MAY 2011

[KY 341] **Sub. Code: 2902**

M.PHARM. DEGREE EXAMINATION
(Regulations 2010)

Candidates admitted from 2010-2011 onwards

FIRST YEAR

Branch I – PHARMACEUTICS

Paper II – INDUSTRIAL PHARMACY

Q.P. Code : 262902

Time : Three hours **Maximum : 100 marks**

Answer All questions

I. Essay Questions : **(6 x 10 = 60)**

1. Discuss in detail the formulation and evaluation of Parenteral products.
2. Discuss about Production management in Pharma Industries.
3. Describe Plastic containers used in packing of Pharmaceutical preparations. Add a note on evaluation of plastic containers.
4. Explain GMP guidelines for Sterile preparations.
5. Discuss about the Heat sterilization methods.
6. Explain in detail the filling of Hard gelatin capsules. Add a note on evaluation of capsules.

II. Write Short Notes : **(8 x 5 = 40)**

1. Objectives and Defects in Tablet coating.
2. Multivitamin Products.
3. How can shelf life be determined by accelerated stability method?
4. Optimization parameters.
5. Multiple Emulsions.
6. Industrial hazards and preventive measures due to fire accident.
7. Formulation of Dry syrup with example.
8. TRIPS and WTO.

****

October 2011

[KZ 341] **Sub. Code: 2902**

M.PHARM. DEGREE EXAMINATION

FIRST YEAR

BRANCH I – PHARMACEUTICS

PAPER II – INDUSTRIAL PHARMACY

Q.P. Code : 262902

Time : 3 hours **Maximum : 100 marks**

(180 Min)

Answer ALL questions in the same order.

I. Elaborate on :	**Pages (Max.)**	**Time (Max.)**	**Marks (Max.)**
1. What is Optimization? Discuss the various optimization techniques in formulation and processing.	17	40	20
2. Explain in detail about the significance of Pilot plant scale up study and large scale manufacturing techniques of Injections and Liquid orals.	17	40	20
II. Write notes on :			
1. Production Management.	4	10	6
2. Physics of tablet compression.	4	10	6
3. Techniques for the study of crystal properties and polymorphism.	4	10	6
4. Pharmaceutical aspects related to GATT and TRIPS.	4	10	6
5. Physicochemical and biological factors affecting stability of drugs.	4	10	6
6. Determination of shelf life by Accelerated Stability Testing.	4	10	6
7. Evaluation of plastic containers used in packaging of pharmaceutical preparation.	4	10	6
8. Industrial hazards and preventive measures due to fire accident.	4	10	6
9. Quality Assurance.	4	10	6
10. Multivitamin Products.	4	10	6

****

[LA 341] **MAY 2012** **Sub. Code: 2902**

M.PHARM. DEGREE EXAMINATION

FIRST YEAR

BRANCH I – PHARMACEUTICS

PAPER II – INDUSTRIAL PHARMACY

Q.P. Code : 262902

Time: 3 hours **Maximum: 100 marks**
(180 Min)

Answer ALL questions in the same order.

I. Elaborate on:	**Pages (Max.)**	**Time (Max.)**	**Marks (Max.)**
1. Discuss in detail about GMP consideration and material management for the Pharmaceutical Industry.	17	40	20
2. Differentiate Consolidation and Compression with definitions. Write a detailed note on the distribution and measurement of forces and physics of Tablets.	17	40	20
II. Write notes on:			
1. Thermosettings.	4	10	6
2. World Trade Organization.	4	10	6
3. Describe briefly on search methods used in optimization.	4	10	6
4. Techniques used to find out the crystal properties.	4	10	6
5. Define Sterilization and briefly explain types of sterilization.	4	10	6
6. Formulation of dry syrup with example.	4	10	6
7. Describe about the preventive measures due to electrical hazards.	4	10	6
8. ISO 9000 series.	4	10	6
9. Blood Products.	4	10	6
10. Pilot plant scale up preparation for liquid orals.	4	10	6

****

[LB 341] **OCTOBER 2012** **Sub. Code: 2902**

M.PHARM. DEGREE EXAMS

FIRST YEAR

BRANCH I – PHARMACEUTICS

PAPER II – INDUSTRIAL PHARMACY

Q.P. Code : 262902

Time : 3 hours **Maximum : 100 marks**

(180 Min)

Answer ALL questions in the same order.

