APRIL - 1991

047

THIRD B.PHARM. DEGREE EXAMINATION, APRIL 1991.

PHARMACEUTICAL TECHNOLOGY — Paper V

Time : Three hours. Maximum : 75 marks.

Answer any FIVE questions.
All questions carry equal marks.

1. Discuss the rheological behaviour of Non-Newtonian systems. Give the working principle and operation of cone and plate viscometer with its advantages and disadvantages.

2. Discuss the design and operation of fluidised bed drier. Give the merits and demerits of the drier.

3. Explain the theory of fractional distillation. Give and explain the design and working of a large scale fractional distillation setup and also give its applications.

4. What are the factors affecting extraction of crude drugs ? Explain the working of a large scale solid-liquid continuous extraction equipment with their merits and demerits.

5. Give precise answers for any THREE of the following :

(a) Merits and demerits of ferrous metals for pharmaceutical plant construction.

(b) Measures of industrial safety from chemical hazards.

(c) Derive an expression for film coefficients.

(d) Design of calendria.

(e) Working principle of a vacuum crystallizer.

(f) Operation of a filter press.

6. (a) How is Refrigeration system designed ? Give its application in pharmacy.

(b) Explain the process of Elutriation for size separation.

7. Describe how can flow properties of powders be increased to achieve better compression. Explain the physics of tablet compression.

8. (a) Explain the working details of fluid energy mill for producing micronised powders.

(b) Give the operational details of equipments used for solid-solid mixing.

9. (a) What are the types of glasses for containers of parenteral preparations ? How is the quality of the glass assessed as per pharmacopoeia ?

(b) How is adsorption quantified ? Give the applications of adsorption in pharmacy.

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APRIL - 1993

[RS 550]

THIRD B.Pharm. DEGREE EXAMINATION.

(Old Regulations)

Paper V — PHARMACEUTICAL TECHNOLOGY

Time : Three hours Maximum : 75 marks

Answer any FIVE questions.

1. (a) Explain "Freeze Drying"

(b) Describe the design and operation of a fluidised bed dryer. (5 + 10)

2. (a) What are the difficulties encountered in the extraction of a crude drug.

(b) Describe the equipment used for liquid/liquid extraction.

(c) Explain the advantages of steam as a source of heat. (4 + 7 + 4)

3. (a) What are the factors determining the choice of materials for Pharmaceutical plant construction.

(b) Discuss the use of non-metals as materials for plant construction. (7 + 8)

4. (a) Give the flow diagrams of different types of fluids.

(b) Discuss thixotropy and its applications in Pharmacy.

(c) Explain the principle and working of a cone-plate viscometer. (4 + 6 + 5)

5. (a) Define the terms : (i) Humidity, (ii) Dew point, (iii) Humidity chart.

(b) Explain with the help of a diagram the design of an air conditioning system. (5 + 10)

6. Explain any THREE of the following : (3 x 5 = 15)

(a) The working of a ball mill.

(b) The process of elutriation.

(c) Forced circulation evaporators.

(d) Rotary Filters.

7. Write short notes on any THREE : (3 x 5 = 15)

(a) Fractional distillation.

(b) Reynold's number.

(c) Glass containers for parenterals and their assessment.

(d) Chemical hazards in an industry.

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APRIL - 1993

[RS 556]

THIRD B.Pharm. DEGREE EXAMINATION.

(New Regulations)

Paper V — PHARMACEUTICAL TECHNOLOGY

Time : Three hours. Maximum : 75 marks.

Answer Sections A and B in separate answer books.

SECTION A — (6 × 5 = 30 marks)

Answer any SIX questions.

All questions carry equal marks.

1. (*a*) Explain the term "Thixotropy".

(*b*) Discuss the principle and working of the Cone-plate Viscometer.

2. (*a*) Explain the term "Azeotropic mixtures".

(*b*) Discuss the principle of steam distillation.

3. (*a*) Explain Langmuir's adsorption isotherm.

