PAR-003-001539   Seat No. _____

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

October / November - 2018

IC - 503 : Pharmaceuticals - 1 and Fundamentals of Chemical Engineering

Faculty Code : 003
Subject Code : 001539

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 labeled diagram wherever necessary & assume suitable data.

(4) Question-1 carries 20 marks

(5) Question-2 & 3 carry 25 marks each.

1 Answer the following questions :   **20**

(1) Rheology is the study of relationship between the shear stress and shear rate in a real fluid. (True/False)

(2) Continuity equation is derived on the basis of law of conservation of _____ (Mass/Energy).

(3) What do you mean by Steady flow?

(4) Define the term fluid?

(5) Write mathematical statement of Fourier's law of conduction?

(6) Define reflux ratio.

(7) What is. natural convection?

(8) What is brine?

(9) What is the refrigerant code for (a) H_2O (b) Dichlorodifloromethane.

(10) Give full form of COP?

(11) Saccharin is an example of _____

(12) Soft, semisolid having plastic consistency preparation used for application to skin is known as Ointment. (True/False)

(13) Define: Suspension

(14) Give full form of HLB.

(15) _____ is an example of plant growth regulator.

(16) High molecular weight lipopolysaccharide is known as _____.

(17) Give one example of coloring agent.

(18) Who was the chairman of the fourth edition of Indian Pharmacopoeia?

(19) is the structure of ?
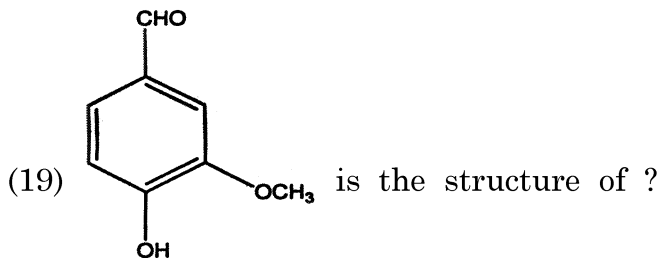
(20) Basic nitrogenous substances obtained from the natural source are called _____

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

    (1) Enlist any two types of non-Newtonian fluids.

    (2) What do you mean by Radiation mode and convection mode of heat transfer?

    (3) What is mean by 1 ton of refrigeration?

    (4) Define : (i) Palisade ratio (ii) Bactericide

    (5) Define : (i) Humectant (ii) Stomatal Number

    (6) Define : (i) Stomatal Index (ii) Antiseptic

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

    (1) Derive an equation for continuity equation with a neat diagram.

    (2) Write a note on fouling factor.

    (3) Classify compressor on the basis of (a) Stage (b) Drive (c) Pressure development.

(4) Explain : Parenteral route of drug administration

(5) Explain : Need for the dosage form (any six)

(6) Explain: Preservatives

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

(1) Explain with the help of neat diagram differential manometer or two liquid manometer.

(2) Derive equation for lower operating line for a distillation column.

(3) Derive an equation to calculate work required per cycle for single acting reciprocating compressor working isothermally with clearance.

(4) Explain : Sterilization in detail

(5) Discuss: Sutures and ligatures in detail

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

(1) Give any two characteristics of gaseous state.

(2) Write a note on glass wool as thermal insulator.

(3) Give any four applications of refrigeration.

(4) Define : (i) Antioxidant (ii) Pharmacopoeia

(5) Define : (i) Polishing agent (ii) Vein Islet Number.

(6) Define : (i) Pharmacognosy (ii) Vein Termination Number.

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

(1) Give advantage and disadvantage of orificemeter.

(2) Explain with diagram simple U tube manometer.

(3) Write a short note on ammonia as a refrigerant.

(4) Explain : Features of ideal surgical dressing.

(5) Explain : Sweetening agent

(6) Explain : Bandages in brief

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

    (1) Give construction and working of rotameter with a neat diagram.

    (2) Derive an equation for resistance in series and resistance in parallel for a rectangular block.

    (3) Discuss : Emulsion in detail

    (4) Explain : Classification of crude drugs in detail

    (5) Describe : History of indian Pharmacopoeia

———————