

Exam #3: Chs 9-13, 50 Questions**Name:** _____ **Sec.** _____

1. Also referred to as "the weather layer":
 a. atmosphere b. thermosphere c. troposphere d. stratosphere e. asthenosphere
2. Molecule-to-molecule, direct heat transfer:
 a. conduction b. convection c. radiation d. advection e. thermal
3. Is latent heat released or absorbed when water condenses (changes from gas to liquid)?
 a. released b. absorbed c. neither; this is a trick question.
4. If a surface has low reflectivity, it _____.
 a. has low albedo b. has high albedo c. has no albedo d. is cold.
5. The second-most abundant gas in the homosphere, the layer of the atmosphere in which we live, is:
 a. carbon dioxide b. argon c. water vapor d. nitrogen e. oxygen
6. High pressure is associated with _____ air, and clear skies. Low pressure is associated with _____ air and cloudy skies.
 a. thin; dense b. rising; sinking c. sinking; rising d. clear; smoggy
7. Atmospheric pressure always decreases with increasing altitude.
 a. true b. false
8. Steam is water vapor.
 a. true b. false
9. What causes air to move from one place to another?
 a. pressure gradient force c. Coriolis force e. gravity
 b. aliens d. friction
10. Objects in motion are deflected _____ in the Northern Hemisphere.
 a. to their left b. to the right c. to their right d. none of the above.
11. Which way do winds around a Low Pressure in the Northern Hemisphere blow?
 a. Clockwise c. Northeast e. Landward
 b. Counter-clockwise d. Northwest
12. What does the Saffir-Simpson Scale use to classify hurricanes?
 a. Storm Surge c. Duration of Rain e. Central core temperature
 b. Rain amount d. Wind speed
13. Where is the majority of precipitation in a hurricane?
 a. Rain bands c. Eye e. In the northwest corner of the storm
 b. Eye walls d. Just outside the rain bands
14. Where is the calmest part of the storm?
 a. Rain bands c. Eye e. In the northwest corner of the storm
 b. Eye walls d. Just outside the rain bands
15. What is true about a hurricane as it makes landfall?
 a. The hurricane is cut off from the warm water and it decreases its strength
 b. The friction of the coastline decreases the hurricane's strength
 c. Interactions with trees, houses and buildings decrease the hurricane's strength
 d. All energy is cut off to the hurricane and it immediately stops
 e. The hurricane increases in intensity as it causes damage
16. What is hurricane season for the Eastern and Gulf Coasts of the U.S.?
 a. September through October c. July through September e. It varies each year
 b. June through November d. August through October
17. Which of the following locations has the lowest risk for hurricanes?
 a. Louisiana c. South Carolina e. California
 b. New Jersey d. Florida