(*b*) Write briefly about the applications of adsorption in Pharmacy.

4. (*a*) Explain "Size Separation".

(*b*) Write a brief note on sedimentation.

5. (*a*) Define Rittinger's law.

(*b*) Explain the principle and working of a hammer mill.

6. (*a*) What are the principles of centrifugation ?

(*b*) Explain the perforated basket centrifuge.

7. (*a*) Classify the crystallizers.

(*b*) Discuss the Swenson-Walker crystallizer.

8. Suggest with reasons suitable materials of construction of a plant for the manufacture of acid.

9. (*a*) Classify the different types of cooling towers.

(*b*) Give the properties of an ideal refrigerant and a list of refrigerants used.

SECTION B — (3 × 15 = 45 marks)

Answer any THREE questions.

All questions carry equal marks.

10. (*a*) Define the terms "Drying" and "Freeze Drying".

(*b*) Explain the term conduction drying. Discuss the principle, construction and working of any one conduction drier.

11. (*a*) Define extraction.

(*b*) Discuss the procedures adopted for large scale extraction.

(*c*) Write in detail about continuous extraction.

12. (*a*) What are the factors affecting filtration ?

(*b*) What are the mechanisms of filtration ?

(*c*) Discuss the working of leaf-filters.

13. (*a*) Discuss the various types of mixtures.

(*b*) Classify and discuss the mixers used in powder mixing.

14. (*a*) Define evaporation.

(*b*) Classify the evaporators.

(*c*) Discuss the film evaporators.

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[PR 167]

THIRD B.Pharm. DEGREE EXAMINATION.

(Old Regulations)

Paper V — PHARMACEUTICAL TECHNOLOGY

Time : Three hours Maximum : 75 marks

Answer any FIVE questions.

All questions carry equal marks.

1. (a) Explain the term 'corrosion'.

(b) Discuss the physical factors influencing the selection of materials of Pharmaceutical plant construction.

2. Compare the characteristics of a ball mill, a hammer mill and a fluid energy mill.

3. (a) Discuss the theory of liquid mixing.

(b) Describe the construction, operation, applications and advantages of a 'turbine-impeller'.

4. (a) What is the principle governing hydraulic separations?

(b) Explain the multistage elutriation system.

(c) What are cyclone separators?

5. Explain the design, operation and applications of the 'Podbielniak Extractor'.

6. (a) Define 'Dew-Point', 'Saturated-Air', 'Humid-Heat' and 'Relative Humidity'.

(b) Write notes on the use (practical aspect) of humidity chart.

7. Write short notes on :

(a) O.H.T.C.

(b) Solubility curves.

(c) Rate of drying curves.

(d) Steam-Jet Ejector.

NOVEMBER - 1993

[PR 173]

THIRD B.Pharm. DEGREE EXAMINATION.

(New Regulations)

Paper V — PHARMACEUTICAL TECHNOLOGY

Time : Three hours Maximum : 75 marks

Answer Sections A and B in separate answer books.

SECTION A — (6 × 5 = 30 marks)

Answer any SIX questions.

All questions carry equal marks.

1. What are the special hazards of chemicals and chemical plant operation?

2. What are the properties of a tower packing for gas absorption purpose?

3. What are the requirements of liquid mixing? What are the various velocity components in a liquid that is subjected to mixing?

4. With the help of a diagram explain the working of a concentric cylinder viscometer.

5. How do you determine the flow properties of powders and granules [discuss atleast 2 methods]?

6. Draw a labelled diagram of the steam-jet-ejector and explain its working.

7. What is meant by caking of crystals? How is it prevented?

8. Draw a flow chart to explain the operation of an extraction battery.

9. Explain the constant-drying-rate period and the falling-rate period of the drying-rate curves.

SECTION B — (3 × 15 = 45 marks)

Answer any THREE questions.

All questions carry equal marks.

10. (a) What are azeotropes?

