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)

(2) प्रश्नमाला कुल 50 प्रश्न हैं, जिनमें से 40 प्रश्न (1) अंक के हैं और 10 प्रश्न (4) अंक के हैं।

(3) दिए गए प्रश्नों के सावधानी से पढ़कर जवाब दें।

Read the question carefully before selecting the correct option.

O.M.R. Sheet लाइन अंकानी अनिवार्य सूचनाओ आपेक्ष
O.M.R. Sheet-विपरीत पृष्ठ में प्रदान किए गए हैं।

Important instructions to fillup O.M.R. Sheet
are given on back side of the provided O.M.R. Sheet.

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1. The value of adiabatic lapse rate for dry air is ______ °C/km.
   (A) 9  (B) +11  (C) −6.5  (D) +10

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

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

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

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

6. Area of acid rain is ______.
   (A) mountains  (B) thickly populated city  (C) terrestrial area  (D) villages

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

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

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

10. Chlorofluorocarbon (CFC) used as coolants in refrigerators contains
    (A) Hydrogen  (B) Chlorine and Fluorine  (C) All of these  (D) Carbon
11 The world environment day is celebrated on
(A) 5th June  
(B) 5th January  
(C) 15th February  
(D) 15th June

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

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

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

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

16 Example of secondary pollutant is
(A) O2  
(B) SO2  
(C) PAN  
(D) H2O

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

36 Concentration of PAH in urban atmosphere is ______ g/m³.
   (A) 10
   (B) 30
   (C) not detected
   (D) 20

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

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

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

40 Effective dispersion of pollutants in air depends on ______ of atmosphere.
   (A) turbulent structure
   (B) degree of stability and turbulent structure both
   (C) none of them
   (D) degree of stability
41 The decrease in temperature with altitude is known as
   (A) inversion rate
   (B) lapse rate
   (C) combination rate
   (D) adiabatic rate

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

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

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

45 Valleys and low lying areas are affected by
   (A) diurnal lapse
   (B) nocturnal inversion
   (C) nocturnal cooling
   (D) nocturnal heating

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46  Elevated advective inversion occurs at
    (A) farms
    (B) village
    (C) valley
    (D) hill range

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

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

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

50  The value of exponent $\alpha$ of simple empirical power law varies between
    (A) 0.40 to 0.45
    (B) 0.14 to 0.40
    (C) 0.28 to 0.40
    (D) 0.11 to 0.33