[KD 269] **APRIL 2001**

M.Pharmacy DEGREE EXAMINATION.

(New Regulations)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. Discuss the following as applied to pharmaceutical manufacturing :

(a) Production planning and control

(b) Safety measures

(c) Quality Assurance. (25)

2. (a) Discuss the importance of rheology in pharmaceutical manufacturing. Describe the rotational viscometers used in Pharmacy.

(b) What is validation? Discuss the validation of the sterilization processes. (25)

3. Describe the following :

(a) Machinery needed for tablet making

(b) Processing and quality control of syrups. (25)

4. (a) What are accelerated stability tests? Mention their advantages. How will you evaluate the effect of moisture and light by accelerated stability testing methods.

(b) Describe the pharmacopoeial tests and standards of packaging materials. (25)

5. Write notes on :

(a) Formulation and supply of deodorants

(b) Formulation and manfacture of an antidandruff shampoo

(c) Quality control tests of aerosols. (25)

6. Write notes on :

(a) Aseptic processing

(b) Formulation of multivitamin products

(c) Care in handling radio–pharmaceuticals. (25)

[KD 290] **APRIL 2001**

M.Pharmacy DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours Maximum : 100 marks

Answer ALL the questions.

All questions carry equal marks.

1. Write in detail about the safety measures in a pharmaceutical industry. (25)

2. What is the importance of particle size? Describe the methods of particle size measurement. (25)

3. (a) Draw schematic drawings of 'wet granulation', 'dry granulation' and 'direct compression'.

(b) Discuss the formula for a typical chewable antacid tablet.

(c) Discuss about the components of sucrose based and non-sucrose based syrups. (25)

(a) How do you choose the form of package?

(b) Discuss the testing procedures that are required to be performed on :

(i) packaging material

(ii) entire (whole) package. (25)

[KE 269] **NOVEMBER 2001**

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. (a) Discuss the characteristics and importance of the various ingredients used in nail lacquers. (13)

(b) Explain the formulation aspects of ophthalmic products. (12)

2. (a) Explain how the required hardness and friability is achieved during tablet compression. (13)

(b) Discuss the pressure distribution within compressed tablets. (12)

3. Elaborate on the safety precautions to be taken in storage and handling of chemicals in a factory. (25)

4. Write short notes on : $(4 \times 6\frac{1}{4} = 25)$

(a) Accelerated stability studies

(b) GMP

(c) Glass as a packaging material.

(d) Dry syrups.

5. (a) With the help of a flow diagram, explain the layout of a parenteral section. (13)

(b) Explain the formulation aspects of compact powders. (12)

6. (a) What are the therapeutic applications of Radio-pharmaceuticals? (13)

(b) Discuss the biological factors affecting the stability of the drugs. (12)

[KE 290] **NOVEMBER 2001**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. (a) Explain the various aerosol systems with examples. (13)

(b) Explain the theory involved in Moist heat sterilization. (12)

2. (a) Discuss the formulation and evaluation of non-sterile creams. (12)

(b) List out the stipulated requirements of GMP in schedule M of D & C Act and Rules. (13)

3. (a) What are the diagnostic applications of Radiopharmaceuticals. (13)

(b) Discuss the physico-chemical factors affecting the stability of drugs. (12)

4. Write short notes on : (25)

(a) LAL Test

(b) Material Management

(c) Depilatories

(d) Official tests for tablets.

SEPTEMBER 2002

[KH 269]

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. Write in detail about
   (a) Production planning and
   (b) Sales forecasting.

2. Discuss the concept of
   (a) Thixotropy
   (b) Rheopexy
   (c) Dilatant flow
   (d) Plastic flow
   (e) Newtonian flow

   What are 'Time-dependent effects' in these systems?

3. (a) What are the solvents and vehicles used for injections?

(b) Describe the pyrogen tests.

(c) How are parenteral products sterilized?

(d) Compare the I.V. and I.M. routes of injection.

4. (a) What are the maximum permissible doses of radiation (from radio isotopes)?

(b) Discuss the special features of formulation of parenteral radiopharmaceuticals.

