

EUROPEAN UNIVERSITY OF LEFKE
MASTER PROGRAM IN ENVIRONMENTAL SCIENCES/IGSR
ES 502 PRINCIPLES OF ENVIRONMENTAL SCIENCE SPRING 14-15 QUIZ EXAM

Date: 27. 05. 2015

Instructor: Prof. Dr. Hüseyin Oğuz

Duration:09:00-10:00

Room#: AS 004

Student Registration No:_____

Student Name-Surname:_____

1. The two main gases making up the lower atmosphere are
 - A. helium and hydrogen.
 - B. carbon dioxide and nitrous oxide.
 - C. oxygen and methane.
 - D.** nitrogen and oxygen.
 - E. oxygen and carbon dioxide.

2. The atmospheric zone where most weather events occur is the
 - A. stratosphere.
 - B. thermosphere.
 - C.** troposphere.
 - D. mesosphere.
 - E. stratopause.

3. The correct sequence of atmospheric zones upward from the earth's surface is
 - A. stratosphere, troposphere, mesosphere, thermosphere.
 - B.** troposphere, stratosphere, mesosphere, thermosphere.
 - C. mesosphere, stratosphere, troposphere, thermosphere.
 - D. thermosphere, stratosphere, troposphere, mesosphere.
 - E. troposphere, mesosphere, stratosphere, thermosphere.

4. When cool, dry air sinks from the upper atmosphere toward the Earth's surface, it is
 - A. compressed and cooled further.
 - B. allowed to expand and become warmer.
 - C.** compressed and becomes warmer.
 - D. forced to release any remaining moisture.
 - E. going to hold more water because there is more water vapor closer to the Earth's surface.

5. A social or policy concern related to climate change might be
 - A. the change in migratory patterns of birds.
 - B. an increased land area in some countries due to the melting of glaciers.
 - C.** increased drought in agricultural regions resulting in famine.
 - D. warmer average temperatures.
 - E. movement of tectonic plates.

6. Paying to plant trees because you use carbon in your daily life would be an example of you participating in

- A. carbon reduction.
- B. cap and trade.
- C.** carbon offsets.
- D. carbon sequestration.
- E. going carbon neutral.

7. When El Niño occurs every three to seven years, a mass of warm Pacific water that is usually pushed westward by trade winds

- A.** surges back eastward toward South America.
- B. becomes much warmer than usual, strengthening trade winds.
- C. cools dramatically.
- D. sinks and therefore cools substantially.
- E. surges northward toward Japan.

8. As far as we are currently aware, who were the first people to notice the El Niño Southern Oscillation cycle?

- A. Scientists studying atmospheric changes.
- B. Meteorologists.
- C. Indigenous people in South America.
- D.** Peruvian fishermen.
- E. Colonial governors in South America from Spain.

9. Most of the excessive carbon dioxide that is expected to cause global warming is generated by

- A. green plants.
- B. burning of fossil fuels.
- C. production of cement and clearing of forests.
- D. All of these are correct.
- E.** burning of fossil fuels and production of cement and clearing of forests only.

10. What are the ecological implications of global warming?

- A.** Plants and animals that are residing in fragmented habitats may not be able to move to a suitable habitat.
- B. In general, plants and animals will probably benefit from warmer temperatures.
- C. Since farmland may be lost, the habitats for plants and animals will increase in area.
- D. Since biodiversity is usually higher in warmer, milder climates, it will probably be increased.
- E. Tropical ecosystems will get even warmer than they are now.

11. Proponents of climate change say that given what we know about the probability of the greenhouse effect, the best thing to do is
- A. immediately cease all industrial activity.
 - B. wait and see how much temperatures change before we change our habits.
 - C.** severely cut back on production of greenhouse gases.
 - D. not worry about greenhouse gas production.
 - E. focus on the development of technological advances to help decrease the effects of climate change.
12. The amount of CO₂ released by human activities per year is approximately _____.
- A. 30 million tons
 - B. 300 million tons
 - C. 3 billion tons
 - D.** 30 billion tons
 - E. 300 billion tons
13. _____ ozone is harmful, damaging plants and human health while ozone at the _____ level screens out mutagenic ultraviolet radiation.
- A. Stratospheric; troposphere
 - B. Thermospheric; mesosphere
 - C.** Tropospheric; stratosphere
 - D. Mesospheric; thermosphere
 - E. Stratospheric; mesosphere
14. There are serious signs that ozone depletion may lead to
- A. UV-caused skin cancers.
 - B. UV-caused blindness.
 - C. IR-caused sunburn.
 - D. All of these are correct.
 - E.** UV-caused skin cancers and UV-caused blindness.
15. The _____ is an international treaty designed to lower greenhouse gas emissions.
- A. Tokyo Accord
 - B. Kyoto Declaration
 - C. International Agreement on Global Warming
 - D.** Kyoto Protocol
 - E. Tokyo Principle
16. The phenomenon where cool, dense air sits under a layer of lighter warmer air is known as a _____.
- A. heat sink
 - B. heat island
 - C.** temperature inversion
 - D. Milankovitch cycle
 - E. thermocline