18. Why do hurricanes in the North Atlantic go from East to West and then turn Northward?
- Trade winds push them east to west and Westerlies turn them northward
 - Water temperatures push them towards colder water
 - Ocean current push them to the north
 - Repelling forces from the continents push them out to sea
 - Westerlies push them to the west and Trade winds push them northward
19. Why are hurricanes uncommon on the equator?
- It is too hot there
 - It is too cold there
 - There is too much wind there
 - There is too little wind there
 - There is too little Coriolis Effect there
20. What is storm surge?
- A large amount of rainfall
 - A large increase in sea level
 - A large amount of wind
 - A sudden increase in rainfall
 - A sudden increase in wind
21. Why is coastal erosion from cyclones a problem?
- Valuable beach may be eroded causing economic problems
 - Vegetation and sand dunes may be eroded causing inland structures to become more vulnerable to storms
 - Boats on inland bays may be cut off from the ocean by sediments blocking inlets
 - Ground may become eroded bringing down structures
 - All of the above are reasons why coastal erosion from cyclones is a problem
22. Which of the following tools are used to make forecasts for hurricanes?
- Weather satellites
 - Aircraft
 - Doppler Radar
 - Weather Buoys
 - All four of the above are used to make forecasts
23. Which of the following is not something that you should do in preparation for a hurricane?
- Open all windows on your house in the path of the storm
 - Obtain flood insurance
 - Learn an evacuation route
 - Install heavy shutters on windows and latch them during the hurricane
 - Make a family emergency plan
24. What does the Fujita Scale (named after Dr. Ted Fujita, also called "Mr. Tornado") use to classify tornadoes?
- Wind speed
 - Funnel diameter
 - Temperature of the core
 - Hail size
 - Amount of damage
25. Why are East Coast beaches wider and sandier in general than West Coast beaches?
- The East Coast is nearer to a convergent boundary
 - The East Coast is nearer to a subduction zone
 - The East Coast is not near a convergent plate boundary
 - The East Coast is nearer to a deeper ocean
 - The East Coast has more rocks to erode
26. Which of the following statements is true about coastlines?
- Coastlines are the place where the continental crust meets the ocean crust
 - Coastlines are constantly changing in shape and length
 - Coastlines are at the boundaries of different plates
 - Coastline shape and length always stays the same
 - Coastlines are always wide and sandy
27. If you were watching waves from the shore and started counting the seconds between one crest to the next, what would you be measuring?
- Wave height
 - Wavelength
 - Wave period
 - Wave energy
 - Wave speed
28. What characteristic of waves increases as they hit the coastline?
- Wave height
 - Wavelength
 - Wave period
 - Wave energy
 - Wave speed
29. If you placed a small boat in waves in the open ocean (not near the shoreline) what would the motion of the boat be?
- Up and down slowly moving towards shoreline
 - Up and down slowing moving out to sea
 - Circular pattern staying mostly in the same place
 - Circular pattern slowly moving towards the shoreline
 - Circular pattern slowing moving out to sea
30. What are swells?
- Wave troughs
 - Wave crests
 - Waves that are different from other waves
 - Waves generated by storms
 - Waves in summer water

31. What happens to waves when they reach the headlands of an irregular coastline?
- They converge
 - They expend energy
 - Their wave heights increase
 - They erode the headlands
 - All of the above happen to waves at the headlands
32. Where does beach sand primarily come from?
- Deposited by rivers from continental crust
 - Deposited by volcanic eruption
 - Deposited by ocean from rocks, shells and other materials near the shoreline
 - Deposited by glaciers at the end of the last ice age
 - It was there when the Earth formed
33. The Louisiana coastline on the Gulf of Mexico is probably more vulnerable to coastal hazards than a coastline in northern California. Which statement best explains why this is?
- The Louisiana coastline is subsiding
 - The water in the Gulf is warmer
 - The currents in the Gulf are stronger
 - The recent oil spill made Louisiana more vulnerable to waves
 - The climate is warmer in Louisiana
34. How would you spot a rip-current from the shore?
- You could look for an area where waves are moving towards the shore
 - You could look for an area where waves are moving quickly away from shore
 - You could look for an area of calm surrounded by breaking waves
 - You could look for an area of intense breaking waves
 - Rip currents are not visible from the shore
35. Which of the following statements about cliff erosion is not true?
- Cliffs erode because of wave action on the shoreline
 - Adding homes to cliffs will increase the amount of weight and increase erosion
 - Building roads on cliffs doesn't increase surface runoff which increases erosion
 - Cliffs, because of the strong rocks that compose them, rarely change
 - All of the above are true about cliff erosion
36. Which of the following is not a drawback to using beach nourishment?
- It is difficult to transport the large amounts of sand necessary
 - It is expensive to transport the large amounts of sand necessary
 - The sand used for beach nourishment must be chosen carefully to determine if it will fit the ecology of the beach
 - The replenished sand will eventually erode again
 - It is more aesthetically pleasing than other solutions
37. Where does the Carbon Dioxide in our atmosphere come from?
- Volcanoes
 - Decay of organic materials
 - Burning of fossil fuels
 - Plant respiration
 - All of the above are sources of Carbon Dioxide
38. What is the difference between a glacial and interglacial period?
- Glacial periods are longer than interglacial periods
 - Glacial periods are colder than interglacial periods
 - Glacial periods are shorter than interglacial periods
 - Glacial periods are warmer than interglacial periods
 - Glacial periods are more frequent than interglacial periods
39. How is the Earth's climate changing?
- It is warming probably due to human interaction
 - It is warming probably due to increased volcanic activity
 - It is cooling probably due to human interaction
 - It is cooling probably due to increased volcanic activity
 - Scientists have not come to a consensus on what the Earth's climate is doing
40. What does the Greenhouse Effect refer to?
- The transmission of ultraviolet radiation from sun
 - The reflection of ultraviolet radiation from sun
 - The absorption of ultraviolet radiation from the sun
 - The absorption of Infrared radiation by the atmosphere
 - The reflection of ultraviolet radiation by the ozone layer
41. Which of the following describes a way in which the atmosphere is warmed?
- Shortwave radiation from the sun
 - Infrared radiation from the earth
 - Radiation absorbed by Carbon Dioxide
 - Radiation absorbed by water vapor
 - All of the above are ways in which the atmosphere is warmed