I. Elaborate on :	**Pages (Max.)**	**Time (Max.)**	**Marks (Max.)**
1. Explain the role of various Physico-Chemical characteristics of a new drug molecule in preformulation studies.	17	40	20
2. Discuss in detail about different types of Pharmaceutical containers and closures including their merits and demerits.	17	40	20

II. Write notes on :

1. Material management in Pharma Industry.	4	10	6
2. Effect of particle size, moisture content and lubrication on strength of Tablets.	4	10	6
3. Intellectual Property Rights.	4	10	6
4. Significance of Pilot plant scale up study.	4	10	6
5. ISO 9000 series.	4	10	6
6. Optimization methods.	4	10	6
7. Multiple Emulsion.	4	10	6
8. Sterilization of various Injectables.	4	10	6
9. Overages and ICH guidelines.	4	10	6
10. Hazards and safety measures due to mechanical and electrical equipments used in Pharma Industry.	4	10	6

****

[LC 341] **APRIL 2013** **Sub. Code: 2902**

M.PHARM. DEGREE EXAMS
FIRST YEAR
BRANCH I – PHARMACEUTICS
PAPER II – INDUSTRIAL PHARMACY
Q.P. Code : 262902

Time : 3 hours **Maximum : 100 marks**

I. Elaborate on : **(2x20=40)**

1. Define Pharmaceutical Packing? What are the salientfeatures of packing material? Discuss about the packing of glass container and Plastic containers.

2. Define stability. What are the different types of stability and explain briefly about any two methods.

II. Write notes on : **(10x6=60)**

1. Preformulation study on polymorphism.
2. Differentiate moist heat and dry heat sterilization.
3. Patent Laws.
4. Prediction of shelf life by accelerated stability method.
5. Chemical Hazards and their preventive measures.
6. Physics of Tablets.
7. Process Validation.
8. Define Optimization and explain about Lagrangian method.
9. Describe about the production planning and sales forecasting.
10. Multivitamin Products.

****

[LD 341] **OCTOBER 2013** **Sub. Code: 2902**

M.PHARM. DEGREE EXAMINATIONS

FIRST YEAR

BRANCH I – PHARMACEUTICS

PAPER II – INDUSTRIAL PHARMACY

Q.P. Code : 262902

Time: Three Hours **Maximum: 100 marks**

Answer ALL questions in the same order.

I. Elaborate on : **(2 x 20 = 40)**

1. a) Explain production planning and control in Pharmaceutical Industry.

   b) Explain in detail about physicochemical factors affecting stability of drugs.

2. Discuss in detail about different types of Pharmaceutical containers and closures including their merits and demerits.

II. Write notes on : **(10 x 6 = 60)**

1. Material management in Pharma Industry.
2. Effect of particle size, moisture content and lubrication on strength of Tablets.
3. Intellectual Property Rights
4. Significance of Pilot plant scale up study.
5. ISO 9000 series.
6. Optimization methods.
7. Multiple Emulsions.
8. Sterilization of various Injectables.
9. Overages and ICH guidelines.
10. Hazards and safety measures due to mechanical and electrical equipments used in Pharma Industry.

****

[LE 341] **APRIL 2014** **Sub. Code: 2902**

M.PHARM. DEGREE EXAMS
FIRST YEAR
BRANCH I – PHARMACEUTICS
PAPER II – INDUSTRIAL PHARMACY
Q.P. Code : 262902

Time : 3 hours **Maximum : 100 marks**

I. Elaborate on : **(2x20=40)**

1. Write the significance of pilot plant scale up study. Discuss about the large scale manufacturing techniques of tablets & liquid orals.

2. Explain the methods to find out degradation pathways. Write in detail about determination of shelf life by accelerated stability testing.

II. Write notes on : **(10x6=60)**

1. Techniques for the study of inventory management.
2. Importance of solublization and surfactants in preformulation studies.
3. Measurement of compressional forces within the powder mass undergoing compression.
4. Explain the optimization methods.
5. Sterilization of blood products.
6. Effect of particle size, moisture content and lubrication on strength of tablet.
7. Selection and evaluation of packaging materials.
8. Industrial hazards and preventive measures due to fire accident.
9. Process validation.
10. GATT and TRIPS.