(b) What are packed columns? How do they differ from the plate-columns?

(c) How is rectified spirit made (by distillation)?

11. (a) Discuss the theory of centrifugation.

(b) Outline the construction, working and applications of the solid-bowl (vertical) centrifuge.

12. (a) Discuss the qualities and requirements of an ideal package.

(b) What are the hazards encountered by a package?

13. (a) What is the significance of Reynold's number in unit-operations?

(b) What are the factors affecting heat transfer in heating-equipment?

(c) What is the basis of unit operations?

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[PR 173]

14. (a) Describe the various sieving methods.

(b) Discuss the 'Physics of tablet compression'.

(c) Write notes on 'Significance of Particle Size in Pharmaceutical Technology'.

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[ND 584]

THIRD B.Pharm. DEGREE EXAMINATION

(Old Regulations)

Paper V — PHARMACEUTICAL TECHNOLOGY

Time : Three hours. Maximum : 75 marks.

Answer any FIVE questions.

All questions carry equal marks.

1. (a) Classify crystallizers.

(b) Giving a neat diagram describe the construction and working of krystal crystallizer. Compare it with simple vacuum crystallizer. (4+11=15)

2. (a) Define mixing.

(b) Discuss the equipment and machineries used for mixing of solids. (3+12=15)

3. (a) What is meant by surface coefficient ?

(b) Derive an equation for over-all heat transfer coefficient during forced convection.

(c) Differentiate between parallel and counter current flow heat exchangers. (3+7+5=15)

4. Write a detailed note on steels, their composition, properties and pharmaceutical applications. (5+5+5=15)

[ND 584]

5. (a) Deduce Newton's equation for flow properties.

(b) Explain pseudoplastic and dilatant flows with equations.

(c) Describe the determination of viscosity using falling-sphere viscometer. (4+6+5=15)

6. (a) What are the factors affecting the rate of evaporation ?

(b) Describe the operationals details of long tube and short tube evaporators and discuss their merits and demerits. (5+10=15)

7. Write short notes on any *three* of the following :

(a) Stefen-Boltzmann Law

(b) Cyclone separator

(c) Azeotropic distillation

(d) Soxhlet extractor. (3×5=15)

NOVEMBER - 1994

[N] 590]

THIRD B. Pharm. DEGREE EXAMINATION.

(New Regulations)

Paper V — PHARMACEUTICAL TECHNOLOGY

Time : Three hours. Maximum : 75 marks.

Answer Section A and B in separate answer books.

SECTION A — (6×5=30 marks)

Answer any SIX questions.

All questions carry equal marks.

1. What is Fourier's Law ?

2. Explain rate of drying curves.

3. Describe steam distillation.

4. Explain the advantages of multiple effect evaporator.

5. Explain the construction of Swenson-Walker crystallizer.

6. Describe air separator.

7. Explain the mechanism of fluid energy mill.

8. Explain the use of plastics in plant construction.

9. Describe the working of fluidized bed dryer.

[ND 590]

SECTION B — (3×15=45 marks)

Answer any THREE questions.

All questions carry equal marks.

10. (a) What is centrifugal separation ? Mention its advantages.

(b) Discuss the working of Sharples super centrifuge.

11. (a) What are heaters and heat interchangers ?

(b) Explain the construction and working of multiple pass heat exchanger.

(c) Write a note on finned tubes.

12. (a) Classify dryers based on the nature of the material to be dried.

(b) Explain the construction and working of any two dryers for thermolabile materials.

13. (a) Which are the desired properties of package materials ?

(b) Describe the various kinds of glass containers used in pharmaceutical industry.

14. (a) Show the relationship between distillation evaporation and drying.

(b) Classify evaporators.

(c) Discuss the types of film evaporators.

