KATHMANDU UNIVERSITY
End Semester Examination
February/March, 2019

Marks Scored:

Level : B.Sc./B. Tech.
Year : III
Course : ENVS 333
Semester : I

Exam. Roll No.:
Time: 30 mins.
F. M. : 20

Registration No.:
Date 05 MAR 2019

SECTION "A"
[20 Q. × 0.5 = 10 marks]

Mark "√" in the appropriate box.

1. It is agreed that atmospheric layer Stratosphere is warmed due to presence of a gas called
   [ ] Carbon dioxide [ ] Ozone [ ] Methane [ ] Oxygen

2. Raindrops falling from sky but, not reaching to the ground is known as
   [ ] Freezing rain [ ] Freezing drizzle [ ] Virga [ ] Glaze

3. Lapsrate is the rate at which air temperature
   [ ] increases with increasing elevation
   [ ] decreases with increasing elevation
   [ ] decreases with decreasing elevation
   [ ] remains constant throughout the atmosphere

4. Rotation of earth creates a kind of force known as
   [ ] Pressure gradient force [ ] Coriolis force
   [ ] Geostrophic force [ ] Mechanical force

5. Low clouds are below
   [ ] 2 km [ ] 5 km [ ] 6 km [ ] 8 km

6. Hail Storms are associated only with
   [ ] Stratus cloud [ ] Cirrus cloud
   [ ] Nimbostratus [ ] Cumulonimbus Cloud

7. When the position of Earth is closure to the Sun, it is known as
   [ ] Perihelion [ ] Aphelion [ ] Equinox [ ] Solstice

8. Water droplets freely suspended in the atmosphere having temperature below zero but, not freezing is known as
   [ ] cooled [ ] super cooled [ ] frost [ ] dew

9. Lapsrate is the rate at which air temperature
   [ ] increases with increasing elevation
   [ ] decreases with increasing elevation
   [ ] decreases with decreasing elevation
   [ ] remains constant throughout the atmosphere

10. Diurnal variation represents a change that occurs in a
    [ ] day [ ] month [ ] year [ ] season

11. Terrestrial radiation is the radiation emitted by
[ ] Earth [ ] Sun [ ] Moon [ ] unknown planet

12. Wind shear condition prevails in the atmosphere when
[ ] wind speed is constant
[ ] wind speed and direction vary significantly
[ ] wind direction is constant
[ ] wind is calm

13. Monsoon withdraws first and foremost in Nepal from
[ ] North West [ ] South East [ ] North [ ] West

14. Prime Meridian is known for
[ ] 0 degree latitude [ ] 0 degree longitude
[ ] 90 degree latitude [ ] 90 degree longitude

15. When two air masses come together but neither displaces the other, the boundary between them is referred to as
[ ] Occluded front [ ] cold front
[ ] warm front [ ] Stationary front

16. Col is a neutral position between
[ ] two low and two high pressure areas [ ] two low pressure areas
[ ] two high pressure areas [ ] strong windy area

17. Absolute zero is also known as
[ ] 0 ^{0}C [ ] 0 ^{0}K [ ] 0 ^{0}F [ ] 273 ^{0}C

18. Monsoon trough is a line joining
[ ] minimum atmosphere pressure [ ] maximum atmosphere pressure
[ ] equal wind speed [ ] equal air temperature

19. The process of decaying a front is known as
[ ] frontogenesis [ ] frontolysis [ ] synopsis [ ] analysis

20. An object that absorbs all radiation falling on it, at all wavelengths, is called
[ ] black body [ ] white body [ ] red body [ ] opaque

SECTION "B"

[20 Q. × 0.5 = 10 marks]

Fill in the blanks.

21. The atmospheric pressure exerted by each individual gas in the atmosphere is called .....

22. 1 mb vapor pressure is equivalent to ..... N/m^2

23. Kepler's first law of planetary motion states that planets move in an ..... orbit

24. The lower part of the atmosphere which has been divided into sub layers such as Troposphere, Stratosphere and Mesosphere is known as .....

25. A positive temperature anomaly indicates that temperature is above ..... value.

26. When fog is lifted up and freely suspended in the atmosphere ..... cloud is formed.

27. Greenhouse gases increase Earth's .....

28. A positive temperature anomaly indicates that temperature is above ..... value.

29. Anti-cyclone is associated with .....pressure system.

30. A line joining equal rain fall is known as .....

31. Air will be saturated at .....point temperature.

32. Thermosphere is heated due to .....

33. At the equinoxes, day and night are of ..... length.

34. Anemometer is an instrument that measures .....

35. Koppen's classification is based on average precipitation and .....

36. Cloud is measured in terms of .....

37. An elongated area of low pressure system is known as .....

38. With increasing moisture, density of air .....

39. A line joining equal wind speed is called .....

40. Relative humidity is measured in terms of.....

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SECTION "C"

[3 Q. × 7 = 21 marks]

Attempt *ANY THREE* questions.

1. What do you understand by frontogenesis? Write down the name of different types of front with their symbolic sign and explain them in brief.

2. What is the main reason behind the occurrence of monsoon in South Asia? Write in brief a summary of monsoon in Nepal.

3. What is Homosphere in a vertical division of atmosphere? Write the name of different layers of atmosphere in a Homosphere and explain them in brief.

4. What is greenhouse gas (GHG)? Write down the name of some of naturally present GHG and explain their role in global warming on earth.

SECTION "D"

(Short answer questions)
[34 marks]

5. Differentiate between (*ANY FOUR*) [4 Q. × 4 = 16]
   a) Land breeze and Sea breeze
   b) Troposphere and Mesosphere
   c) Conduction and Convection
   d) Low cloud and High cloud
   e) Wet bulb and Dew point temperature

6. Write short notes on (*ANY THREE*) [3 Q. × 4 = 12]
   a) Heat exchange processes
   b) Role of monsoon trough
   c) Greenhouse effect
   d) Air pollution

7. Give reasons why? [2 Q. × 3 = 6]
   a) Thunderstorm takes place in a Cumulonimbus cloud.
   b) Temperature inversion is common in Stratosphere.