(c) What measures would you suggest for decontamination and waste disposal of radionuclides?

5. (a) Explain the following paths of drug degradation with examples and suggest methods of protection :

(i) Hydrolysis

(ii) Oxidation

(iii) Racemisation.

(b) How do you create high stress (challenge) in stability testing?

(c) What are ICH guidelines in stability testing?

6. (a) What is an ideal 'depilatory'?

(b) What are the functions and properties of a face powder?

(c) Give the examples of vegetable hair dyes and metallic hair dyes (including representative formulae)

[KH 290] SEPTEMBER 2002

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

(4 × 25)

1. (a) Discuss about various components of an aerosol system and their construction. How are contents filled in that system and assembled?

(b) Discuss how toxicity of propellants used in aerosol is assessed. Also discuss various quality control tests for aerosols.

2. (a) Discuss about machinaries involved in the production of hard gelatin capsules and also large scale filling of hard gelatin capsules.

(b) Discuss the calculation of expiry dates of formulations based on accelerated chemical kinetics study. What are its limitations?

3. (a) Discuss the formulation, handling, dose calculations, labelling of radioactive injections. Give examples and uses.

(b) Explain the operation of a large scale autoclave. Explain about various precautions in handling such equipments. Add a note on sterilisation indicators.

4. (a) What are depilatories? Discuss its formulation. How are depilatories evaluated?

(b) Explain the concept of dry syrups. Discuss how dry syrups are manufactured, packed and labelled. Give examples.

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[KI 269] **APRIL 2003** **Sub. Code : 2002**

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

$(4 \times 25 = 100)$

1. (a) Discuss in detail the design of an aseptic room and aseptic processing. How are aseptic room validated?

(b) An injection containing thermo labile drug is to be formulated in ampoules. Give in detail how it is to be manufactured.

2. Write short notes on : (any THREE)

(a) Rheology of suspensions and their stability

(b) Particle size determination by Andreason pipette

(c) Formulation and evaluation of shampoos

(d) Formulation and evaluation of nail polish.

3. (a) Discuss in detail the problems encountered in formulating multi vitamin formulations. Add a note on overages.

(b) Give the pharmacopoeial specifications for parentral glass container.

4. (a) Explain how expiry date of formulations are found out. Explain various storage conditions.

(b) Explain quality control test for aerosol formulations.

5. Write notes on :

(a) Discuss about film coating of tablets and their advantages.

(b) How are medicines formulated in soft gelatin capsules?

6. (a) What are the various safety measures for chemical hazards in a chemical industry?

(b) Discuss about production, packaging Dosage calculation and handling of radio pharmaceuticals and also give examples with uses.

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[KI 290] APRIL 2003 Sub. Code : 1002

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

1. (a) Discuss about technique of material management in pharmaceutical industries. (12)

(b) Discuss about safety measures from chemical hazards in pharmaceutical industries. (13)

2. (a) Explain how large volume parentrals are manufactured? (12)

(b) Explain in detail quality control tests for parentrals. (13)

3. Write notes on :

(a) Formulation of Dry syrups with examples. (12)

(b) Incompatability problem while formulating multi vitamin products. (13)

4. (a) Discuss the principle of accelerated stability testing. (12)

(b) Give a pharmacopoeial specification of testing rubber closures for vials. (13)

OCTOBER 2003

[KJ 290] **Sub. Code : 1002**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

1. (a) Explain the various mechanisms that affect the stability of tablets. (13)

(b) How container and closure system for tablet affect the stability of tablets? (12)

2. (a) Briefly explain the methods of sterilization employed in pharmaceutical industry. Mention advantages and disadvantages of each process. (13)

(b) Write a brief note on legal regulations and controls of radio–pharmaceuticals. (12)

3. (a) Discuss the formulation and evaluation of parenteral dosage form. (13)

(b) Write a note on toothpastes. (12)

4. (a) Discuss the formulation and production of soft gelatin capsules. Draw neat diagrams wherever necessary. (13)

(b) Describe the various tests for the evaluation of a shampoo. (12)

[KK 290] APRIL 2004 Sub. Code : 1002

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours Maximum : 100 marks

Sec. A & B : Two hours and forty minutes Sec. A & B : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

SECTION A

Give Long Essays on : (2 × 15 = 30)

1. Explain about manufacturing of Hard gelatin capsules. Give the operation of Automatic hard gelatin capsule filling machines.