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[SB 589]

Third B. Pharm Degree Examination

(Old Regulations)

Paper V – PHARMACEUTICAL TECHNOLOGY

Time : Three hours Maximum : 75 marks

Answer any FIVE questions

All questions carry equal marks

Give diagrams wherever necessary

1. a) Describe the principle of creating a cold storage room and list the applications of cold storage.

   b) Describe the principle of making drugs in aerosol packaging.

2. a) Describe the determination of viscocities of liquid using ostwald's viscometer.

   b) Describe the flow behaviour of different Non-Neutonian systems and its relevance in Pharmaceutical Technology.

3. Write short notes

   a) Air separation technique

   b) Liquid - Liquid Mixer

   c) Compression machine for tablets.

4. Describe about steam as heating medium. Describe the production of steam in a boiler.

5. a) Discuss about Ferrous metals as materials of plant construction

   b) Elaborate on safety measures against mechanical and electrical hazards.

6. a) Discuss the production of rectified spirit by Fractional Distillation.

   b) Discuss the Swenson-Walker crystalliser and its advantages and disadvantages.

7. Short notes on any THREE :

   a) Solid -fluid mass transfer

   b) Rubber closures for parenteral containers

   c) Application of adsorption

   d) Extraction by soxhet apparatus

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APRIL - 1995

[SB 595]

Third B. Pharm. Degree Examination

(New Regulations)

Paper V—PHARMACEUTICAL TECHNOLOGY

Time : Three hours Maximum : 75 marks.

Answer Sections A and B in separate answer books

Give diagrams wherever necessary

SECTION—A (6X5=30)

Answer any SIX questions

All questions carry equal marks

1. Discuss the operational details of airblast mixer
2. What is an ideal lubricant? Discuss the role of lubricant during compression. Give examples.
3. Explain the principle, operation and uses of steam distillation.
4. Discuss the operation, use and limitation of basket type centrifuge.
5. Discuss the factors governing extraction. How does a soxhet apparatus function?
6. Discuss the theory of drying. How deos a spray drier function.
7. Discuss about Lyophilisation and its application.
8. Discuss about thixotropy and its importance in pharmacy.
9. Discuss about the quality of rubber closures for parentral containers.

SECTION - B (3X15=45)

Answer any THREE questions

All questions carry equal marks

10. a) Discuss the principle of size reduction and various laws govering size reduction.

    b) Discuss in detail the operation of fluid energy mill and its advantages and disadvantages.

11. a) Discuss the expression machine for separation of oil from castor seeds

    b) Discuss about various air separation techniques for size seperation of powder

12. a) Discuss the theory behind fractional distillation.

    b) Discuss about production of rectified sprit and various rectifying columns.

13. a) Discuss about adsorption isotherm for adsorption at solid interfaces.

    b) Discuss the operation of cup and bob viscometers.

14 a) Discuss about various packaging materials in pharmacy.

    b) Discuss the designing of cold storage rooms.

NOVEMBER - 1995

MB 729

THIRD B.PHARM DEGREE EXAMINATION

(Old Regulations)

PAPER V - PHARMACEUTICAL TECHNOLOGY

Time: Thre hours Maximum:75marks

Answer any FIVE questions

All questions carry equal marks

Give diagrams wherever necessary.

1. a) List down different type of crystallizers based on different techniques.

b) Discuss about the operational details of a crystallizer to get pure large crystals.

2.a) Discuss about non ferrous metels for pharmaceutical plant construction.

b) Discuss about the safety measures from chemical and electrical hazards.

3.a) Discuss about multiple effect evaporators.

b) Discuss about Molecular distillation

a) Discuss about heat transfer by conduction. Discuss the various factors to be kept in view while designing heat transfer equipments.

MB 729

5. a) Define and explain thixotropy. What is thesignificance of thixotropy in pharmacy.

b) Discuss the operational details about cone and plate viscometer.

6.a) Discuss about formulations based on aerosol packing and their quality control.

b) Discuss the operational details of an air conditioner.

