

Bago University
Department of Chemistry
First Semester Examination, March 2019

Second Year BSc
(Chemistry Specialization)
Answer any six Questions

Chem-2104
Chemistry in Society
Time Allowed: (3) hours

1. (a) Fill in the blanks with the correct word(s), unit(s), and etc., as necessary.
 - (i) Microbes could not break down branch chain ———.
 - (ii) Morphine is still of the most effective ——— available to medicine.
 - (iii) Cement is a mixture of a combination of lime, silica and ———.
 - (iv) Plastics, synthetic fibers, solvents and many other consumer products are made from industrial ———.
 - (v) Petroleum is also known as crude oil or rock oil or ———.
 - (vi) Sugars, starches, and even celluloses are ———.
- (b) Select the correct statement(s), word(s), unit(s) and etc., given in the followings.
 - (i) Aspirin is synthesized from salicylic acid and (acetic acid, acetyl chloride, acetic anhydride) in the presence of base.
 - (ii) In a triglyceride molecule, three fatty acid molecules are attached to one molecule of (water, glycerine, glucose).
 - (iii) Most of the nature's colours are due to the absorption of certain wavelength of (visible light, UV, IR) by organic compounds.
 - (iv) The energy of falling water used to turn turbines or mill wheels are called (solar energy, wind energy, hydro energy).
 - (v) The most mature coals is (3×10^8 , 3×10^5 , 3×10^7) years.
 - (vi) The vitamin essential for the proper clotting of blood is (vitamin A, vitamin B, vitamin K).
2. (a) What are the primary energy resources and secondary energy resources?
 - (b) Write a short note on the following.
 - (i) Hydropower (ii) Biomass energy
3. (a) Give the names of three structural classes of the most important insecticides.
 - (b) Ammonium nitrate (NH_4NO_3) is widely used as a fertilizer. A bag of ammonium nitrate sold as fertilizer lists the number 35-0-0. Use the formula weight for NH_4NO_3 to verify that this is the correct number.
4. (a) What are the seven most abundant macronutrient minerals in the body?
 - (b) Write down the structural formulae for vitamin A, C and B_6 .
 - (c) Identify the following vitamins as water-soluble or fat-soluble:
 - (i) Vitamin A (ii) Vitamin B_6 (iii) Vitamin C (iv) Vitamin K (v) Vitamin E

P.T.O

5. (a) What are the structures of barbital and phenobarbital?
(b) How would you synthesize aspirin?
6. (a) Describe the typical composition and uses of soda-lime glass and borosilicate glass.
(b) Explain briefly that "all ceramic materials have excellent chemical resistance".
7. (a) Explain the terms "deodorant" and "antiperspirants". What is the active ingredient nearly all antiperspirants?
(b) Describe the uses of detergent additives.