2. Explain about two phase and three phase aerosol systems. Explain various filling techniques with aerosol. Give the quality control tests for aerosols.

SECTION B

Give short notes on : (10 × 5 = 50)

3. Layout of the building and its importance.

4. Inventory control in material management.

5. Formulation of dry syrups.

6. Principle of accelerated stability testing.

7. Preparation of Depilatories formulation.

8. Formulation of Lozenger tablets.

9. Pharmacopocial test for rubber closures for vials.

10. Radiopharmaceuticals for diagnostic purposes.

11. Validation of an aseptic room.

12. Methods to find degradative pathways of pharmaceuticals.

AUGUST 2004

[KL 290] Sub. Code : 1002

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours Maximum : 100 marks

Sec. A & B : Two hours and forty minutes Sec. A & B : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

SECTION A

Give Long Essays on : $(2 \times 15 = 30)$

1. What is micromeritics? How will you determine particle size of a drug powder by sedimentation technique using Andreasen pipette? Explain with the help of a neat sketch of the pipette. (1 + 10 + 4 = 15)

2. State the factors that influence the selection of package for a pharmaceutical product. How will you evaluate hydrolytic resistance (Pharmacopoeial) of glass containers for injectable preparations? (5 + 10 = 15)

SECTION B

Write Short notes on : (10 × 5 = 50)

3. How will you evaluate capsules for uniformity of weight?

4. Briefly discuss the in process control tests for manufacture of tablets.

5. Discuss formulation development of a typical depilatory preparation.

6. Differentiate the mode of operation between liquefied gas and compressed gas aerosol systems.

7. How a numerical designation is used for nomenclature of fluorinated hydrocarbon propellants?

8. Discuss oxidation as a major cause of pharmaceutical instability.

9. What is overage and role of overage in pharmaceutical product stability?

10. Define the compendial containers : well closed container, hermetic container and tightly closed container.

11. State how shelf life of a pharmaceutical product is predicted by accelerated test by applying Arrhenius equation.

12. How the radiopharmaceutical doses are expressed and how the absorbed doses are measured? State the SI units in both the cases.

FEBRUARY 2005

[KM 290] **Sub. Code : 1002**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours Maximum : 100 marks

Sec. A & B : Two hours and forty minutes Sec. A & B : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

SECTION A — (2 × 15 = 30 marks)

Give Long Essay on :

1. Explain the different methods of sterilisation with examples and equipments.

2. Describe the containers and closures commonly used for parentral products.

SECTION B — (10 × 5 = 50 marks)

Write short notes on :

3. Test for pyrogens.

4. Accelerated stability studies.

5. Compressed gas aerosols.

6. Safety measures in Pharmaceutical Industries.

7. Deodorants.

8. Sterilisation indicators.

9. Nail lacquers.

10. QC tests for tablets.

11. Formulation of dry syrups.

12. Radiopharmaceuticals for diagnostic purposes.

[KN 290] AUGUST 2005 Sub. Code : 1002

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours | Maximum : 100 marks

Theory : Two hours and forty minutes | Theory : 80 marks

M.C.Q. : Twenty minutes | M.C.Q. : 20 marks

Answer ALL questions.

