

# Science 1206 Review Sheet

## Unit II - Weather Dynamics

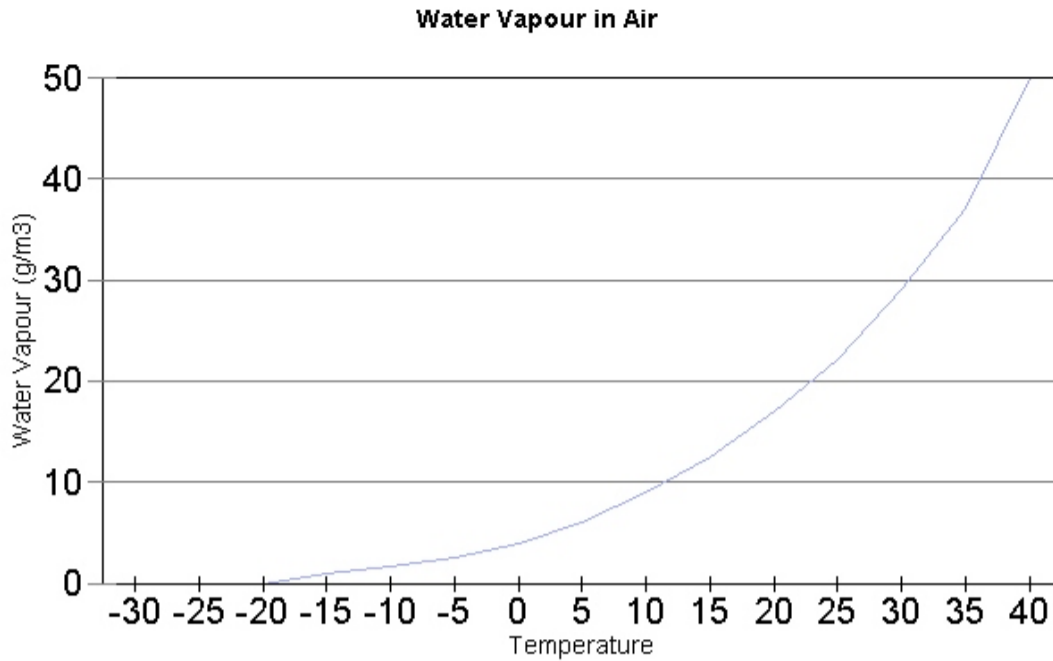
### Part A: Terms:

weather dynamics	weather	climate
Longitude	Latitude	Equatorial Region
Polar Regions	Mid-latitude Regions	Cloud
Fog	Convective Clouds	Frontal Clouds
Orographic Clouds	Anemometer	Beaufort Wind Scale
wind vane	thermometer	Temperature
Barometer	atmospheric pressure	Hygrometer
Humidity	Rain gauge	Precipitation
Relative Humidity	saturation	psychrometer
dew	dew point	transpiration
condensation	atmosphere	air
wind	Wind Chill	Pressure gradient
low pressure system	high pressure system	front
cyclone	anti-cyclone	Weather System
air mass	tropical	polar
maritime	continental	water cycle

### Part B: Long Answers

1. Differentiate between weather and climate. (p 502)
2. Describe the three main categories of clouds: (p 530-533)  
(i) convective      (ii) frontal      (iii) orographic
3. Classify the different types of Cumulus and Stratus clouds. (figure 7 p 533)
4. Define conditions necessary to form fog (p 506)
5. Identify and explain the function of instruments used in a weather station. Instruments include: thermometer, psychrometer, aneroid barometer, anemometer, and rain gauge (p 512/560)

6. Given the following graph showing Saturated Air, do the calculations below: (p 560)



- a. How much water vapour is held by saturated air at the following temperatures?
  - (i)  $20^{\circ}$
  - (ii)  $30^{\circ}$
- b. Assume the air is saturated and is holding the following amounts of water vapour. What temperature is it?
  - (i)  $30 \text{ g/m}^3$
  - (ii)  $15 \text{ g/m}^3$
- c. The air is holding the following amounts of water vapour at the following temperatures. Calculate the relative humidity.
  - (i)  $30 \text{ g/m}^3$  at  $40^{\circ} \text{ C}$
  - (ii)  $13 \text{ g/m}^3$  at  $20^{\circ} \text{ C}$

7. Given the following table of psychrometer readings, perform the following calculations: (p 560)

Dry Bulb Temp	Difference Between Wet and Dry Bulb Temperatures										
	1	2	3	4	5	6	7	8	9	10	
0	84	64	46	29	13						
2	84	68	52	37	22	7					
4	85	71	57	43	29	16					
6	86	73	60	48	35	24	11				
8	87	75	63	51	40	29	19	8			
10	88	77	66	55	44	34	24	15	6		
12	89	78	68	58	48	39	29	21	17		
14	90	79	70	60	51	42	34	26	18	10	
16	90	81	71	63	54	46	38	30	23	15	
18	91	82	73	65	57	49	41	34	27	20	
20	91	83	74	66	59	54	44	37	31	24	
22	92	83	76	68	61	54	47	40	34	28	
24	92	84	77	69	62	56	49	43	37	31	

- a. Dry bulb is  $20^{\circ}$ ; Wet bulb is  $16^{\circ}$ . Find the relative humidity.
- b. Dry bulb is  $12^{\circ}$ ; Relative humidity is 78%. Find the wet bulb reading.

8. Diagram and explain the water cycle. (p 523)
9. Define and explain evaporation, condensation, and precipitation
10. Identify weather conditions associated with the following types of air masses: (p 546)
  - (i) maritime polar
  - (ii) maritime tropical
  - (iii) continental polar
  - (iv) continental tropical
11. Describe the two types of fronts formed along pressure systems. (figure 2 p 547)
12. Describe the layers in the atmosphere - troposphere, tropopause, stratosphere. (p 510-511)