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UNIVERSITY OF GHANA

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DEPARTMENT OF TEACHER EDUCATION

SCHOOL OF EDUCATION AND LEADERSHIP

END OF YEAR ONE FIRST SEMESTER EXAMINATION 2021/2022

B. ED PROGRAM

TEJS 221: BIOPHYSICAL ENVIRONMENTAL SYSTEMS

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

Time: 2 hours

1. Which of the following is not a process of chemical weathering?
 - a. Carbonation
 - b. Exfoliation
 - c. Hydrolysis
 - d. Oxidation
2. The soil formation starts from weathering of parent rock to give a layer of loose, broken materials known as
 - a. Fragment
 - b. Organic matter
 - c. Regolith
 - d. Soil
3., refers to the study of soil and its characteristics, utilization and origin.

- a. Geology
 - b. Pedology
 - c. Soilology
 - d. Sedimentology
4. The breakdown of rocks into large rectangular-shaped blocks is referred to as?
- a. Abrasion
 - b. Block disintegration
 - c. Granular disintegration
 - d. Unloading
5. The lower portion of the is where air crafts operate due to absence of water vapour, clouds and turbulent weather conditions.
- a. Mesosphere
 - b. Stratosphere
 - c. Thermosphere
 - d. Troposphere
6. The process of weathering where a rock losses oxygen element to disintegrate is termed as.
- a. Acidic reaction
 - b. Ionization
 - c. Reduction
 - d. Oxidation
7. A line of weakness in the bedrock along which there has been some displacement of rock strata relative to one another is termed as.....?
- a. Break
 - b. Crack
 - c. Fault
 - d. Fracture
8. The two types of forces that operate in the earth crust are tensional and?
- a. Compressional
 - b. Gravitational
 - c. Kinetic
 - d. Potential

9. Which of the following best explain the correct sequence of layers of the atmosphere in descending order?
- A. Troposphere, Thermosphere, Mesosphere, Stratosphere
 - B. Thermosphere, Mesosphere, Stratosphere, Troposphere
 - C. Thermosphere, Troposphere, Stratosphere, Mesosphere
 - D. Stratosphere, Mesosphere, Thermosphere, Troposphere
10. Rock weathering undergoes several processes. Which of the following is the final product of rock weathering?
- A. Deposition of rock particles
 - B. Removal of weathered materials
 - C. Formation of soils
 - D. Transportation of mineral matter
11. Which of the following best explain attrition as a process of river erosion?
- I. It is a process whereby boulders and stones wear away the river banks and bed.
 - II. It occurs when sediment particles knock against the bed or each other and break,
 - III. It occurs when the force of fast-flowing water hits the bed and banks and forces water and air into cracks in the bedrock.
 - IV. It occurs when acidic water dissolves rocks such as chalk or limestone.
- A. I Only
 - B. II Only
 - C. III Only
 - D. IV Only
12. The reason for keeping thermometer inside a Stevenson's screen is to prevent
- A. direct sunshine from affecting readings on the thermometer
 - B. thieves from damaging the thermometer
 - C. birds from making their nests in the screen
 - D. lighting from damaging the thermometer

Study the climatic chart below and use it to answer questions 11 to 13

Month	J	F	M	A	M	J	J	A	S	O	N	D
Temperature (°C)	13	13	14	16	18	21	23	24	22	19	16	13
Rainfall (mm)	125	100	125	75	50	12	0	0	25	75	150	150

13. Calculate the mean annual temperature.

- A. 17.7°C
- B. 20.7°C
- C. 212°C
- D. 20.7°C

14. What is the annual range of temperature?

- A. 9°C
- B. 8°C
- C. 7°C
- D. 10°C

15. Calculate the total amount of rainfall?

- A. 787mm
- B. 878mm
- C. 887mm
- D. 998mm

16. Which of the following statements best describe the hydrological circle?

- I. It has no start or end
 - II. It is also called the water circle
 - III. Evaporation from the earth surface may disappear
 - IV. Water vapor may condense to form cloud
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- A. I and IV only
 - B. I, II and IV only

- C. III, IV and I only
- D. III and IV only

For items 17 to 20, write appropriate responses in the spaces provided.

17. State one importance of the hydrosphere.

i.

18. Give one way by which the atmosphere supports life.

ii.

19. What is mass wasting

.....
.....

20. Over a cliff where there are highly jointed rocks, frost action or freeze-thaw events as a result of temperature changes cause pieces of rock to break from the main joint blocks and also cause joints to crack through. This will cause a well jointed rock to lose its support and hence fall to the ground. State the type of mass wasting that has been described.

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SECTION B

[30 Marks]

Answer any three questions from Section B

1. a. Distinguish between Physical and Chemical weathering. [2 marks]

b. Write short note on the following chemical weathering processes

i. Oxidation [2 marks]

ii. Hydrolysis [2 marks]

iii. Carbonation [2 marks]

c. State two (2) importance of weathering. [2 marks]

2. Write short notes on the following processes that produce landforms and support your answers with diagrams.