

Test Score _____

Remember this exam is open notes. However, it is better not to use your notes but simply rely on them in case you need them in a jam. Try to do as much of the test based on what you have learned so far in class. We will use imagery off the internet and the overhead project for the first part of the test. Good Luck! Remember, the final is not a test but a performance-art project.

Internet Stuff Part 1

- 1) What type of satellite is this? Visible or Infra-red
- 2) What type of satellite is this? Visible or Infra-red
- 3) Which time of day is visible more suited? Day or Night
- 4) Which time of day is infra-red more suited? Day or Night or All the time
- 5) Which airports am I pointing to?
Your choices are O'Hare Midway Waukegan DuPage Gary
 - a)
 - b)
 - c)
 - d)
 - f)
- 5a) What is the overall wind direction?
North Northeast Southeast Southwest West
- 5b) What are the overall temperatures?
40s 50s 60s 70s
- 5c) What is the overall wind speed?
5-10 mph 10-15 mph 15-20 mph 20-25mph
- 5d) What is the overall cloud cover?
Mostly cloudy partly cloudy cloudy partly sunny
- 6) Which clouds am I pointing to?
Your choices are Cumulus Stratus Cirrus Cumulonimbus Altocumulus
 - a)
 - b)
 - c)
 - d)
 - e)

Speaking of showers and t-storms, this area of storms in the Midwest and Ohio Valley is moving from west to east and is currently not severe.....

7aa) What type of cloud from the list above is most likely associated with thunderstorms.

7b) If these storms do become severe, how strong would the winds be?

- a) 35 mph b) 45 mph c) 55 mph

7c) If the storm does produce damaging hail, what size would the stones be?

- a) penny b) nickel c) quarter

7d) What are the two type of watches issued to help people prepare for these storms?

- a) Severe T-Storm b) Severe Wind Storm c) Severe Tornado d) Tornado

7e) What is the name of the facility that issues these watches? Where is it located?

7f) What agency issues local warnings related to severe weather?

- a) Fed Emergency Management Agency b) National Weather Service
c) Red Cross Center d) Home Depot Repair

8) Circle the states that have the BEST chance for severe weather later today?
Be sure to read the next question before you answer this.

Florida Georgia Mississippi Louisiana Tennessee Arkansas Texas

Oklahoma Missouri Kentucky Illinois Alabama Indiana Ohio Pennsylvania

Kansas Colorado Wisconsin Michigan Virginia

9) Does Chicago have any chance for t-storms today?

10) Based on the map provided, what percentage would you say best describes the chance?

- 10% 30% 60% 90%

11) What are the three main ingredients needed to produce t-storms?

Warm Air

Moisture

Cold Front

Instability

Warm Front

11a) Why do planes need to know about microbursts? Can you draw a plane getting caught in an unfavorable position in a microburst?

11b) Can you draw the three stages of a t-storm? Please label the different parts of them and indicate how tall they are. It would help if you used a scale to indicate height. Neatness and artistic creativity helps! See if you can draw where the updrafts and downdrafts are. Can you draw where the outflow is and where the anvil is?

11c) What does the term GOES stand for?

11d) How high above the earth's surface must a weather satellite be?

12) Where exactly is our local Doppler weather radar?

- 13) What two things does the Doppler radar look at? Be specific
- 14) What type of shape in the radar signature does a tornado typically form in?
- 15) What is the wind flow within this shape?
- 16) What is the difference between a prognosis and diagnosis?
- 17) Which month of the year has the greatest temperature swing in Chicago?
- 18) What were the names of the three hurricanes that were Category 5 in the summer of 2005?
- 19) How many category 5 hurricanes have made landfall in the US since 1900?
- 20) Where is the National Hurricane Center located?

21) On the back of this, draw the globe with the equator, the correct tilt, the correct latitude for the Tropic of Cancer and Capricorn and explain as best you can how the ITCZ forms?

22) Define these terms using these definitions: (place the letter next to choice...may use more than once) All answers are for an observer in Chicago!

- a) Sun standing still
- b) Equal days and nights
- c) tropic of capricorn
- d) tropic of cancer
- e) zero degrees latitude
- f) March 21st
- g) June 21st
- h) Sept 21st
- i) Dec 21st
- j) Tilt of the earth

solstice _____ 23 degrees _____ 1st day of fall _____

equinox _____ 23 degrees north _____ 23 degrees south _____

1st day of winter _____ 1st day of spring _____ 1st day of summer _____

equator _____ Longest day of year _____ shortest day of year _____

23)

IN the space below: draw the relationship between the sun and the earth for all four seasons. In

other words, the sun is in the middle with 4 earths surrounding it. Each earth indicates the first day of a particular season for the northern hemisphere.

24) True or False?

Warm air can hold less water vapor than cold air. _____

The dewpoint temperature is the exact measure of moisture in the atmosphere _____

Humidity should always be referred to as a relative at many levels. _____

Low pressure at the surface usually has rising air above it. _____

The temperature is warmest at the noon hour, rather at 3PM. _____

The temperature can be colder with clear skies rather than with cloudy _____

A northwest wind is a lake effect wind for Chicago _____

High pressure at the surface has sinking air above it. _____

The layer of the atmosphere we live in is the troposphere _____

The hottest day in Chicago was in June _____

Isotherms indicate lines of constant dewpoints _____

Isobars indicate lines of constant air pressure _____

The closer isobars are together, the less the air pressure changes _____

25) On the world map provided place the letter next to the airmass in the proper area.

A) Arctic

B) Continental Polar

C) Maritime Polar

- D) Maritime Tropical E) Continental Tropical F) Desert

26) Please match the approximate weather conditions with the appropriate airmass and a city or country that experiences such a climate.

- A) Frigid conditions with temperatures between -20 and 20 deg F.
Airmass _____ City/Country _____
- B) Both Warm and Cool with not much rain over a long period of time.
Airmass _____ City/Country _____
- C) Very Warm and Humid with day to day isolated showers, Sea Breezes
Airmass _____ City/Country _____
- D) Potentially Hotter and More Humid. High Heat Index Values.
Airmass _____ City/Country _____
- E) Damp and Chilly with many days of light rain...Temps in the 50s/60s
Airmass _____ City/Country _____
- F) Both Hot and Cold. Large variations in weather conditions. 4 seasons
Airmass _____ City/country _____

27) Map Analysis

On the map provided, Draw the center of the Low Pressure and the attendant warm front.
Draw the wind flow using large arrows. Where will the isobars be most tightly packed.

28) On the 4 panel map, Draw the cold front except for the 7PM map. Using your analysis technique, draw in isotherms at 5 degree intervals for each map.