



BCH-003-001539

Seat No. _____

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

August – 2021

**IC - 503 : Pharmaceuticals - I & Fundamentals of
Chemical Engineering - I**

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.
- 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] Answer the following Multiple Choice Questions:

20

- 1) The substance which cannot be permanently deformed is called _____.
(Solid /Liquid)?
- 2) The transfer of energy from sun to earth is chiefly in the form of _____
- 3) The flow of water from the root to the tip of the tree is mainly _____ flow.
- 4) Freon is the type of Halo carbon refrigerants. True or False?
- 5) Write any characteristic of a liquid.
- 6) Mathematically, Reflux ratio is _____. (Lo/D or Lo x D)?
- 7) The correct range for coefficient of discharge through Orificemeter is?
- 8) The ratio of clearance volume to piston displacement volume is called _____.
- 9) CFC is also known as _____.
- 10) The reciprocating compressor is used to compress a fluid in _____ stages.
- 11) In emulsion the liquid in which the globules are dispersed is called Disperse phase. True / False?

- 12) Pyrogen is a high molecular weight_____.
(Lipopolysaccharides / Amino acids)?
- 13) Which of the following is a thermoset?
- 14) Define: Ligature
- 15) Saccharin is an example of_____.
- 16) Which dosage form is put into the body orifice?
- 17) The Shell of Capsule is made from?
- 18) Auxin is an example of plant growth regulator. True or False?
- 19) The substances which are medicinally active and derived from natural sources known as_____.
- 20) Who was the chairman for the publication of Indian Pharmacopoeia's 4th edition?

2(A) Answer any Three out of Six

6

- 1) What do you mean by a ton of refrigeration?
- 2) Give characteristics properties of liquids.
- 3) What do you mean by the term fouling factor?
- 4) Define: (i) Phytochemicals (ii) Pharmacopoeia.
- 5) Define: (i) Coating Agent (ii) Glidant
- 6) Give a definition of (1) Suspension & (2) Phytochemicals.

(B) Answer any Three out of Six

9

- 1) What is meant by steady flow and unsteady flow?
- 2) What do you mean by natural convection and forced convection? Give example.
- 3) Enlist various characteristics of good refrigerants.
- 4) Write a brief note on antioxidants.
- 5) Explain isolation of Alkaloid in brief
- 6) Discuss in brief features of ideal surgical dressing.

(C) Answer any Two out of Five

10

- 1) Derive an equation for heat flow through a cylinder.
- 2) Give principle, construction and working of an orifice meter.
- 3) Explain in detail: Carnot refrigeration cycle
- 4) Explain sutures and Ligatures in detail.
- 5) Explain: Classification of Crude Drugs in detail.

3(A) Answer any Three out of Six

6

- 1) What do we mean by the compressor and heat pump?
- 2) Define: a) Hydrostatic b) Aerodynamic.
- 3) What is meant by the term thermal conductivity? Give its units.
- 4) Define: (i) Palisade ratio (ii) Foreign Organic Matter
- 5) Define: (i) Stomatal Number (ii) Stomatal Index
- 6) Define: 1^o, 2^o and 3^o pharmaceutical packaging

(B) Answer any Three out of Six

9

- 1) Explain Mass and Energy balance of over a crystallizer.
- 2) Explain flow measurement in open channel through rectangular notch.
- 3) What is meant by steady flow and unsteady flow?
- 4) Enlist various routes of drug administration.
- 5) Explain: Sweetening Agent.
- 6) Explain in brief: Need for the dosage form (any six)

(C) Answer any Two out of Five

10

- 1) Explain in details Reynolds experiment with labeled diagram.
- 2) What pressure ratio in compressing adiabatically would give 50% apparent volumetric efficiency? Given clearance factor is 5% and adiabatic index is 1.4.
- 3) Explain in detail: History of Indian Pharmacopoeia
- 4) Explain emulsion in detail.
- 5) Discuss sterilization in detail.
