	55 million oz
C.	0.5 tonnes
D.	2 million oz
☑ E.	6 million oz

18.

The word platinum is derived from _____.

Student Response	
A.	a tribute to Plato
B.	the Greek word platalia
☑ C.	an allusion to silver
D.	its characteristic plate like form
E.	the Italian town Plata

19.

Which historically-important producing geological environment is now a minor player with respect to silver production in Canada:

Student Response
1. VMS deposits
2. porphyry deposits
3. vein deposits
4. placer deposits
5. SED-EX deposits

20.

Two of the four most useful properties that silver shares with gold are:

Student Response
1. electrical conductivity; boiling point
2. malleability; electrical conductivity
3. atomic weight; malleability
4. malleability; boiling point
5. ductility; boiling point