DF-3044
Second Year B. Sc. (Sem. III) Examination
March/April - 2016
ENV-301 : Environment Science - V
(Core-I)

Time : 2 Hours] [Total Marks : 50

सूचना/Instructions :

(1) Fill up strictly the details of * in your answer book.

Name of the Examination :
SECOND YEAR B. SC. (SEM. 3)
Name of the Subject :
301 : ENVIRONMENT SCIENCE - 5

Subject Code No. : 3 0 4 4 Section No. (1, 2, ....) : Nil

Seat No. : [Student's Signature]

(2) There are 50 questions and each question carries (1) mark and all are compulsory.

(3) Read the question carefully before selecting the correct option.

O.M.R. Sheet कर्तव्य अनेक अन्त्य के सूचना आपेक्षिक
O.M.R. Sheet की पृष्ठ आपेक्षिक है।

Important instructions to fillup O.M.R. Sheet are given on back side of the provided O.M.R. Sheet.
1. The decrease in temperature with altitude is known as
   (A) combination rate
   (B) adiabatic rate
   (C) inversion rate
   (D) lapse rate

2. The temperature lapse rate on a sunny day is ______°C/km
   (A) 1
   (B) 1000
   (C) 10
   (D) 0.1

3. Full form of PAN is
   (A) poly acrylic acid
   (B) polyacetyl nitriles
   (C) peroxy acetyl nitrate
   (D) peracetyl oxy nitrate

4. Dry adiabatic lapse rate is given as
   (A) \( \tau = \frac{dZ}{dT}_{\text{adia}} \)
   (B) \( \tau = \frac{-dZ}{dT}_{\text{adia}} \)
   (C) \( \tau = \frac{-dT}{dZ}_{\text{adia}} \)
   (D) \( \tau = \frac{dT}{dZ}_{\text{adia}} \)

5. Valleys and low lying areas are affected by
   (A) nocturnal cooling
   (B) nocturnal heating
   (C) diurnal lapse
   (D) nocturnal inversion
6 Elevated advective inversion occurs at
   (A) valley
   (B) hill range
   (C) farms
   (D) village

7 _______ is responsible for creation of world's great desserts located at 30°
   latitude.
   (A) radiational inversion and subsidence inversion
   (B) radiational inversion
   (C) subsidence inversion
   (D) advective inversion

8 Location of trade wind is
   (A) below 60°
   (B) between 30° and equator
   (C) between 30° and 60°
   (D) above 30°

9 The wind velocity profile is influenced by
   (A) sunlight and radiation
   (B) thermal and mechanical turbulence
   (C) temperature and pressure
   (D) surface roughness and time

10 The value of exponent $\alpha$ of simple empirical power law varies between
    (A) 0.28 to 0.40
    (B) 0.11 to 0.33
    (C) 0.40 to 0.45
    (D) 0.14 to 0.40
11 The value of adiabatic lapse rate for dry air is _____ °c/km.
(A) -6.5  (B) +10
(C) -9    (D) +11

12 Negative lapse rate is ______ for organisms.
(A) Safe
(B) helpful
(C) meaningful
(D) dangerous

13 On basis of physical state, there are _____ groups of air pollutants.
(A) 5  (B) 2
(C) 4  (D) 3

14 _____ ppm Of SO₃ cause breathing discomfort.
(A) 10  (B) 2
(C) 1   (D) 4

15 _____ gas blackens the lead paint.
(A) SO₃
(B) H₂SO₃
(C) H₂S
(D) SO₂

16 Area of acid rain is _______
(A) terrestrial area
(B) villages
(C) mountains
(D) thickly populated city

17 Corrosion of metal take place due to
(A) presence of ozone
(B) temperature lapse
(C) smog
(D) acid rain

18 Acid rain is due to high concentration of
(A) None of these
(B) N₂ and O₂
(C) SO₂ and NO₂
(D) CO₂ and CO

19 Which is not a green house gas ?
(A) CO
(B) CO₂
(C) CH₄
(D) CFCs

20 Chlorofluorocarbon (CFC) used as coolants in refrigerators contains
(A) All of these
(B) Carbon
(C) Hydrogen
(D) Chlorine and Fluorine

[ Contd...]
21. The world environment day is celebrated on
   (A) 15th February
   (B) 15th June
   (C) 5th June
   (D) 5th January

22. Short term properties of the atmosphere at a given place and time is referred as
   (A) Season
   (B) Climate
   (C) Weather
   (D) Microclimate