****

[LF 341] **OCTOBER 2014** **Sub. Code: 2902**

M.PHARM. DEGREE EXAMINATION
FIRST YEAR
BRANCH I – PHARMACEUTICS
PAPER II – INDUSTRIAL PHARMACY

Q.P. Code : 262902

Time : Three hours **Maximum : 100 marks**

I. Elaborate on: **(2 x 20 = 40)**

1. What is the pharmaceutical packaging and what are the desirable features of packaging materials? Discuss about Rubber as a packaging material.

2. Discuss about the pilot plant scale up techniques of ophthalmic products.

II. Write notes on: **(10 x 6 = 60)**

1. Particle size in preformulation
2. Surfactants and its importance
3. WTO
4. Classical optimization
5. Sterilization of blood products
6. Method to find out degradation pathways
7. ISO 9000 series
8. Inventory management
9. Multivitamin products
10. Industrial hazards and preventive measures due to electrical equipments.

****

[LG 341] **APRIL 2015** **Sub. Code: 2902**

M.PHARM. DEGREE EXAMINATION

FIRST YEAR

BRANCH I – PHARMACEUTICS

PAPER II – INDUSTRIAL PHARMACY

Q.P. Code : 262902

Time: Three Hours **Maximum: 100 marks**

Answer ALL questions

I. Elaborate on : **(2 x 20 = 40)**

1. Define Surfactant.
   Explain the process of solubilisation and the importance of surfactants in it.

2. Explain large scale manufacturing techniques of parenterals.

II. Write notes on : **(10 x 6 = 60)**

1. Explain the tablet compression techniques

2. Discuss sales forecasting

3. Describe optimization parameters

4. Discuss various sterilization equipments

5. Explain the physicochemical factors affecting stability of drug product

6. Explain sterilization of biotechnological products

7. Discuss about overages

8. Discuss the shelf life prediction

9. Discuss the plastic containers used in pharmaceutical packaging

10. Explain the safety measures involved in pharmaceutical industry

****

[LH 341] **OCTOBER 2015** **Sub. Code: 2902**

M.PHARM. DEGREE EXAMINATION
FIRST YEAR
BRANCH I – PHARMACEUTICS
PAPER II – INDUSTRIAL PHARMACY

Q.P. Code: 262902

Time: Three hours **Maximum: 100 marks**

I. Elaborate on: **(2 x 20 = 40)**

1. a) Define Patent. What are the types of patent? What are the reasons for getting patent?
   b) What is WTO? Mention the parts of WTO. What are the functions of WTO?

2. Explain the ICH guidelines for stability studies for Pharmaceutical product.

II. Write notes on: **(10 x 6 = 60)**

1. Define solubilisation and Co solvency with examples.
2. Discuss in detail about the behavior of particles undergoing compression.
3. Explain process validation.
4. Write a note on GATT and TRIPS.
5. Define optimization. Explain the optimization parameters.
6. Explain the evaluation of parentrals.
7. Comment on the production of liquid orals.
8. Enumerate sterilization of implantable devices.
9. Discuss different types of Pharmaceutical containers.
10. Write a note on safety measure specific in industrial hazards due to mechanical equipments.

****

[LI 341] APRIL 2016 **Sub. Code: 2902**

M.PHARM. DEGREE EXAMINATION
FIRST YEAR
BRANCH I – PHARMACEUTICS
PAPER II – INDUSTRIAL PHARMACY

Q.P. Code: 262902

Time: Three hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Explain in detail about the Physicochemical and Biological factors affecting stability of Drug.

2. Write in detail about Production management and GMP consideration for the Pharmaceutical Industry.

II. Write notes on: **(10 x 6 = 60)**

1. Different types of pharmaceutical containers.
2. ICH guidelines for stability studies.
3. Intellectual property rights.
4. Effect of hardness of the tablets on disintegration time.
5. Solubilisation and surfactants.
6. Principle and applications of heat sterilization.
7. Sterility testing of commercially available injections.
8. Effect of particle size, moisture content on strength of tablets.
9. Safety measures in pharmaceutical industries.
10. Accelerated stability testing.

****

[LJ 341] OCTOBER 2016 **Sub. Code: 2902**

M.PHARM. DEGREE EXAMINATION
FIRST YEAR
BRANCH I – PHARMACEUTICS
PAPER II – INDUSTRIAL PHARMACY

Q.P. Code: 262902

Time: Three hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. a) Define Compaction and Compression. Write in detail about the physics of tablet compression.
   b) Briefly explain about the effect of particle size and moisture content on strength of tablet.