7.Short notes on any THREE

a) Influence of Mass transfer on unit operation

b) Type of glasses for parentral container

c) Basket type centrifuge

d) Tripple roller Mill

NOVEMBER - 1995

[MB 726]

Third B. Pharm Degree Examination

(New Regulations)

Paper V - PHARMACEUTICAL TECHNOLOGY

Time : Three hours Max : 75 marks

Answer Section A and B in separate answer books

Give diagrams wherever necessary

SECTION—A (6×5 = 30)

Answer any SIX questions

All questions carry equal marks

1. Discuss the technique of producing micronised powder.
2. Discuss the hydraulic separation technique
3. How are the powder size separated? List down pharmacopoeial grading of powders
4. Discuss the molecular distillation and its application.
5. What are the factors governing extraction? Discuss about liquid-liquid extractor.
6. Discuss the application of adsorption.
7. Discuss the technique of making aerosol packed formulations
8. Discuss the safety measure against Electrical and chemical hazards.
9. Discuss the principle of refrigeration and its application

SECTION—B (3×15=45)

Answer any Three questions

10. a) Define mixing and its application.
    b) Discuss in detail, solid - solid mixers, their advantage and disadvantages. (5+10)
11. a) Define compression and discuss the importance of lubrication during compression and the pressure distribution within tablets.
    b) Discuss the operational details of Rotary Tablet Machine (7+8)
12. a) Discuss the theory behind centrifugation
    b) Discuss the operation of batch and continuous type centrifuges (7+8)
13. a) Discuss the multiple effect of evaporators
    b) Discuss the operational detail of Rotary drum drier (7+8)
14. a) Discuss glass and plastic as pharmaceutical containers
    b) Derive an expression for film coefficient. Elaborate its importance in heat transfer. (7+8)

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[AK 729] Subject Code : 4195

Third B. Pharm Degree Examination

(Common to Old/New Regulations)

Paper V - PHARMACEUTICAL TECHNOLOGY

Time : Three hours Max : 75 marks.

Answer Section A and B in separate answer books.

Give diagrams wherever necessary

SECTION - A (6X5 = 30)

Answer any SIX questions.

All questions carry equal marks.

1 Explain "over all coefficient of heat transfer". Discuss the factors affecting heat transfer.

2. Give the operational details of cone and plate viscometer.

3. Discuss the various packaging material & their advantages and disadvantages.

4. Write the operational details of Tripple roller mill and its application.

5. Discuss the operation of filter press with arrangement for washing of cake

6. Explain the critical humidity in relation to crystals.

7 Explain "steam distillation" & its application in phermacy.

8. Explain the operational details of freeze drier & its application.

9. Explain the mass transfer with suitable examples.

SECTION—B (3X15 = 45)

Answer any THREE questions.

10. a) Discuss the theory behind size reduction. Compare the working of Ball mill and fluid energy mill.

b) Discuss molecular distillation and its application in pharmacy. (9+6)

11. a) Define Rheology. Discuss the importance of Rheology in pharmacy as well as its effect on operation of various machines.

b) Discuss the problems encountered in using glass containers for liquid & parentral dosage forms ? How are they overcome. (7+8)

12. a) Discuss the extraction battery & its efficiency in solid-liquid extraction.

b) Discuss about the operation of Swenson - Walkar crystallizer and its application. (7+8)

13. a) How will you make the powders machinable for compression in tablet dosage forms Explain the importance of lubricants in compression technology.

b) Discuss the various fractionating columns with emphasis on High equivalent to theoretical plate (HETP) (7+8)

14. a) Discuss the designing of a cold room. Explain the importance of cold storage in pharmacy.

b) Give the theory behind centrifugation. Discuss the operational details of a continuous centrifuge. (8+7)

APRIL - 1996

[AK 748] Subject Code : 4201

Third B. Pharm Degree Examination

(Revised Regulations)

Paper V - PHARMACEUTICAL TECHNOLOGY

Time : Three hours Max. : 75 marks.

Answer Sections A and B in separate answer books.