I. Give Long Essay on : (2 × 15 = 30)

1. Define Rheology. Classify and explain different type of flow behaviour. Explain the role of cone and plate viscometer in Rheology. (1 + 8 + 6 = 15)

2. Explain in detail the use and type of propellant, containers and valves used in aerosol formulations. Discuss the quality control tests for areosols. (10 + 5 = 15)

II. Short notes : (10 × 5 = 50)

1. What are the safety measures to be taken with respect to fire in pharmaceutical industry?

2. What are dry syrups? How are they formulated? Explain with an example.

3. What are sterilization indicators? Discuss on chemical indicators.

4. What are the raw materials used in the formulation of tooth paste? Explain how they are formulated giving an example.

5. What are the physicochemical and biological factors affecting stability of drugs?

6. How will you evaluate plastic containers?

7. How radio pharmaceuticals are handled? What are the various packing techniques required for radio pharmaceuticals?

8. What do you mean by therapeutic incompatibility? What are the rationals for drugs combinations?

9. How clear liquid shampoos are prepared and evaluated?

10. Discuss the quality control tests for parenterals.

[KO 290] MARCH 2006 Sub. Code : 1002

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours | Maximum : 100 marks

Theory : Two hours and forty minutes | Theory : 80 marks

M.C.Q. : Twenty minutes | M.C.Q. : 20 marks

Answer ALL questions.

I. Give Long Essay on : (2 × 15 = 30)

1. (a) Explain the production and packaging techniques involved in formulations and manufacturing of Radio Pharmaceuticals.

(b) Give various methods of expressing doses of radio pharmaceuticals. (10 + 5)

2. Describe the different containers and closures used commonly for parentral products. (15)

II. Write short notes on : (10 × 5 = 50)

1. Fire safety in Pharmaceutical Industry.

2. Thixotropy.

3. Quality control tests of ophthalmic products.

4. Sterilination indicators.

5. Preparation of nail polishes.

6. Accelerated stability testing.

7. Alkalinity test for glasses.

8. Particle size distribution.

9. Multiple emulsions.

10. Pharma Copocial specifications for plastics.

SEPTEMBER 2006

[KP 290] **Sub. Code : 2806**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours	Maximum : 100 marks
Theory : Two hours and forty minutes	Theory : 80 marks
M.C.Q. : Twenty minutes	M.C.Q. : 20 marks

Answer ALL questions.

I. Give Long Essay on :

(1) (a) Precautions in handling radio pharmaceuticals

(b) Discuss the incompatabilities encountered during multi-component formulations.

(10 + 10 = 20)

(2) Define micromeritics. Discuss the significance and application of micromeritics in pharmacy. Explain the methods of determining specific surface. (1 + 4 + 10)

(3) Explain the physicochemical and biological factors affecting stability of drugs. Define shelf file. Give the principle of determining shelf life by Accelerated Stability Testing. (9 + 1 + 5)

II. Short notes : (6 × 5 = 30)

(1) What are the safety measures to be taken with respect to chemicals in pharmaceutical industry?

(2) Formulation of multiple emulsions.

(3) Discuss about the formulation of dry syrups.

(4) Define Thixotropy. Discuss the applications of Thixotropy in pharmacy.

(5) Quality control test for aerosols.

(6) Depilatories.

[KQ 290] MARCH 2007 Sub. Code : 2806

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

I. Long Essay :

1. Describe the different container and closures used commonly for parental products. (20)

2. Classify the different types of Shampoos. Explain the formulation and quality control tests for shampoos. (5 + 10 = 15)

3. Enumerate the advantages of the tablet dosage form. Describe in detail the wet granulation technique of tablet manufacture. Write a note on the advantages of aqueous based film coating. (3 + 10 + 2)

II. Short notes : (6 × 5 = 30)

1. Define Incompatibility. Explain incompatibilities encountered with respect to multicomponent formulations with suitable examples.

2. Write in detail the evaluation procedures for pharmaceutical grade packaging material viz., rubber and glass.

3. Explain the procedure for determining shelf life of a formulation by accelerated stability testing.

4. "Define aerosols". Explain their advantages and the different quality control tests for aerosels.

5. Describe with the help of a neat labelled diagram the detailed working of an autoclave.

6. Write a note about formulation of multivitamin products.

MARCH 2007

[KQ 316] **Sub. Code : 2852**

M.Pharm. DEGREE EXAMINATION.

(Regulation 2006)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

I. Give Long Essay on :

1. (a) Explain the physics of tablet compression.

