AAI-003-001648 Seat No. _____

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

March / April - 2016

IC.P-603 : Pharmaceuticals-2 & Fundamental of Chemical Engineering-2

Faculty Code : 003
Subject Code : 001648

Time : Hours] [Total Marks : **70**

Instructions : (1) All the questions are compulsory.
(2) Figures to the right indicate maximum marks.
(3) Draw labeled diagram wherever necessary.
(4) Assume suitable data.
(5) Question-1 carries 20 marks MCQ & should be written in the same answer sheet.
(6) Question-2 & 3 carries 25 marks each.

1 MCQ : **20**

(1) _____ is the undesirable oscillation of an automatic control system so that the controlled variable swings on both side of the reference value.

(A) Hunting (B) Transducer
(C) Inductance (D) Range

(2) _____ is the amount of energy or a material that a process must handle to manipulate the process variable.

(A) Input (B) Load
(C) Offset (D) Signal

(3) _____ is a measure of maximum amount of energy or material that a system can handle without failure.

(A) Capacity (B) Range
(C) Action (D) Set Point

(4) Which of the following is a step in evolution of a process

(A) Pilot Plant (B) Research evaluation
(C) Commercial plant (D) All of the above

(5) Which of the following is a time schedule followed in a chemical industry
(A) Around the clock operation
(B) Five days a week
(C) Six days a week
(D) All of the above

(6) _____ is the measure of load a material can take before breaking
(A) Lustre (B) Color
(C) Strength (D) Tensile strength

(7) _____ is resistance offered by the material to abrasion.
(A) Hysteresis (B) Permissibility
(C) Wear resistance (D) Castability

(8) Which of the following is included in Fire triangle
(A) Fuel, Oxygen, Energy
(B) Fuel, Hydrogen, Energy
(C) Fuel, Nitrogen, Energy
(D) Fuel, Carbon Dioxide, Energy

(9) Which of the following is the route of chemicals entry into a human body
(A) Ingestion (B) Skin Contact
(C) Inhalation (D) All of the above

(10) What is the full form of LEL
(A) Lower Explosion Limit
(B) Larger Evaporation Limit
(C) Lower Evaporation Limit
(D) None of the above

(11) The non-sugar residues in glycosides are known as...
(A) Glycone (B) Genin
(C) Aglycone (D) Both (B) & (C)

(12) Vitamin D is also known as?
(A) Retinol (B) Calciferol
(C) β-Tocopherol (D) Phytomenadione

(13) Which of the following is a formula for Sesqui Terpenoid?
(A) $C_{15}H_{24}$ (B) $C_{20}H_{32}$
(C) $C_{25}H_{40}$ (D) $C_{30}H_{48}$

(14) Chemical constituent of plant which is medicinally active referred as...
(A) Carbohydrate (B) Phytochemical
(C) Saponin (D) Steroid

(15) Which of the following is an anti-hypertensive drug?

(A) INH (B) PAS

(C) Propranolol (D) Talbutal

(16) Therapeutic Index stands for...

(A) A ratio of ED_{50} to LD_{50}

(B) A ratio of ED_{60} to LD_{40}

(C) A ratio of LD_{50} to ED_{50}

(D) A ratio of LD_{60} to ED_{40}

(17) Which of the following is a fermentation product generated by Penicillium Chrysogenum?

(A) Vinegar (B) Penicillin

(C) Lactic acid (D) Tetracycline

(18) According to W.H.O. hypertension is a state where Systolic and Diastolic pressure in mm of Hg?

(A) 150 & 95 (B) 95 & 150

(C) Both (A) and (B) (D) None of these

(19) Chemically Steroid is?

(A) 1,2-Cyclopenteno Phenanthrene

(B) 1,2-Cyclopenteno Anthracene

(C) 1,5-Cyclopenteno Phenanthrene

(D) 1,5-Cyclopenteno Anthracene

(20) Menthol is a...

(A) Acyclic terpenoid (C) Monocyclic terpenoid

(B) Bicyclic terpenoid (D) None of the above

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

(1) What is meant by steady state and unsteady state process?

(2) What do you mean by the term fatigue and specific gravity?

(3) Write a short note on utilities in chemical industry.

(4) Explain Flavanoid in brief.

(5) Define : (i) Alkaloid (ii) Fermentation

(6) Define:

(i) Hypnotics and sedatives

(ii) Chemotherapy

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

(1) Explain ON-OFF control.

(2) Explain in short bubble phase reactor and slurry phase reactor.

(3) Explain in detail explosivity in process safety.

(4) Explain: Oil, Fat and Wax.

(5) Explain: Factors affecting enzyme substrate activity (any two)

(6) Give synthesis of: Barbital

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

(1) Explain in detail components of a control system.

(2) Write a detailed note on requirements of materials for construction of equipment.

(3) Explain: Terpenoid in detail.

(4) Explain: Protein in detail.

(5) Explain: Structure of bacteria in detail.

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

(1) Define : (a) Flash point (b) Fire point

(2) Explain P-Control and PI-Control.

(3) Explain in short harmful dust in a chemical industry.

(4) Give synthesis of: Paracetamol

(5) Explain: Manufacturing of ephedrine

(6) Classify micro-organisms in brief.

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

(1) Enlist advantages and disadvantages of an automatic control system.

(2) Write a short note on semi-commercial plant.

(3) Write a note on color codes for safety.

(4) Give synthesis of: INH

(5) Give synthesis of: Ibuprofen

(6) Give synthesis of: Sulphathiazole

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

(1) Give Comparison between open loop control system and closed loop control system.

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

(3) Explain control of diseases due to chemical effects.

(4) Explain: Penicillin G production in detail.

(5) Explain: Glycoside and Saponin in detail