Name: _____

Date: _____

Geography 12

Tectonic Processes Exercise

1) How has knowledge of our earth's interior been primarily obtained?

_____

_____

2) What are two key differences between the composition of the continents and the ocean basins?

_____

_____

3) What is the upper part of the mantle called? _____

4) What is thought to be causing the heat of the earth's inner core?

_____

5) Explain the driving force behind plate movement and where does this occur?

_____

_____

_____

6a) When a continental plate and an oceanic plate meet, the oceanic plate subducts underneath the continental plate. Why? (Hint: Think back to an earlier question)

_____

b) The Himalayas are a result of what kind of plate interaction? Name the plates involved.

_____

c) The San Andreas fault is a result of what kind of plate division? Name the plates involved.

_____

_____

d) Perhaps the most famous example of plates diverging occurs where?

_____

e) Looking at the world plate diagram, what two plates are interacting directly off our coastline and what is the dominant kind of interaction here? (Hint: See "Why is the west coast of British Columbia vulnerable to earthquakes?" under "Earthquakes: Further Information")

_____

_____

f) Try "You Make The Plates Move!" When the webpage loads, click on Plate Tectonics Activity.

7a) Alfred Wegener was born in which year? _____ Which country? _____

b) He received a PhD in _____ and also studied _____.

c) Wegener's theory of continental drift was later supported in 1960 by _____ who put forward the concept of _____.

d) According to the theory, the continents were once joined in a supercontinent called _____.

e) Utilizing the website link, describe four of Wegener's six proofs for the continents being joined at one time.

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f) Try the "Animation of continental drift..."

8) The crucial part of seafloor spreading as a proof for continental drift is the ability of rock formed from magma to record what at the time of its formation?

_____

9) The theory of continental plates is now part of the broader theory of _____ which states that the earth's plates are diverging, converging, and slipping and sliding past one another resulting in earthquakes, volcanoes, etc.

10) What type of plate division is occurring in Iceland? _____

11) The Himalayas are composed of _____ and _____ sediments.

12a) The Andes are a result of the _____ plate subducting underneath the _____ plate.

b) The Cascade volcanoes are also a result of subduction. List four cascade volcanoes.

_____

13) Island arcs are a result of convergence between two _____ plates.

14) The San Andreas fault is known as a slip fault or _____ fault or _____ fault.

15) What is the key difference between intrusive and extrusive igneous rocks?

_____

_____

16) Sedimentary rocks are associated with which energy source?

_____

17) What are two key requirements necessary for the formation of metamorphic rocks?

_____

18) What is the difference between compressive stress and tensional stress? (Hint: Look at Folds and Faults link)

_____

_____

_____

19) What is the difference between a fold and a fault?

_____

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_____

20) Sketch and label an anticline fold and syncline fold.

21) Sketch and label a normal fault and reverse fault. Give a brief description of each.

22) List and briefly describe three of the causes of earthquakes.

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_____

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_____

23) What is a tsunami?

_____

_____

24) What is liquefaction and which part of the Lower Mainland would be vulnerable to it during an earthquake?

_____

_____

_____

25) How many times greater is a 7.0 magnitude earthquake from a 3.0 magnitude erathquake?
_____

26) Why is the West Coast of British Columbia vulnerable to earthquakes?

_____

_____

_____

_____

27) Find a place in the world where an earthquake happened in the last couple of days.

Place: _____ Magnitude: _____

28) Which type of lava is generally associated with violent eruptions and why?

_____

_____

29) Make brief notes on the key differences between the three types of volcanoes. (Look carefully at the pictures)

Type of Volcano	**Description**
Cinder	
Shield	
Composite	

30) What is a caldera?

_____

_____

_____

31) Magma that cools in a vertical crack forms a _____.

32) A massive storage basin of magma is called a _____.

33) Develop a *mnemonic device* to remember the constructive and destructive influences of volcanoes includng real life examples.

example: ROY G BIV to remember the colours of the rainbow Red Orange Yellow Green Blue Indigo and Violet

34) List and give the type for two volcanoes in British Columbia.

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