42. Which of the following is the best analogy of how the Greenhouse Effect works?
- A greenhouse — heat gets in through the windows and plants generate heat that is all trapped inside
 - A microwave oven — heat is produced in the oven and can't get out
 - A person in a blanket — the person can radiate heat, some of it gets trapped in the blanket, some of it goes out in the surrounding air
 - A teakettle— water is heated and it bursts out of the holes
 - A cold-blooded animal — It receives heat from the sun during the day and slowly radiates the heat away during the evening
43. Which gas accounts for the majority of the anthropogenic Greenhouse Effect?
- Carbon Dioxide
 - Oxygen
 - Methane
 - Water Vapor
 - Halocarbons
44. What best describes how Carbon Dioxide concentrations in the atmosphere have changed in the last 500 years?
- Concentrations were steady until 1900 when they began to increase
 - Concentrations increased until 1900 when they began to decrease
 - Concentrations decreased until 1900 when they began to increase
 - Concentrations varied wildly until 1900 when they became more steady
 - Concentrations have remained constant throughout history
45. How have global temperatures changed over the last 800,000 years?
- They have been steady
 - They have been increasing
 - They have been decreasing
 - They have increased and decreased many times
 - There is no way to know with our current knowledge
46. Which of the following can contribute to climate change?
- Human activities
 - Volcanic eruptions
 - Changes in solar energy
 - Asteroid impact
 - All of the above can contribute to climate change
47. What is the significance of the Ocean Conveyor Belt?
- It is capable of causing rapid changes in climate
 - In the Atlantic, it is responsible for keeping Europe warming than it would be
 - In the Atlantic, it is driven by cooling of the water near Greenland
 - Climate change could cause the belt near Greenland to slow, cooling areas in Europe
 - All of the above are reasons for the importance of the Ocean Conveyor Belt
48. Why will the sea level rise as a response to global warming?
- Increased temperatures will cause earth's plates to swell, pushing the ocean floor upwards
 - Increased temperatures will cause ocean life to die and the ocean will subside
 - Increased temperatures will cause an increase in ocean life and the ocean will swell
 - Increased temperatures will cause the ocean water to expand
 - Global warming is not expected to cause the sea level to rise
49. Which of the following is a problem associated with ice sheets melting?
- Melting ice sheets adds water to the ocean, raising the sea level
 - Melting ice sheets adds fresh water to the ocean, changing global ocean currents
 - Some places rely on water from the ice sheets to replenish their water supply
 - Melting ice sheets changes the habitat for polar bears, walruses and some sea birds
 - All are problems associated with the ice sheets are melting
50. Which of the following is not a way to reduce emissions from Greenhouse Gases?
- Improve efficiency of power plants
 - Change over to energy sources that emit less Greenhouse gases
 - Reduce our use of fossil fuels
 - Capture Greenhouse gas emissions from power plants and release them in the upper atmosphere
 - Capture Greenhouse gas emissions from power plants and store them in the rocks below the Earth's surface
51. On your Scantron, name the largest fire in Los Angeles County history.
52. On your Scantron, indicate the deadliest natural disaster to strike the United States.