

STUDENT'S ID NO: _____ SIGNATURE: _____



UNIVERSITY OF GHANA

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DEPARTMENT OF TEACHER EDUCATION

SCHOOL OF EDUCATION AND LEADERSHIP

COLLEGES OF EDUCATION

END OF SEMESTER ONE EXAMINATIONS FOR LEVEL 300, 2021/2022

B.ED. PROGRAMME

COURSE CODE: TEJS 333

COURSE TITLE: WEATHER AND CLIMATE

Instruction: Answer all questions in Section A and any three questions in Section B.

Time: 2 hours

SECTION A

[25 Marks]

Answer all the questions in this section.

1. The atmospheric condition of your community at a particular time and place is termed.
 - A. climate
 - B. sky
 - C. space
 - D. weather
2. A region can be described under a particular climate when it is ...
 - A. observed on daily basis
 - B. stable for one year
 - C. studied for at least 25 years
 - D. the same for a week

3. A Level 200 geography student wants to know how much rain falls in her village. Which of these statements would you recommend to her?
- A. Set a rain gauge to measure the amount of rainfall
 - B. Use a hygrometer to measure moisture already in the atmosphere
 - C. Use an anemometer to record the wind direction for the rain falls
 - D. Use wind vane to measure the speed of wind before the rain
4. The instrument used to measure the speed of wind is
- A. anemometer
 - B. hygrometer
 - C. pressure sensor
 - D. wind vane
5. The gas with the largest volume in the earth's atmosphere is.....
- A. argon
 - B. carbon dioxide
 - C. nitrogen
 - D. oxygen
6. Hurricanes are examples of
- A. atmospheric disturbances
 - B. atmospheric pressure
 - C. structure of the atmosphere
 - D. wind system
7. In which of these spheres of the atmosphere does temperature increase with height?
- I. mesosphere
 - II. thermosphere
 - III. stratosphere
 - IV. troposphere
- A. I only
 - B. I & II only
 - C. I, II & III
 - D. II, III & IV
8. In which of the layers of the atmosphere is the ozone layer located?
- A. exosphere
 - B. ionosphere
 - C. stratosphere
 - D. thermosphere

9. The gases that absorb longwave radiation are called
- A. greenhouse air
 - B. greenhouse gases
 - C. greenhouse transmits
 - D. greenhouse warming
10. The amount of water/moisture in the atmosphere is termed as
- A. atmospheric moisture
 - B. atmo-hydro
 - C. humidity
 - D. Saturation point
11. Which of the following least affect the rate of evaporation?
- A. Amount of accessible water
 - B. Salt content of the water
 - C. Temperature of available wind
 - D. Warmness or coldness of the wind
12. Which of the following precipitation types is common in African?
- A. Hail
 - B. Rainfall
 - C. Sleet
 - D. Snow
13. A large body of air that horizontally moves over the earth's surface with unique characteristics is called a/an
- A. air balloon
 - B. air body
 - C. air mass
 - D. maritime air
14. Which of the following winds can make a sailing ship to stuck on the ocean for many days?
- A. Continental Trade Winds
 - B. Equatorial Trough
 - C. Horse Longitudes
 - D. Trade Winds
15. Clouds that have height from 2000 to 6000 meters are called?
- A. Alto
 - B. Cirro
 - C. Cumulus
 - D. Strato
16. The horizontal atmospheric heat transfer is known as
- A. advection
 - B. convection
 - C. conduction
 - D. radiation

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17. The depletion of solar radiation takes place through the process of absorption, scattering, and
A. radiation
B. reflection
C. refraction
D. retraction
18. The balance between incoming energy from the sun and outgoing energy from earth constitute?
A. Solar radiation
B. Energy balance
C. Terrestrial radiation
D. Energy saving
19. How would you describe the process of heat transfer from a warmer to colder object until both temperatures are equalised?
A. conduction
B. convection
C. radiation
D. evaporation
20. When fluids, liquids, and gases transfer heat from one medium to another in motion it is described as
A. conduction
B. convection
C. radiation
D. evaporation
21. How would you describe the process where the earth gives out energy through the atmosphere to space?
A. Solar radiation
B. Energy balance
C. Terrestrial radiation
D. Energy saving
22. The difference between in incoming and outgoing shortwave and longwave radiation is represented in radiation balance equation as.....
A. $R_{net} = SW_{net} + LW_{net}$
B. $R_{net} = SW_{net} - LW_{net}$
C. $R_{net} = LW_{net} - SW_{net}$
D. $SW_{net} = R_{net} + LW_{net}$

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23. What would happen when air in a region of the earth is highly heated for a long time?

The region develops

- A. high air pressure
- B. low air pressure
- C. medium air pressure
- D. none of the above

24. The movement of air masses is known to be from areas of

- A. high pressure to areas of low pressure
- B. low pressure to areas of high pressure
- C. high pressure to areas of high pressure
- D. low pressure to areas of low pressure

25. In your opinion, which air mass from the South Atlantic Ocean dominates West Africa from April to October and brings monsoon rainfall?

- A. Tropical Continental Air Mass
- B. Tropical Maritime Air Mass
- C. Equatorial Maritime Air Mass
- D. North East Trade Wind

SECTION B

[75 Marks]

Answer any three questions in this section.

1. a) State **four** (4) types of weather conditions. [8 marks]
b) Write **four** (4) meteorological instruments. [8 marks]
c) Describe **three** (3) elements of weather. [9 marks]
2. a) In three ways, explain how climate is different from weather [9 marks]
b) Discuss the assertion that "the higher you go the cooler it becomes within the troposphere." [7 marks]
c) List the two main types of radiation [4 marks]
3. a) What is *Normal lapse rate*? [3 marks]
b) List **three** (3) constant gases in the atmosphere. [6 marks]
c) State **three** (3) characteristics of the stratosphere. [6 marks]
d) Describe the evolution of the atmosphere to its present state. [10 marks]
4. a) What is evaporation? [4 marks]
b) Outline **three** factors affecting the rate of evaporation in an area. [9 marks]
c) Explain each of the following terms.
i. relative humidity
ii. specific humidity
iii. absolute humidity [12 marks]
5. a) What are *air masses*? [3 marks]
b) Describe how air masses are formed [10 marks]
c) State **three** (3) characteristics of **two** major air masses which affect West Africa. [12 marks]