

Roll No.

E-581**M. Sc. (Second Semester) (Main/ATKT)****EXAMINATION, May-June, 2021**

ENVIRONMENTAL SCIENCE

Paper First

(Meteorology Climatology)*Time : Three Hours]**[Maximum Marks : 80***Note :** Attempt all Sections as directed.**Section—A**

1 each

(Objective/Multiple Choice Questions)**Note :** Attempt all questions.

Choose the correct answer :

1. The estimated mass of atmosphere is about :

- (a) 8.6×10^4 MT
- (b) 5.6×10^4 MT
- (c) 12.3×10^4 MT
- (d) 20.5×10^4 MT

2. The extent of troposphere at the equator :

- (a) 16 km
- (b) 6 km
- (c) 22 km
- (d) 11 km

3. The instrument which measure the solar radiation reaching the earth surface is called :

- (a) Pyranometer
- (b) Pyradiometer
- (c) Pyrhelimeter
- (d) All of the above

4. The standard atmospheric pressure at mean sea level is indicated :

- (a) 1276 Mb
- (b) 750.6 Mb
- (c) 1013.25 Mb
- (d) 1612.40 Mb

5. Trade winds restricts in area between :

- (a) 5° N and 5° S
- (b) 35° N and 35° S
- (c) 60° N and 60° S
- (d) All of the above

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6. The absolute humidity is determined as :
- (a) weight of vapour/volume of air
 - (b) volume of air/volume of water
 - (c) weight of vapour/total capacity of water in air
 - (d) None of the above
7. The droplets of water suspended in the lower atmosphere during winter season is termed as :
- (a) Frost
 - (b) Mist
 - (c) Dew
 - (d) Fog
8. The line joining the place of equal rainfall is called :
- (a) Isohyets
 - (b) Isonymph
 - (c) Isobar
 - (d) Isobreeze
9. Which gas have the highest impact on green house effects ?
- (a) Nitrogen oxide
 - (b) Corbon dioxide
 - (c) Methane
 - (d) Chlorofluorocarbon

10. The headquarter of Indian Meteorological Department is situated at :
- (a) Pune
 - (b) New Delhi
 - (c) Bangalore
 - (d) Hyderabad
11. The cloud which occur precipitation ?
- (a) Nimbus
 - (b) Stratus
 - (c) Cirrus
 - (d) None of the above
12. When air start-flowing towards outside due to high pressure at Centre is a sign of :
- (a) Thunderstorm
 - (b) Cyclone
 - (c) Anticyclone
 - (d) Desicating wind
13. Tamil Nadu receives their rain due to which monsoon during Oct.-December months ?
- (a) South-West Monsoon
 - (b) North-East Monsoon
 - (c) Ketabatic Monsoon
 - (d) Westerly winds

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14. Thermal conductivity of soil can be modified using appropriate methods that is :
- (a) Ploughing
 - (b) Mulching
 - (c) FYM
 - (d) All of the above
15. The cardinal temperature is associated with :
- (a) Plant growth
 - (b) Animal living
 - (c) Microorganisms
 - (d) Orchids
16. The temperature of forest areas are modified in a better way than the open area because of the process :
- (a) Photosynthesis
 - (b) Evapotranspiration
 - (c) Gaseous exchange
 - (d) Respiration
17. If the temperature in Celsius scale is 40°C , then it is equal to the temperature in Fahrenheit scale :
- (a) 94°F
 - (b) 104°F
 - (c) 112°F
 - (d) 209°F

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18. The percentage of freshwater available on the earth :
- (a) 2%
 - (b) 3%
 - (c) 4%
 - (d) 5%
19. The age of glacial sediment is determined mostly by the method :
- (a) Carbon dating
 - (b) Cosmogenic nuclide dating
 - (c) Amino acid dating
 - (d) All of the above
20. The percentage of forest requires to minimize the impact of global climate changes :
- (a) 22%
 - (b) 28%
 - (c) 33%
 - (d) Not defined exactly

Section—B

2 each

(Very Short Answer Type Questions)

Note : Attempt any *eight* questions.

1. Define Albedo.
2. What is blackbody ?
3. What is mulching of soil ?

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4. Define the source of VOC.
5. What do you understand by carbon sink and carbon sources ?
6. Give the names of oceanic layers.
7. Define the photon.
8. What is a composition of atmospheric gases ?
9. What is REDD⁺ ?
10. Define Diurnal temperature.

Section—C

3 each

(Short Answer Type Questions)

Note : Attempt any *eight* questions.

1. What is the significance of meteorology in our daily life ?
2. Differentiate between weather and climate.
3. Prepare graphical figure showing energy budget on earth.
4. How ozone is important for ?
5. Why there are temperature gradients in different layers of atmosphere ?
6. What is a difference between homosphere and heterosphere of atmosphere ?
7. What methods helps in forecasting of weather ?
8. Define solar radiation. How is it important for plant sustenance and development ?
9. How El-Nino forms and what is its effect on monsoonal development ?
10. How is rainfall measured ?
11. Classify the clouds based on shape and altitude.

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Section—D

5 each

(Long Answer Type Questions)

Note : Attempt any *four* questions.

1. How is atmosphere formed ? What happened if there will be no atmosphere ? Explain.
2. Give diagrammatic illustration of the horizontal variation of earth temperature.
3. Differentiate between Land breeze and Sea breeze.
4. What instruments one used in meteorology station for collecting climatic data ? Explain.
5. Describe the rainfall pattern in India.
6. What is Climate change ? Describe the current developments and mitigation strategies being adopted worldwide.
7. Define suspended particulate matter. How is it harmful for human being ?

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