2. Define Optimization? Discuss the various optimization techniques in formulation and processing.

II. Write notes on: **(10 x 6 = 60)**

1. Importance of solubilisation in preformulation.
2. Closures used in pharmaceutical packaging.
3. Industrial hazards and safety measures due to chemicals and pharmaceuticals.
4. Physicochemical factors affecting stability of drugs.
5. Sterilization of implantable devices.
6. Good manufacturing practice.
7. Overages and its significance.
8. Sales forecast.
9. Sterility testing of ampoules and vials.
10. Polymorphism and crystal properties with examples.

****

[LK 341] MAY 2017 **Sub. Code: 2902**

M.PHARM. DEGREE EXAMINATION
FIRST YEAR
BRANCH I – PHARMACEUTICS
PAPER II – INDUSTRIAL PHARMACY

Q.P. Code: 262902

Time: Three hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Discuss in detail about different types of pharmaceutical containers and closures including their merits and demerits.

2. Discuss about the pilot plant scale up techniques of ophthalmic products.

II. Write notes on: **(10 x 6 = 60)**

1. Physics of tablet compression.
2. ISO 9000 series.
3. Material management in pharma industry.
4. Classical optimization technique.
5. Method to find out degradation pathways.
6. Sterilization of blood products.
7. Formulation of dry syrup.
8. Overages and ICH guidelines.
9. Generalized Agreement on Tariffs and Trade (GATT).
10. Industrial hazards and preventive measures due to electrical equipments.

****

[LL 341] OCTOBER 2017 **Sub. Code: 2902**

M.PHARM. DEGREE EXAMINATION
FIRST YEAR
BRANCH I – PHARMACEUTICS
PAPER II – INDUSTRIAL PHARMACY

Q.P. Code: 262902

Time: Three hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Explain in detail about the significance of pilot plant scale up study and large scale manufacturing techniques of liquid orals and ophthalmic products.

2. Define pharmaceutical packaging. What are desirable features of packaging materials and discuss about glass as packaging materials?

II. Write notes on: **(10 x 6 = 60)**

1. Industrial hazards and preventive measures due to mechanical equipments.
2. World Trade Organization.
3. Inventory management in pharma industry.
4. Effect of moisture content and lubrication on strength of tablets.
5. Sterilization method for Large Volume of Parenteral Dosage forms (LVP).
6. Classical optimization.
7. Determination of shelf life by accelerated stability testing.
8. Surfactants and its importance.
9. Objectives and defects in tablet coating.
10. Quality assurance.

****

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LM 341] MAY 2018 **Sub. Code: 2902**

M.PHARM. DEGREE EXAMINATION
FIRST YEAR
BRANCH I – PHARMACEUTICS
PAPER II – INDUSTRIAL PHARMACY

Q.P. Code: 262902

Time: Three hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. What is the pharmaceutical packaging and what are the desirable features of packaging materials? Discuss about rubber as a packaging materials.

2. a) Explain production planning and control in Pharma Industry.
   b) Add a note on GMP in Pharmaceutical Industry.

II. Write notes on: **(10 x 6 = 60)**

1. Importance of particle size and shape in pre-formulation study.
2. Optimization parameter.
3. Objective and functions of World Trade Organization (WTO).
4. Sterilization of blood products.
5. Method to find out degradation pathways.
6. Physics of tablet compression.
7. Polymorphism and crystal properties with examples.
8. ISO 9000 series.
9. Compaction of powders.
10. Production management.

****

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LN 341] OCTOBER 2018 **Sub. Code: 2902**

M.PHARM. DEGREE EXAMINATION
FIRST YEAR
BRANCH I – PHARMACEUTICS
PAPER II – INDUSTRIAL PHARMACY

Q.P. Code: 262902

Time: Three hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. a) Explain production planning and control in Pharmaceutical Industry.
   b) Explain in detail about physicochemical factors affecting stability of drugs.

2. Explain the role of various physiochemical characteristics of a new drug molecule in pre-formulation studies.

II. Write notes on: **(10 x 6 = 60)**

1. Material management in Pharma Industry.
2. Significance of pilot plant scale up study.
3. Overages and ICH guidelines.
4. Trade related Intellectual Property Rights (TRIPS).
5. Objective and functions of World Trade Organization.
6. Physics of tablet compression.
7. Closures used in Pharmaceutical packaging.
8. Describe briefly search method used in optimization.
9. GMP.
10. Generalized Agreement on Tariff and Trade (GATT).

