

Level: B. Sc.

Year : II

Exam Roll No. :

Time: 30 mins.

Course : ENVS 201

Semester : I

F.M. : 20

Registration No.:

Date MAR 15 2018

SECTION "A"

[40 Q. × 0.5 = 20 marks]

I. Choose and mark "X" in the most appropriate answer box:

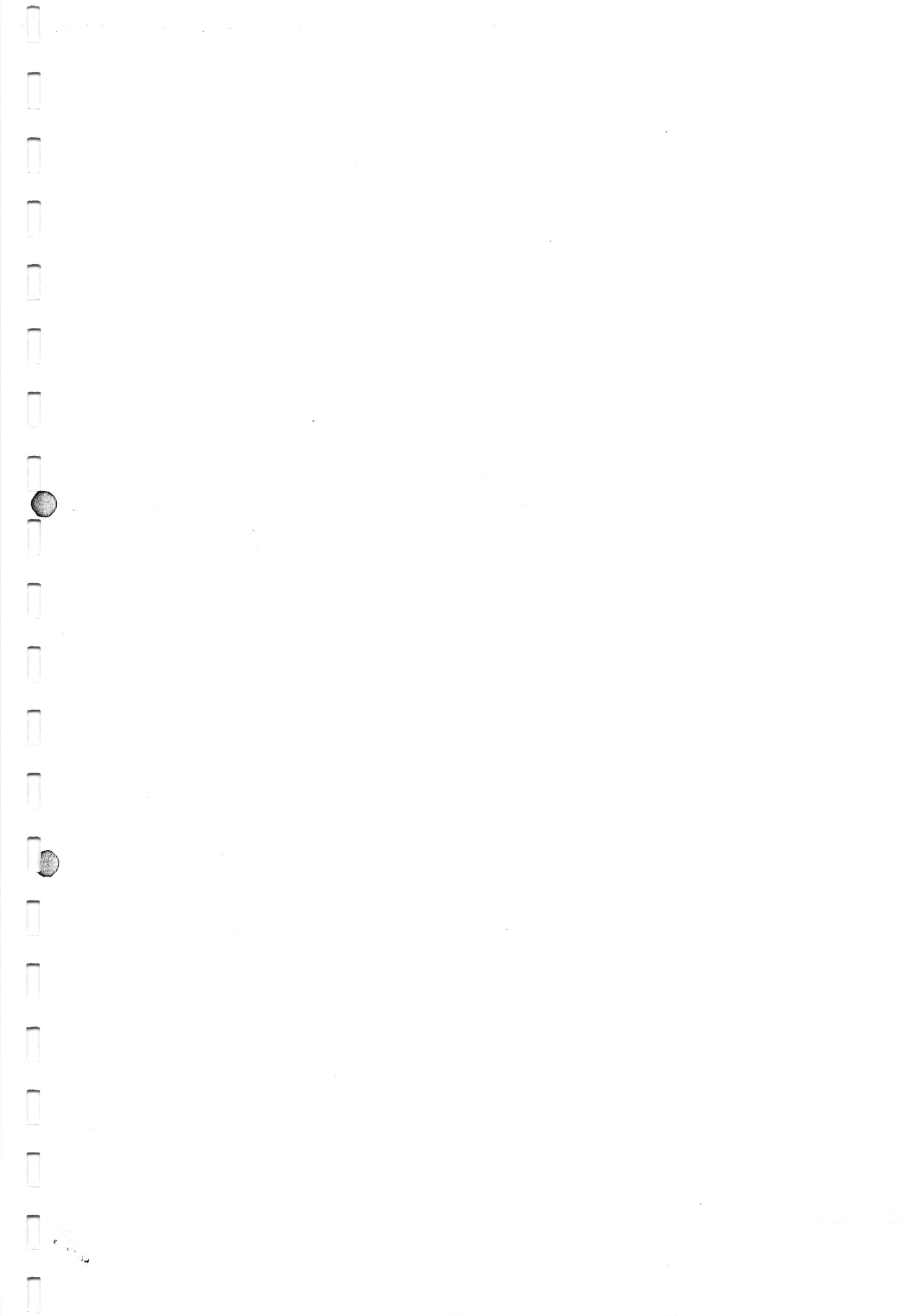
1. Cyanide poisoning can be treated by intravenous administration of
 NaNO₂ CaCO₃ Fe₂O₃ KOH
2. Uncontrolled cell growth either by themselves or in combination with other substances
 Teratogens Carcinogens Mutagens Biogens
3. The most common form of minerals on Earth
 Silicates Calcite Quartz Magnetite
4. The minimum concentration of SO₂ that starts showing fatal effects on animal and plants
 50 ppm 250 ppm 500 ppm 750 ppm
5. Rapid death of humans occurs when among the following lowest level of carbon monoxide is continuously exposed
 750 ppm 500 ppm 1000 ppm 1500 ppm
6. Half mol of carbon reacts with half mol of oxygen to give carbon dioxide weighing
 44 g 32 g 28 g 22 g
7. The rock type gneiss is also called as
 Igneous Sedimentary Metamorphic Black rock
8. It is not among the heavy metal group
 Lead Sodium Zinc Cobalt
9. Nepal is rich in water resources. The total area of it covered by water is about
 7% 10% 15% 25%
10. The concentration of more than 1% in sea water
 Calcium Bromide Strontium Fluoride
11. According to Mohs scale of minerals hardness, diamond has the scale of
 1 5 7 10