17. Nineteen of the 20 warmest of the last 150 years have occurred since 1980.

TRUE

18. An increase in the albedo effect would mean there would be

- A.** an increase in reflectivity.
- B. an increase in the amount of carbon dioxide levels in the atmosphere.
- C. an increase in the amount of ultraviolet light absorbed by the atmosphere.
- D. an increase in heat absorption.

19. Which of the following would have the highest albedo?

- A.** Fresh snow
- B. Open water
- C. Forest
- D. Soil

20. The change in ocean temperatures brought on by climate change could lead to an extreme cold period in Europe due to a change in the

- A.** thermohaline circulation.
- B. El nino/La nina oscillation.
- C. albedo effect.
- D. Milankovitch cycles.

21. The air pollutant least successfully removed from the air by technologies in developed nations is

- A. carbon dioxide.
- B. sulfur oxides.
- C.** nitrogen oxides.
- D. particulate matter.
- E. VOCs.

22. Primary pollutants are those that are

- A.** released directly in dangerous forms.
- B. produced in the greatest quantities.
- C. the most dangerous.
- D. the most threatening to people.
- E. classified by the EPA as the most dangerous and abundant.

23. _____ is/are examples of secondary pollutants.

- A. Aerosols
- B. Volatile organic compounds
- C.** Photochemical oxidants
- D. Combustion gases
- E. Dust from soil erosion

24. There has been an increase in frequency and intensity of storms and hurricanes.

TRUE

25. A major source of volatile organic compounds (VOCs) is

- A.** incomplete burning of hydrocarbons.
- B. combustion of sulfur-containing fuel.
- C. photochemical oxidation.
- D. CO in the atmosphere.
- E. CO₂ in the atmosphere.

26. The "ozone hole" is a depletion currently most serious

- A. at the most populated latitudes.
- B. over North America.
- C. in tropical latitudes.
- D. near the Hadley cells.
- E.** near the poles.

27. The most common human health response to air pollution is

- A.** inflammatory responses in sensitive tissues.
- B. lung cancer.
- C. blindness caused by deteriorating eye tissues.
- D. skin cancer.
- E. heart disease.

28. One of the principal ways lakes suffer from acid deposition is that

- A. rocks on the bottom begin to dissolve.
- B.** fish eggs die and fish populations fall.
- C. aquatic vegetation turns yellow.
- D. plants grow excessively and choke other life.

29. What type of buildings and monuments are most susceptible to acid damage?

- A. granite and basalt
- B. wood
- C.** limestone and marble
- D. concrete and brick
- E. brick and bronze

30. The use of scrubbers, precipitators, and filters on power plants and other "smokestack" industries probably accounts for a(n)

- A. increase in nitrogen oxides.
- B.** decrease in sulfur oxides and solid particulate matter.
- C. decrease in volatile organic compounds, carbon monoxide, solid particulate matter, and lead.
- D. decrease in solid particulate matter and lead.
- E. decrease in nitrogen oxides, sulfur oxides, volatile organic compounds, solid particulate matter, and lead.

31. The _____ is an international treaty designed to eliminate CFCs.

- A. Montreal Accord
- B. Kyoto Protocol
- C. International Agreement on CFC Reduction
- D.** Montreal Protocol
- E. Clean Air Act

32. Worldwide, air pollution control efforts are least advanced or least successful in major cities of developing countries.

TRUE

33. The structure on an automobile that removes nitrogen oxides is a(n)

- A.** catalytic converter.
- B. scrubber.
- C. air filter.
- D. electrostatic precipitator.

34. Cap and trade policies have been successful in lowering the levels of carbon dioxide and CFCs.

FALSE

35. Wind currents

- A.** send air pollution from one continent to the next.
- B. keep CFCs from reaching the ozone hole.
- C. eliminate the movement of dust particles from watershed to watershed.
- D. circulate global carbon dioxide to regions with more vegetation for photosynthesis.

