KATHMANDU UNIVERSITY
End Semester Examination
February/March, 2018

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 : MAR 1 8 2018

SECTION "A"
[20 Q.×0.5=10 marks]

Mark "√" in the appropriate box.

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

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

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

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. Jet stream is common at the level of
   [ ] Mesopause [ ] Stratopause [ ] Tropopause [ ] Monsoon trough

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

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

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

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

18. Hygrometer is an instrument that measures
[ ] rain [ ] pressure [ ] humidity [ ] sunshine intensity

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

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

SECTION "B"

[20 Q.×0.5=10 marks]

Fill in the blanks.

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

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

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

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

25. ITCZ understands for .....

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

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

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

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

30. Buys Ballot's law states that in the Northern Hemisphere, if a person stands with his back to the wind, the low pressure area will be on his .....

31. At dew point temperature, air will be .....

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

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

34. Withdrawal of monsoon in Nepal takes place first and foremost in ..... region.

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

36. The unit of measurement of cloud is .....

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

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

39. Green house gases increase Earth's .....

40. Anemometer is an instrument that measures.....

KATHMANDU UNIVERSITY
End Semester Examination
February/March, 2018

Level : B.Sc./B.Tech.
Year : III
Time : 2 hrs. 30 mins.

Course : ENVS 333
Semester: I
F.M. : 55

SECTION "C"
[3 Q.×7=21 marks]

Attempt *any THREE* questions.

1. What do you understand by air pollution? Write down main sources of air pollution in Kathmandu. Explain in brief the effects of particulate matter (PM) in human health. [7]

2. What do you understand by precipitation? Write the name of different forms of precipitation and explain in brief the nature of precipitation that occurs at the time of occurrence of a thunderstorm. [7]

3. Explain in brief the basis of Climate classification? Write down the advantages and limitations of Koppen's Climate Classification. [7]

4. What do you understand by Climate change? Write down the role of green house gases (GHG) in Climate change. [7]

SECTION "D"
(Short Answer Questions)

5. Differentiate between *any FOUR* [4 Q.×4=16]
   a) Anabatic and Katabatic wind
   b) Stratosphere and Thermosphere
   c) Air mass and Front
   d) Heat and Temperature
   e) Glacial and Interglacial periods

6. Write short notes on *any THREE* [3 Q.×4=12]
   a) Front
   b) Monsoon in Nepal
   c) Milankovitch Cycle
   d) Global warming

7. Give reasons why? [2 Q.×3= 6]
   a) Temperature inversion takes place in Stratosphere.
   b) Wind blows from high pressure to low pressure area.