Give diagrams wherever necessary

SECTION - A (6X5=30)

Answer any SIX questions.

All questions carry equal marks.

1. Discuss the operation of venturimeter and Rotameter & their application.
2. Give and explain mass transfer equations. Give examples of mass transfer process.
3. Explain various types of values & their application.
4. Give the principle of refrigeration and its application.
5. Give the laws governing size reduction. Explain the working of ball mill
6. Discuss about the liquid-liquid mixers.
7. Explain about "multiple effect" evaporators.
8. Discuss the pharmacopeial requirements for plastics used in making parentral containers.
9. Discuss the equipments for making sterile air, by filtration.

SECTION – B (3x15=45)

Answer any THREE questions.

10. a) Explain different types of corrosion and various methods to prevent corrosion.

    b) Explain the operational details of edge filter and its applications and advantages (7+8)

11. a) Discuss the operational details of large scale, automatic hard gelatin capsule filling equipments.

    b) Classify pumps. Give their applications. Discuss the operation of reciprocating pumps. (7+8)

12. a) Discuss the design of a typical fermentor & the various accessories for automation and the importance of such automation.

    b) Explain the working of a sophisticated centrifuge for continuous type of working. (7+8)

13. a) Explain the operation of Rotary drum drier & its advantages.

    b) Explain "Fractional distillation" and the equipments for such distillation. How is rectified spirit prepared. (7+8)

14. a) Explain, Humidity chart Describe the design of a dehumidifier in detail.

    b) Discuss the operation of a filter press with washing arrangement for crystals. (7+8)

OCTOBER - 1997

[MS 717] Sub. Code : 4195

THIRD B.Pharm. DEGREE EXAMINATION.

(New Regulations)

Paper V — PHARMACEUTICAL TECHNOLOGY

Time : Three hours Maximum : 75 marks

Answer Sections A and B in separate answer books.

Give diagrams wherever necessary.

SECTION A — (6 × 5 = 30 marks)

Answer any SIX questions.

All questions carry equal marks.

1. Explain the construction and working of a viscometer used for non-newtonian systems.

2. Write a note on Refrigeration.

3. Discuss the various packaging materials used for parenteral preparations. List their advantages and disadvantages.

4. Write a note on thixotropy.

5. Discuss about steam distillation. What are its applications?

6. Discuss the construction and working of a continuous centrifuge.

7. Explain the working of the falling film evaporator.

8. Explain the construction and working of a ball mill.

9. What is the importance of extraction in pharmacy? Explain the construction and working of a Soxhlet extractor.

SECTION B — (3 × 15 = 45 marks)

Answer any THREE questions.

All questions carry equal marks.

10. (a) Write a note on air separation and hydraulic separation.

(b) Explain the construction and working of the Swenson–Walker crystallizer. (8 + 7 = 15)

11. (a) Write a note on heat and mass transfer.

(b) Define theology. Classify non–newtonian systems. Give examples and rheograms for each type. (8 + 7 = 15)

12. (a) Discuss the adsorption isotherms and the importance of adsorption in pharmacy.

(b) Discuss the engineering principles governing the design of equipments for size reduction. (8 + 7 = 15)

13. (a) Discuss the safety methods of pharmaceutical laboratories.

(b) Write a note on centrifugation and its importance. (8 + 7 = 15)

14. (a) Discuss in detail the materials used for construction.

(b) Explain the process of compression in the manufacture of tablets. (8 + 7 = 15)

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OCTOBER - 1997

[MS 723] Sub. Code : 4205

THIRD B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper V — PHARMACEUTICAL TECHNOLOGY

Time : Three hours Maximum : 75 marks

Answer Sections A and B in separate answer books.

Give diagrams wherever necessary.

SECTION A — (6 × 5 = 30 marks)

Answer any SIX questions.

All questions carry equal marks.