(b) Explain the GMP guidelines for parenteral formulations and discuss ISO 9000 series. (10 + 10 = 20)

2. Explain various instability problems associated with formulations and discuss accelerated stability testing for the determination of shelflife. Add a note on ICH guidelines for stability testing. (5 + 5 + 5 = 15)

3. Define sterilization. Explain different sterilization techniques used in pharmaceutical industries and discuss how syringes are tested for sterility. (2 + 8 + 5 = 15)

II. Short notes : (6 × 5 = 30)

1. Optimization methods in pharmaceutical formulations.

2. GATT and TRIPS.

3. Selection and evaluation of glass containers.

4. Preventive system for fire accidents in Pharmaceutical Industries.

5. Stabilization of ophthalmic products.

6. Effect of polymorphism in pharmaceutical formulations.

SEPTEMBER 2007

[KR 290] **Sub. Code : 2806**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch I – Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

I. Long Essay on :

1. Describe the method of manufacture of 50,000 sugar coated ferrous sulphate tablets each weighing 300 mg of ferrous sulphate. Justify the use of each ingradient. Enumerate the merits and demerits of equipments you selected in each stage of manufacturing. (20)

2. Explain the terms 'Rheopexy and Pseudoplasticity' Enumerate the various applications of rheology with respect to semi-solid and liquid dosage forms with suitable examples. (15)

3. What are parenteral dosage forms? Explain the principles and procedures involved in the preparation. Give the quality control tests for parenterals. (15)

II. Write Short notes on : (6 × 5 = 30)

1. Accelerated stability studies on solid dosage forms.

2. Legal control and building layout for a parenteral unit.

3. Sterility testing of pharmaceuticals.

4. Formulation aspects of Ophthalmic products.

5. In Process quality control of capsules.

6. Manufacture of hard gelatin capsules.

SEPTEMBER 2007

[KR 316] **Sub. Code : 2852**

M.Pharm. DEGREE EXAMINATION.

(Regulation 2006)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

I. Long Essay type :

1. (a) Discuss about empiric models in process optimization.

(b) Explain the concepts of scale up and pilot plant with particular reference to tablets. (8 + 12 = 20)

2. (a) What are the mass-volume relationships that are important in powder/granule handling?

(b) Describe in detail about compression and consolidation in high loads.

(c) Write notes on energy in involved in compression of tablets. (15)

3. Discuss about the choice, merits, demerits and evaluation of different types of plastics as pharmaceutical packaging material. (15)

II. Short answer type : (6 × 5 = 30)

1. Controls in sterility test.

2. Dry syrup.

3. Expiry date.

4. Mechanical hazards.

5. Drug exipient interaction.

6. CGMP.

September 2008

[KT 290] **Sub. Code : 2806**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Q.P.Code : 262806

Time : Three hours Maximum : 100 marks

Answer ALL questions.

I. Long Essay : (3 × 20 = 60)

1. Give a detailed account of Pharmaceutical packaging including their evaluation methods and specifications.

2. Discuss large scale manufacturing of hard and soft gelatin capsules, mentioning principles involved and machineries used.

3. Explain in detail the shelf-life determination via accelerated stability testing.

II. Short notes : (8 × 5 = 40)

(1) Sterility testing.

(2) Precautions in handling radio pharmaceuticals.

(3) Applications of Micromeritics in pharmacy.

(4) Formulation of shampoos.

(5) Quality control of Aerosols.

(6) Production Management in pharmaceutical industry.

(7) Pharmaceutical incompatibilities.

(8) Multiple Emulsions.

September 2008

[KT 316] **Sub. Code : 2852**

M.Pharm. DEGREE EXAMINATION.

(Regulation 2006)

First Year

Branch I — Pharmaceutics

Paper II — INDUSTRIAL PHARMACY

Q.P. Code : 262852

Time : Three hours Maximum : 100 marks

Answer ALL questions.

I. Long Essays : (3 × 20 = 60)

1. Explain in detail about degradative pathways which accounts for the decomposition of active ingredients in the pharmaceutical dosage forms?

