



International Islamic University Chittagong
Department of Pharmacy
Program: B. Pharm (Hons)

Examination: Final
Course Code: Pharm-3611

Session: Autumn-2021

Course Title: Pharmaceutical Engineering-I

Time: 2 Hours and 30 Minutes

Full Marks: 50

Group A (Marks: 20)
Answer any two questions

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| 1. | a) | Enumerate the working of FBD. | 3 |
| | b) | Point out the objectives of filter aids. | 3 |
| | c) | Compare and contrast between single and multiple effect evaporator. | 4 |
| 2. | a) | How does bubble point test detects filter media defects? | 3 |
| | b) | Describe the working process of rotary drum filter. | 4 |
| | c) | Elucidate the factors affecting rate of filtration. | 3 |
| 3. | a) | Prove that, centrifugal effect $= 2.013n^2d$ | 4 |
| | b) | Differentiate between centrifugal filter and centrifugal sedimenter. | 3 |
| | c) | Create your idea about the principle and construction of perforated basket centrifuge. | 3 |

Group B (Marks: 30)
Answer any three questions

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| 4. | a) | Compare the mechanism of killing of microorganism by physical and chemical method of sterilization. | 4 |
| | b) | Discuss the factors affecting sterilization. | 3 |
| | c) | Highlight the pharmaceutical importance of sterilization. | 3 |
| 5. | a) | How do LAL and rabbit test detect presence of pyrogen in pharmaceuticals? | 4 |
| | b) | Explain the sterilization process which is done by ethylene oxide gas. | 3 |
| | c) | Elucidate the construction and operation of autoclave. | 3 |
| 6. | a) | Show how distillation takes place when vapor pressure become equal to atmospheric pressure. | 4 |
| | b) | "Flash distillation is pressure dependent". Explain | 4 |
| | c) | What is the basic difference between simple and fractional distillation? | 3 |
| 7. | a) | What do you understand by maximum and minimum boiling point azeotrope. Provide an example of its separation | 4 |
| | b) | How distillation takes place in reduced pressure and its advantage. | 3 |
| | c) | Discuss how medicinal oil can be extracted by steam distillation. | 3 |