12. The concentration of CO₂ by volume in salt water
 35% 25% 15% 5%
13. The soil horizon characteristically composed of hard bed rock
 O horizon A horizon B horizon R horizon
14. The natural gas or methane is more powerful than CO₂ as greenhouse gas by
 2 times 12 times 21 times 50 times
15. The gas phase reaction between HCl and ClONO₂ is
 extremely fast fast slow extremely slow
16. It is one of the major greenhouse gas
 Oxygen Argon Nitrogen Ozone
17. The distance between atoms in a molecule is Angström and 10⁻¹⁰ meters equal
 0.1 Å 1 Å 10 Å 100 Å
18. Outer surface of the earth consisting of different gases and water vapour
 Atmosphere Hydrosphere Lithosphere Biosphere
19. With increasing altitude, air temperature decreases at a rate of about
 0.4 °C per kilometer 2.4 °C per kilometer
 4.4 °C per kilometer 6.4 °C per kilometer
20. Oxygen-Hydrogen bond in water is
 1 Å 10 Å 100 Å 200 Å

II. Fill in the blanks with most appropriate answer/s:

21. Cyanide in small amount occurs in seeds of fruits (apple, apricots, cherries, peaches and plums) and is released by enzymatic or acidic hydrolysis in the stomach, which is bonded to sugar called
22. The chemical formula of toxic gas ethylene oxide is
23. An increase in the concentration of a chemical within a biological organism over time
24. Toxic effects like acute toxicity, subchronic toxicity, chronic toxicity, developmental toxicity, and genetic toxicity can be referred in a single toxicity term called
25. The term used to describe 'loss of energy by the emission of electromagnetic radiation in a photochemical reaction'.....

26. The study of symptoms, mechanisms, treatments and detection of poisoning of people.....
27. Shallow, nutrient-rich lakes with very productive phytoplankton
28. The dose of a toxic substance that kills fifty percent of a test population is
29. Mole is equivalent to 6.0221367×10^{23} molecules. This special number of particles is called as.....
30. Stratification of water is the formation of water layers based on salinity and
31. It is considered as the most toxic substances on Earth.....
32. Toxic chemicals usually inhibit the enzyme function in the body through their affinity to containing ligands.
33. The acidic or alkaline nature of water in chemistry is referred to
34. An activity coefficient is also a correction factor which interrelates solute activity and
35. The amount of ozone produced in Chapman cycle reaction is.....
36. When the atmospheric temperature is about $193\text{K}/-80^{\circ}\text{C}$, specific clouds are formed in the atmosphere called as
37. Bacteria involved in denitrification process are
38. The amount of substance per unit volume in mol/dm^3 is the the unit of
39. Metalimnion, the layer in between epilimnion and hypolimnion is also called as.....
40. The unit used to measure the concentration of ozone in the atmosphere



KATHMANDU UNIVERSITY

End Semester Examination

February/March, 2018

MAR 15 2018

Level : B.Sc.
Year : II
Time : 2 hrs. 30 mins.

Course : ENVS 201
Semester : I
F. M. : 55

SECTION "B"

[3Q × 7 = 21 marks]

Attempt *ANY THREE* questions:

1. With the help of appropriate chemical reactions and figures, explain water carbonate system.
2. How seasonal variation affects oxygen and temperature in different layers of the lake or pond?
3. In graphical form, describe the different atmospheric layers with their altitude range, temperature variation and important gases components.
4. Let's assume that car fuel, petrol, is represented by C_8H_{18} . What is the theoretical oxygen needed to completely burn the fuel? Calculate the amount of carbon monoxide produced if the fuel is not completely burn. (Balanced chemical reactions for both conditions carry full marks).

SECTION "C"

Attempt *ALL* questions:

5. Describe the formation and removal process of aerosols. [4]
6. Calculate the volumes of 1 mol of gas at 1 atm and 20°C and at 1 atm and 25°C. [6]

OR

Describe the relationship of stratospheric ozone destruction and greenhouse effect.

7. Calculate the LD50 of a chemical for an organism weighing 85 kg when the lethal amount of the chemical is 7.5 gm. [5]
8. Write short notes on (*ANY THREE*): [3Q × 3=9]
 - a. Relationship of chemical dose and response
 - b. Photochemical smog
 - c. Atmospheric window
 - d. Mohs mineral hardness scale
9. Explain the process of rock formation. [5]
10. How toxic chemicals get exposed to blood and lymph system of human? (Show the route of their excretionalso) [5]

