

**M.Sc. ENVIRONMENTAL SCIENCE
FOURTH SEMESTER
ENVIRONMENTAL GEOSCIENCES AND METEOROLOGY
MEV-401**

Duration : 3 hrs.

Full Marks: 70

[PART-A: Objective]

Time : 20 min.

Marks : 20

Choose the correct answer from the following:

1X20=20

- Alfred Wegener proposed
 - Continental drift hypothesis
 - Plate tectonic theory
 - Both
 - None
- Magnitude of an earthquake is measured by
 - Richter scale
 - Modified Mercalli above
 - Seismograph
 - Both A and B
- Which of the following statement(s) is/are true?
 - Stress causes strain
 - Strain causes stress
 - Only (i)
 - Only (ii)
 - Both (i) and (ii)
 - None
- Which is true in terms of marble and limestone?
 - Marble is sedimentary and Limestone is igneous
 - Marble is igneous and Limestone is sedimentary
 - Marble is sedimentary and Limestone is metamorphic
 - Marble is metamorphic and limestone is sedimentary
- Minerals need to be conserved because
 - They are renewable.
 - They are depleting rapidly.
 - They are needed for country's industrial development.
 - Their formation is very fast.
 - (i) and (ii)
 - (ii) and (iii)
 - (iii) and (iv)
 - All of above
- Rolling and saltation are associated with
 - Erosion of sediments
 - Weathering of sediments
 - Deposition of sediments
 - All of above
- The giant landmass where all continents were connected
 - Laurasia
 - Gondwana
 - Pandwana
 - Pangaea

8. New oceanic lithosphere forms at _____
- divergent plate boundaries
 - convergent plate boundaries
 - transform plate boundaries
 - All of above
9. Thermometer to measure ambient temperature is kept at height of ---- to get rid of terrestrial radiation
- 30 cm
 - 1.20 m
 - 60 cm
 - 2.50 m
10. Wind speed is measured by
- Wind van
 - Cup anemometer
 - Both (a) and (b)
 - None of above
11. The homosphere region of the atmosphere extends from
- Earth's surface to 88 km
 - 35 to 70 km
 - Above 80km
 - Less than 30 km
12. In which region of the atmosphere is convective layer is found?
- Mesosphere
 - Troposphere
 - Stratosphere
 - Thermosphere
13. Which of the following factors does not affect in insolation?
- Distance of earth from the sun
 - Altitude of the sun
 - Length of the day
 - None of the above
14. Which portion of the earth experiences more heat loss than receive?
- Tropics
 - Sub-tropics
 - Temperate
 - Polar
15. Which of the following is a type of low level cloud?
- Cirrus
 - Altostratus
 - Stratus
 - All the above
16. The gaseous atmosphere surrounding earth is held in place by which of the following force?
- Centripetal force
 - Ohm's Law
 - Centrifugal force
 - Gravitational force
17. Using the knowledge of Climatology in navigation of ships in the ocean is an example of
- Physical Climatology
 - Dynamic Climatology
 - Regional Climatology
 - Applied Climatology
18. Which of the following is/are not the climate criteria in Koeppen's classification
- Temperature
 - Rainfall
 - Humidity
 - All of these

19. Campbell Stokes is an instrument to measure
- a. Solar radiation
 - b. Humidity
 - c. Cloud cover
 - d. Wind velocity
20. Forecasting weather within the next six hour duration is known as
- a. Synoptic forecasting
 - b. Statistical forecasting
 - c. Analogue forecasting
 - d. Nowcasting

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[PART-B : Descriptive]

Time: 2 HRS 40 MINS

Marks : 50

[Answer question no.(1) & any four (4) from the rest]

1. What are the arguments in support of continental drift hypothesis? Discuss how limitations of Continental drift hypothesis are overcome by Plate tectonic theory. 3+7=10
2. Discuss concepts of stress and strain. Write about mechanism of fold and faults. 5+5=10
3. Write briefly about (*any two*): (a) Mountain building
(b) Glacier and its significance
(c) Types of rocks and their formation 5+5=10
4. Write about causes, consequences and mitigation of floods in North east India 10
5. Write about the composition of atmosphere. Discuss the thermal structures of atmosphere with suitable diagram. 3+7=10
6. Write short note on (*any two*):
a) Atmospheric heat budget
b) Types of clouds
c) Factors affecting insolation 5+5=10
7. Define climatology. Describe the scope and application of climatology through the various branches. 2+8=10
8. Describe the important characteristics of the Indian Climate. Discuss different factors influencing the Indian climate. 4+6=10

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