****

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LO 341] MAY 2019 **Sub. Code: 2902**

M.PHARM. DEGREE EXAMINATION
FIRST YEAR
BRANCH I – PHARMACEUTICS
PAPER II – INDUSTRIAL PHARMACY

Q.P. Code: 262902

Time: Three hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Explain in detail about optimization techniques in pharmaceutical formulation and processing.

2. Discuss about the large scale manufacturing techniques of tablets and liquid orals and write about the significance of pilot plant scale up study.

II. Write notes on: **(10 x 6 = 60)**

1. Intellectual property rights.
2. Overages and ICH guidelines.
3. Sterilization of various injectables.
4. Effect of particle size, moisture content and lubrication on strength of tablets.
5. ISO 9000 series.
6. Multiple Emulsions.
7. Material management in Pharma Industry.
8. GATT and TRIPS.
9. Process validation.
10. Techniques for the study of inventory management.

****

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LP 341] OCTOBER 2019 **Sub. Code: 2902**

M.PHARM. DEGREE EXAMINATION
FIRST YEAR
BRANCH I – PHARMACEUTICS
PAPER II – INDUSTRIAL PHARMACY

Q.P. Code: 262902

Time: Three hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Explain in detail about the significance of pilot plant scale up study and large scale manufacturing techniques of multiple emulsion and multivitamin products.

2. Explain the role of various physicochemical characteristics of new drug molecule in pre-formulation studies.

II. Write notes on: **(10 x 6 = 60)**

1. Industrial hazards and preventive measures due to fire accidents.
2. World Trade organization.
3. ISO 9000 series.
4. Physics of tablet compression.
5. Sterilization of blood products.
6. Concept of optimization.
7. Quality assurance.
8. Packaging of glass containers including its merits and demerits.
9. Pilot plant scale up techniques for capsules.
10. Formulation of dry syrup with examples.

****

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LQ 0121] JANUARY 2021 Sub. Code: 2902

(APRIL 2020 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION

FIRST YEAR

BRANCH I – PHARMACEUTICS

PAPER II – INDUSTRIAL PHARMACY

Q.P. Code: 262902

Time : Three hours Answer ALL Questions Maximum : 100 Marks

I. Elaborate on: (2 x 20 = 40)

1. Differentiate consolidation and compression with definitions. Write a detailed note on the distribution and measurement of forces and physics of tablets.

2. Explain in detail about the significance of Pilot plant scale up study and large scale manufacturing techniques of injections and Liquid orals.

II. Write notes on: (10 x 6 = 60)

1. Sterilization of blood products.
2. Industrial hazards and preventive measures due to fire accident.
3. WTO.
4. Discuss the plastic containers used in pharmaceutical packaging.
5. Selection and Valuation of plastic pharmaceutical containers.
6. Enumerate sterilization of implantable devices.
7. Define solubilisation and co-solvency with examples.
8. Effect of hardness of the tablets on disintegration time.
9. Various optimization techniques.
10. Accelerated stability testing.

****

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MPHARM 0122] JANUARY 2022 Sub. Code: 2902
(APRIL 2021 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION
FIRST YEAR
BRANCH I – PHARMACEUTICS
PAPER II – INDUSTRIAL PHARMACY
Q.P. Code: 262902

Time : Three hours **Answer ALL Questions** **Maximum : 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Differentiate consolidation and compression with definitions. Write a detailed note on the distribution and measurement of forces and physics of tablets.

2. Explain in detail about the significance of Pilot plant scale up study and large scale manufacturing techniques of injections and Liquid orals.

II. Write notes on: **(10 x 6 = 60)**

1. Sterilization of blood products.
2. Industrial hazards and preventive measures due to fire accident.
3. WTO.
4. Discuss the plastic containers used in pharmaceutical packaging.
5. Selection and Valuation of plastic pharmaceutical containers.
6. Enumerate sterilization of implantable devices.
7. Define solubilization and co-solvency with examples.
8. Effect of hardness of the tablets on disintegration time.
9. Various optimization techniques.
10. Accelerated stability testing.

****