1. Give the operational details of soxhlet extraction and its merits and demerits.

2. Elucidate the operational details of short tube evaporator with special emphasis to calendria.

3. Write about adsorption and its application in pharmacy.

4. Discuss the factors governing mass transfer.

5. Mention the various chemical hazards in a pharmaceutical/chemical industry. Define the role of the pollution board.

6. Explain the operational details of a filter candle and its application.

7. Explain about membrane filters, its operational details and applications.

8. Explain the theory behind crystallisation and operational details of a crystalliser.

9. Describe the operational details of a Rotametre and its applications.

SECTION B — (3 × 15 = 45 marks)

Answer any THREE questions.

10. (a) Describe in detail fractional distillation, its operation and applications.

(b) Discuss about molecular distillation and its applications. (8 + 7 = 15)

11. (a) Explain drying curves. What are the precautions to be observed for drying a material? Give the operational details of a freeze drier.

(b) How do you determine the Rheological behaviour of an ointment in an industry? (8 + 7 = 15)

12. (a) Explain the operation of fluid energy mill and its applications.

(b) Describe two important size separating techniques. (8 + 7 = 15)

13. (a) Elucidate the engineering principle involved in a tablet machine on large scale.

(b) Explain the operation of a continuous type centrifugal machine in separation techniques. (8 + 7 = 15)

14. (a) Discuss how a cold room is designed for storage of drugs and also the importance of such storage.

(b) Detail the recent trends in packaging technology using plastics. How is a pharmacopoeial plastic assessed for its quality? (8 + 7 = 15)

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[SV 717] Sub. Code : 4195

THIRD B.Pharm. DEGREE EXAMINATION.

(New Regulations)

Paper V — PHARMACEUTICAL TECHNOLOGY

Time : Three houre Maximum : 75 marks

Answer Section A and Section B in separate answer books.

Give diagrams wherever necessary.

SECTION A — (6 × 5 = 30 marks)

Answer any SIX questions.

All questions carry equal marks.

1. Discuss the factors governing mass transfer.

2. Discuss about the various packing materials used in Pharmaceutical industry.

3. Write a note on centrifugation and its importance.

4. Describe the construction and working of ball mill.

5. Explain about membrane filters and its application in Fharmaceutical industry.

6. Explain the operation of Fluid energy mill.

7. Discuss the procedure adopted to determine the rheological behaviour of an ointment.

8. Discuss about molecular distillation and its application.

9. Deecribe any two techniques employed in size separation.

SECTION B — (3 × 15 = 45 marks)

Answer any THREE questions.

All questions carry equal marks.

10. (a) Explain the terms falling rate and constant rate period of drying.

(b) Explain the working of a rotary drier.

11. (a) What are the requisitee of a good solvent for liquid extraction?

(b) Explain the working of steam heated evaporators.

12. (a) Explain the working of a cyclone separator with a diagram.

(b) Explain adsorption and its application in pharmacy.

13. (a) Explain the theories of crystallisation.

(b) What are the ideal conditions for crystal growth?

14. (a) Explain the mixing index of a mixer.

(b) Explain the effects of baffels in flow pattern in impeller mixers.

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[SG 717] Sub. Code : 4205

THIRD B.Pharm. DEGREE EXAMINATION.

Paper V — PHARMACEUTICAL TECHNOLOGY

(Common to Third Year – Revised Regulations and Re–Revised Regulations)

Time : Three hours Maximum : 75 marks

Answer Sections A and B in separate answer books.

Give diagrams wherever necessary.

SECTION A — (6 × 5 = 30 marks)

Answer any SIX questions.

All questions carry equal marks.

1. Describe the construction and working of Rotameter.

2. Explain the operation of automatic filling machine for hard gelatin capsules.

3. Explain Bernoulli's theorem and its significance.

4. Give the principle of operation of Drum drier.

5. Explain the operational details of horizontal film evaporator.

6. Explain the operational details of Edge or meta filter.

7. Give the operational details of centrifugal pump.

8. Discuss the operational details of Swanson–Walker crystallizer.

9. Explain the hydraulic separation technique.

SECTION B — (3 × 15 = 45 marks)

Answer any THREE questions.