36. Most of the weather of the world is based upon changes in the moisture, pressure, and/ or temperature of the

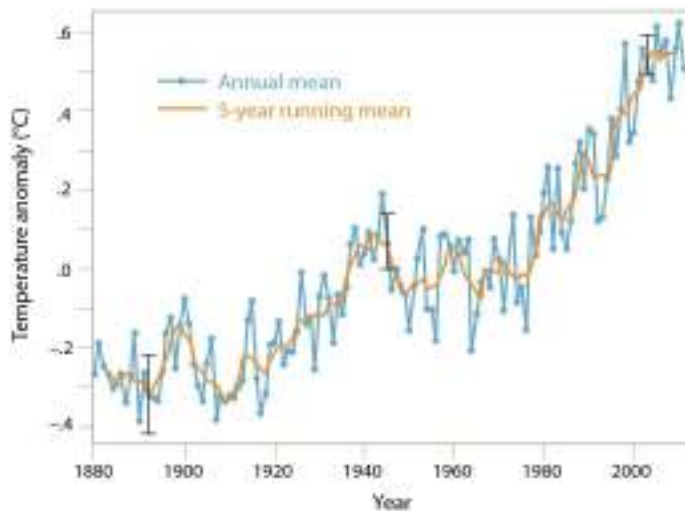
- A.** troposphere.
- B. thermosphere.
- C. mesosphere.
- D. stratosphere.

37. As climate change continues, we expect that the countries with the

- A. greatest resources will experience the greatest impacts.
- B. fewest resources will experience the lowest impacts.
- C. largest coastlines will experience the greatest impacts.
- D.** fewest resources will experience the greatest impacts.

38. The inside of a car or greenhouse would not heat up as much in the presence of sunshine if
- A. sunlight could pass through glass more easily than through air.
 - B. infrared radiation passed through glass as easily as sunlight.**
 - C. infrared radiation could not pass through glass as easily as sunlight.
 - D. air was circulated within the car or within the greenhouse.
39. Current levels of atmospheric carbon dioxide are
- A. decreasing because surplus carbon dioxide is being absorbed by the arctic permafrost.
 - B. nearly 400 ppm, higher than they have been in 800 000 years.**
 - C. fluctuating greatly but are starting to increase again after a downward trend in the 1990s.
 - D. remaining high but steady.

GLOBAL LAND-OCEAN TEMPERATURE INDEX



40. The global temperature pattern seen in the figure given above
- A. reveals a year-by-year increase in temperature every year since 1980.
 - B. suggest that mitigation of carbon dioxide is urgently needed.**
 - C. shows no clear trend in temperature change for more than 120 years.
 - D. reflects the results of the destruction of the ozone layer.
41. Deliberate campaigns of misinformation with the intent to create mistrust in climate science have been vigorously pushed by
- A. economists who have no faith in alternative energies.
 - B. developing nations who blame developed nations for climate problems.
 - C. organizations and corporations who stand to lose profits if fossil fuel use is reduced.**
 - D. members of the scientific community who have alternate explanations for climate change.
42. Which one of the following is most associated with an air-pollution disaster?
- A. a temperature inversion.**
 - B. shutdown of a power plant.
 - C. high winds.
 - D. increased industrial production.

43. Which of the following gases by virtue of its enormous amount in the atmosphere has the greatest impact on global climate change?
- A. carbon dioxide (CO₂).
 - B. nitrogen (N₂).
 - C. methane (CH₄).
 - D. nitrous oxide (N₂O).
44. Which one of the following global climate changes is most associated with increased hurricane activity?
- A. melting polar ice caps.
 - B. increased desertification in Africa.
 - C. warmer oceans.
 - D. melting glaciers in Alaska.
45. Which one of the following air pollutants is not primary pollutant?
- A. sulfur dioxide (SO₂).
 - B. nitrogen oxides (NO_x).
 - C. carbon monoxide (CO).
 - D. Peroxyacetyl nitrate (PAN).
46. Which one of the following illustrates an anthropogenic form of pollution?
- A. a large plume of ash from an erupting volcano.
 - B. large clouds of smoke from a forest fire caused by lightning.
 - C. sulfur dioxide released from a coal burning power plant.
 - D. sea salt aerosols in the air above the ocean.
47. Which one of the following does not illustrate a natural form of pollution?
- A. a large plume of ash from an erupting volcano.
 - B. large clouds of smoke from a forest fire caused by lightning.
 - C. sulfur dioxide released from a coal burning power plant.
 - D. sea salt aerosols in the air above the ocean.
48. Burning fossil fuels in a low oxygen environment will most likely produce
- A. carbon monoxide.
 - B. hydrogen peroxide.
 - C. sulfuric acid.
 - D. methane.
49. Which of the following is a major anthropogenic source of volatile organic compounds (VOCs)?
- A. coal-fired electrical generating plants.
 - B. agricultural fertilizers.
 - C. incompletely combusted fossil fuels from vehicle exhaust.
 - D. nuclear power plants.