

Name: \_\_\_\_\_

## **Science 20F- Review**

For your weather test you must know:

- 1) What is the Earth's radiation budget (what is reflected and absorbed)
- 2) The three methods of energy transfer.
- 3) How is heat transferred in the atmosphere.
- 4) Cloud types and names (you should be able to name pictures of clouds)
- 5) Pressure
  - Know the thirsty test tube/crushing can demonstration and be able to explain it
  - Know the difference between high pressure cells and low pressure cells (diagrams and effects)
- 6) Warm/cold fronts (what type of clouds/weather/precipitation are associated with them and be able to label a diagram.
- 7) How convection cells are formed and be able to draw them on the globe
- 8) What the coriolis effect is and you should be able to label and draw the 6 major prevailing winds
- 9) What is the jet stream and where do we find it

Review assignment:

From the following lists of words choose 12 and make flash cards with the word and a picture on the front and the definition or relevant information on the back

- |                            |                       |
|----------------------------|-----------------------|
| - electromagnetic spectrum | - cumulus             |
| - radiation budget         | - cirrus              |
| - convection               | - pressure            |
| - conduction               | - high pressure cell  |
| - radiation                | - low pressure cell   |
| - nimbus                   | - warm front          |
| - alto                     | - cold front          |
| - stratus                  | - coriolis effect     |
| - convection cells         | - prevailing winds    |
| - Jet Stream               | - condensation nuclei |

Choose 1 of the following pairs of terms and fill out a compare and contrast form:

- |                                |   |
|--------------------------------|---|
| - warm front/cold front        | - high pressure cell/ low pressure cell |
| - Jet stream/ prevailing winds |   |

(Answer the practice questions on the following pages. Make sure you hand in your booklet the day of the test!)

**Part 1- Matching (3 marks)**

Matching: Complete the following

- |                                    |                 |
|------------------------------------|-----------------|
| _____ 1. Fluffy clouds             | a) stratus      |
| _____ 2. Mid-altitude clouds       | b) nimbus       |
| _____ 3. Flat, featureless clouds  | c) cumulus      |
| _____ 4. Puffy rain cloud          | d) alto         |
| _____ 5. Delicate, wispy clouds    | e) cumulonimbus |
| _____ 6. Raining or snowing clouds | f) cirrus       |
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**Part 2- Short Answer (3 marks)**

How would you describe the following clouds?

1) nimbostratus \_\_\_\_\_

2) cirrocumulus  
\_\_\_\_\_

3) altostratus  
\_\_\_\_\_

4) Describe how a cloud is formed starting with energy from the sun. **(2 marks)**

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5) What are condensation nuclei and why is it important in cloud formation? **(2 marks)**

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6) Give a brief description of the three methods of energy transfer: **(3 marks)**

Conduction: \_\_\_\_\_

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Convection: \_\_\_\_\_

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Radiation:

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**PART 3: True or False (4 marks)**

- |   |       |
|---|-------|
| a) Energy travels from the sun to the Earth by convection   | _____ |
| b) Clouds reflect more energy from the sun than they absorb | _____ |
| c) The Earth does not absorb solar radiation                | _____ |

- d) Warm air rises because it is more dense than cool air \_\_\_\_\_
- e) Cool air falls because it is more dense than warm air \_\_\_\_\_
- f) When moving warm air gently rises over stationary cool air it is called a warm front. \_\_\_\_\_
- g) The Coriolis Effect is due to the Earth's tilt. \_\_\_\_\_
- h) Stormy weather can be associated with a low pressure system \_\_\_\_\_

**PART 4: Multiple Choice (6marks)**

- 1) Jet streams are high-speed winds in the upper atmosphere that move:
  - a) North to South
  - b) East to West
  - c) South to North
  - d) West to East
- 2) The prevailing winds in Winnipeg (50 degrees north latitude) are \_\_\_\_\_
  - a) Jet Stream
  - b) North East trade winds
  - c) Polar Easterlies
  - d) Prevailing Westerlies
- 3) What method of heat transfer is more important in creating the direction of the prevailing winds?
  - a) Conduction
  - b) Convection
  - c) Abduction
  - d) Radiation
- 4) When air rises at the equator, it moves away from the equator some distance and eventually falls. Where does it fall?
  - a) At the poles since it is coldest there
  - b) Close by because it cannot hold energy for long.
  - c) About one third of the way to the poles because it cools by then
- 5) Cloud formation requires both the cooling of warm, saturated air and...
  - a) mountains
  - b) dust particles
  - c) air molecules
  - d) lightning
- 6) What type of weather is associated with the front shown in this diagram?
  - a) Thunderstorms
  - b) Hail
  - c) Heavy rain and damaging winds
  - d) All of the above

