PB-003-001648 Seat No. _____

B. Sc. (Sem. VI) (CBCS) Examination

March / April - 2020

IC-603 : Pharmaceuticals - II & Fundamentals of Chemical Engineering - II

Faculty Code : 003
Subject Code : 001648

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions : (1) All the questions are compulsory.
(2) Figures to the right indicate maximum marks.
(3) Draw labelled diagram wherever necessary.
(4) Assume suitable data.
(5) Question-1 carries 20 marks.
(6) Question-2 & 3 carry 25 marks each.

1 Answer the following questions : **20**

(1) The non-sugar residues in glycosides are known as _____.

(2) 2-Methyl-1, 3-butadiene is _____ rubber.

(3) The ratio of LD_{50} to ED_{50} is known as therapeutic index. True/False?

(4) Menthol is monocyclic terpenoids. True/False?

(5) Volatile oils sometimes also known as _____ oils.

(6) Hypnotics drug is used to produce artificial sleep. True/False?

(7) _____ enzyme is used for catabolism of protein?

(8) Enzymes are _____ catalyst.

(9) Give full form of LEL.

(10) Oils and fats are glycerides of higher _____ acids.

(11) Industrial safety means avoidance of accidents. True/False?

(12) Toxic, irritant and poisonous chemicals are responsible for _____ hazard.

(13) Transportation lag means delay in _____.

(14) What is ductility of metal?

(15) The device used to increase the strength of the signal is called _____.

(16) The measure of maximum amount of energy or material that a system can handle without failure is known as_____.

(17) The property of an electrical circuit that tends to oppose change of current is circuit is called _____.

(18) An electro-mechanical device, which converts a physical quantity being measured to a proportional electrical O/P _____.

(19) Output is the incoming signal to a controlled system. True/False?

(20) Give full form of NIHL.

2 (a) Answer any **three** : **6**

(1) Define :

(i) fermentation

(ii) Glycoside

(2) Draw only diagram of structure of bacteria.

(3) Enlist factors affecting activity of enzyme.

(4) Define :

(a) Error

(b) Offset

(5) Write a short note on principles of industrial safety.

(6) Define :

(i) Lost time injury

(ii) Explosivity

(b) Answer any **three** : **9**

(1) Explain any two factors affecting enzyme substrate activity.

(2) Give synthesis of: Butabarbital

(3) Write a brief note on Terpenoids.

(4) Discuss any two mechanical properties of metal.

(5) Explain transportation lag with neat diagram.

(6) Enlist seven steps for evolution of process.

(c) Answer any **two** : **10**

(1) Write a detailed note on carbohydrates.

(2) Give synthesis of (i) Salicylamide (ii) Atenolol

(3) Explain production of lactic acid via fermentation process.

(4) What is CSTR? Give detailed comparison between standard equipment and specially designed equipment.

(5) Write in detail: Control of diseases due to chemicals in chemical industries.

3 (a) Answer any **three** : **6**

(1) Give synthesis of Paracetamol

(2) Give synthesis of Hexobarbitone.

(3) Explain flavanoids in brief.

(4) Define :

(a) Transducer

(b) Error

(5) Write a short note on various types of utilities used in chemical industries.

(6) Define :

(a) Signal

(b) Gain

(b) Answer any **three** : **9**

(1) Write a brief note on Baker's yeast.

(2) Give synthesis of : Ibuprofen.

(3) Give synthesis of : Sulfamethoxazole.

(4) Write a short notes on color codes of safety.

(5) Give advantages and disadvantages of a continuous operation in a chemical plant.

(6) Write a brief note on capacitance.

(c) Answer any **two** : **10**

(1) Describe Penicillin G production in detail.

(2) Explain protein in detail.

(3) Give the synthesis of :

(i) Talbutal

(ii) Butabarbital

(4) Discuss various components of control system.

(5) Explain storage, handling and transportation of chemicals in industries.