23. Which of the following is an example of impact of the development activities on hydrosphere?
   (A) Noise pollution
   (B) Air pollution
   (C) Water pollution
   (D) Soil pollution

24. The fifth zone of atmosphere is ________.
   (A) ionosphere
   (B) troposphere
   (C) Anthrosphere
   (D) mesosphere

25. The term environment is derived from the word _______ environner.
   (A) American
   (B) Greek
   (C) French
   (D) Latin

26. Example of secondary pollutant is
   (A) PAN
   (B) $H_2O$
   (C) $O_2$
   (D) $SO_2$

27. Environment consists of _______ segments.
   (A) 1
   (B) 4
   (C) 2
   (D) 3
28 The density of H₂O is
(A) 1 kg/m³
(B) 1 µg/m³
(C) 1 g/cm³
(D) 1 mg/L

29 O₂ and CO₂ levels in atmosphere depends on _______.
(A) soil 
(B) microbes 
(C) animal kingdom 
(D) plant kingdom

30 Atmosphere is divided in to _______ concentric layers.
(A) 5 
(B) 3 
(C) 4 
(D) 2

31 Concentration of ozone is
(A) 1 to 5 dobson v 
(B) 1 to 5 ppm by volume 
(C) 1 to 5 ug/m³ v 
(D) 1 to 5 ppb by volume

32 Which sphere has the lowest temperature in the atmosphere ?
(A) mesosphere 
(B) ionosphere 
(C) stratosphere 
(D) troposphere

33 Earth's albedo is _______%.
(A) 31 
(B) 30 
(C) 46 
(D) 23

34 Environment degradation is due to
(A) All of these 
(B) Rapid industrialization 
(C) Urbanization 
(D) Developmental works
35 The outer soil crust of the earth is known as
   (A) Mesosphere
   (B) Hydrosphere
   (C) Exosphere
   (D) Lithosphere

36 Sun is located at a distance of _____ km from earth's surface.
   (A) $1.5 \times 10^{10}$
   (B) $1.4 \times 10^6$
   (C) $1.5 \times 10^8$
   (D) $1.4 \times 10^{20}$

37 Earth's actual global average temperature is _____ K.
   (A) 280
   (B) 6000
   (C) 255
   (D) 290

38 Which gases are probably found in the troposphere and undergo ionization?
   (A) water and cloud
   (B) oxygen and nitric oxide
   (C) CH$_4$ and NH$_3$
   (D) O$_2$ and CO$_2$

39 The initial life forms derived their energy by _____ of organic matter.
   (A) decaying
   (B) fermentation
   (C) heating
   (D) pyrolysis

40 Atmospheric CO$_2$ is replenished every _____.
   (A) 100 million year
   (B) 4-8 years
   (C) 3000 years
   (D) 8-16 years
41 Colloidal size particles are called _______.
   (A) fog
   (B) aerosol
   (C) mist
   (D) aitken

42 Particles are involved in
   (A) all
   (B) cloud and fog formation
   (C) ice crystals for
   (D) heat balance of earth

43 Complete the reaction: $3\text{FeS}_2 + 8 \text{ O}_2 \rightarrow _____ + 6\text{SO}_2$
   (A) $\text{CH}_2\text{O}$
   (B) $\text{Fe}_3\text{O}_4$
   (C) $\text{Fe}_2\text{O}_3$
   (D) $\text{Fe}_2\text{S}$

44 Aerosol mist give raise to _____ due to oxidation of $\text{SO}_2$.
   (A) all
   (B) $\text{H}_2\text{SO}_4$
   (C) $\text{HCl}$
   (D) $\text{HNO}_3$

45 Air pollutants are measured in which unit?
   (A) $\mu\text{g/m}^3$
   (B) $\mu\text{g/l}$
   (C) ppb
   (D) ppm

46 Concentration of PAH in urban atmosphere is _____ g/m$^3$.
   (A) not detected
   (B) 20
   (C) 10
   (D) 30

47 How many van Allen belts are there?
   (A) none
   (B) 2
   (C) 3
   (D) 1

48 Free radicals plays an important role in the formation of
   (A) none
   (B) smog
   (C) fog
   (D) cloud

49 Meteorology is affected by _____ properties and reactions of atmosphere.
   (A) environmental
   (B) physical
   (C) chemical
   (D) analytical

50 Effective dispersion of pollutants in air depends on _____ of atmosphere.
   (A) none of them
   (B) degree of stability
   (C) turbulent structure
   (D) degree of stability and turbulent structure both