2. Discuss the selection and evaluation of pharmaceutical packaging materials?

3. Write in detail about optimization methods?

II. Short notes : (8 × 5 = 40)

1. Physics of tablet compaction.

2. Polymorphism in preformulation.

3. ISO 9000 series.

4. Sterility testing of ampoules, vials and transfusion bottles.

5. Effect of particle size on strength of tablets.

6. Pharmaceutical aspects related to GATT.

7. Significance of pilot plant scale up study.

8. Safety measures in pharmaceutical Industry.

March 2009

[KU 316] **Sub. Code: 2852**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch I – PHARMACEUTICS

Paper II – INDUSTRIAL PHARMACY

Q.P. Code : 262852

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

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. Write the significance of Pilot plant scale up study. Discuss about the large scale manufacturing techniques of tablets and capsules .

2. Explain in detail about physicochemical and biological factors affecting stability of drugs

3. Discuss in detail about different types of pharmaceutical containers and closures.

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

1. Surfactants and its importance in preformulation
2. Effect of particle size and moisture content on strength of tablets.
3. Optimization parameters.
4. Sterility testing of parenteral products.
5. Overages and ICH guidelines.
6. Multiple emulsions.
7. Process validation
8. GATT.

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September 2009

[KV 316] **Sub. Code: 2852**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch I – PHARMACEUTICS

Paper II – INDUSTRIAL PHARMACY

Q.P. Code : 262852

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

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. Define pre-formulation, what are the goals of pre-formulation study programme and explain the different parameters required to be studied for designing dosage form.

2. Define optimization, what are the optimization parameters and write a detailed note on lagrangian method used in optimization.

3. What is pharmaceutical packaging and what are the desirable features of packaging materials. Discuss about glass as a packaging material.

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

1. ISO 9000.
2. General considerations in pilot plant scale up techniques.
3. Merits and demerits of sterilization.
4. Industrial hazard due to fire accidents and the preventive measures.
5. Multivitamin products.
6. Rubber closers.
7. Patent.
8. TRIPS.

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March 2010

[KW 316] **Sub. Code: 2852**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch I – PHARMACEUTICS

Paper II – INDUSTRIAL PHARMACY

Q.P. Code : 262852

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

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. Explain the energy and force involvement in compression of tablets and write a note on effect of particle size and moisture content on the tablet compression.

2. Inventory management is essential to the pharmaceutical industry for profitability. Justify.

3. Discuss the pilot plant scale up techniques for tablets.

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

1. List out the factors to be considered in the selection of liner.
2. Sterility testing of ophthalmic preparations.
3. Intellectual property rights.
4. Plastic containers.
5. ICH guidelines for stability studies.
6. Validation.
7. GATT.
8. Write a note on Type I, II & III glass containers.

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September 2010

[KX 316] **Sub. Code: 2852**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch I – PHARMACEUTICS

Paper II – INDUSTRIAL PHARMACY

Q.P. Code : 262852

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

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. Discuss classical optimization and write in detail about search methods used in optimization.

2. Write in detail the techniques used in managing inventories and discuss about sales forecasting.

3. Discuss the various Physico-Chemical properties of new drugs substances in the preformulative study of different dosage forms.

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

1. Measurement of forces within the powder mass under going compression.
2. WTO.
3. Equipments in sterilization process.
4. ICH Guidelines of stability testing.
5. Evaluation of glass as a pharmaceutical packaging material.
6. Safety measures in the Pharm Industry.
7. Significance of pilot plant scale up study.
8. Sterility testing of surgical sutures and ligatures.

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MAY 2011

[KY 316] **Sub. Code: 2852**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch I – PHARMACEUTICS

Paper II – INDUSTRIAL PHARMACY

Q.P. Code : 262852

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

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. What are the different types of stability of pharmaceutical products? Discuss the evaluation of physical stability of solid dosage forms.
2. Discuss the cost controls in production management.
3. Discuss the role of thermoplastics in pharmaceutical packaging.

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

1. Sterility testing of parenterals.
2. Scale up operations in the manufacture of dry syrups.
3. Preformulation study on polymorphism.
4. Optimization by factorial design.
5. Patent laws.
6. Factors affecting strength of tablets.
7. Solubilisation.
8. Principle and applications of heat sterilization.

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