All questions carry equal marks.

10. (a) Explain the principle of fractional distillation. How rectified spirit is obtained from commercial alcohol?

(b) Explain the principle of refrigeration. How a cold storage room is designed?

11. (a) Discuss about different types of glasses. Give the pharmacopoeial details of glass containers for parentrals.

(b) Classify various materials used in pharmaceutical plant construction. Discuss its merits and demerits of iron for that purpose.

12. (a) Discuss the theory behind size reduction.

(b) Give the operational details of ball mill.

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13. (a) Discuss the details of cyclone separator and its applications.

(b) Explain the large scale extraction of solids using solvents.

14. (a) Suggest two suitable mixers for powder mixing and their operational details.

(b) Discuss about various parameters are to be set to operate a tablet machine to get tablets of required specifications.

OCTOBER - 1999

[KA 717] Sub. Code : 4206

THIRD B.Pharm. DEGREE EXAMINATION.

(Common to R.R. & Re–Revised Regulations)

Paper V — PHARMACEUTICAL TECHNOLOGY

Time : Three hours Maximum : 75 marks

Answer Sections A and B in separate answer books.

Give diagrams wherever necessary.

SECTION A — (6 × 5 = 30 marks)

Answer any SIX questions.

All questions carry equal marks.

1. Explain how fluid flow is measured.

2. Explain the manufacture and filling of soft gelatin capsules.

3. Explain the working of calendria as heat exchanger.

4. Explain the principle and application of steam distillation.

5. Explain the working principle of humidifier.

6. Explain the corrosion problem and how it is prevented.

7. What are the qualities of rubber as closures for vials? How are the qualities assessed?

8. Discuss the operational details of Tripple rolles mill.

9. Discuss the energy requirements for size reduction. Detail on choice of size reduction equipments.

SECTION B — (3 × 15 = 45 marks)

Answer any THREE questions.

All questions carry equal marks.

10. (a) Give the theory behind drying.

(b) Explain the engineering principle involved in freeze dries and give its application.

11. (a) Explain how filter press is operated.

(b) Explain the merits and demerits of iron as material of construction.

12. (a) Explain and derive an expression for 'centrifugal effect'. Explain how an efficient centrifuge designed.

(b) Explain the operation of any one of the continuous type centrifuge.

13. (a) Discuss the details of Extraction battery.

(b) Discuss the operational details of a Rotary Tablet machine.

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14. (a) Discuss the theory behind crystallizers. Classify crystallizer based on different principles.

(b) Suggest a suitable crystallizer for getting larger crystals. How is it designed and operated?

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[KB 717] **Sub. Code : 4205**

THIRD B.Pharm. DEGREE EXAMINATION.

Paper V — PHARMACEUTICAL TECHNOLOGY

(Common to Third Year — Revised Regulations and Re–Revised Regulations)

Time : Three hours Maximum : 75 marks

Answer Sections A and B in separate answer books.

Give diagrams wherever necessary.

SECTION A — (6 × 5 = 30 marks)

Answer any SIX questions.

All questions carry equal marks.

1. Explain how hard gelatine capsules are filled with medicaments in an automatic machine.

2. Explain the operational details of a spray drier and its application.

3. Give details of containers and closures to dispense liquids for oral preparations.

4. Discuss about steam distillation and its applications.

5. Discuss the operational details of a vacuum crystallizer.

6. Classify valves and explain the same with examples.

7. Explain the operational details of a reciprocating pump.

8. Explain chemical hazards. How are such hazards prevented in a pharmaceutical industry?

9. Explain about corrosion. How are corrosion prevented?

SECTION B — (3 × 15 = 45 marks)

10. (a) Discuss the theory behind centrifugation. Classify centrifuges with examples.

(b) Discuss the operational details of continuous type centrifuges.

11. (a) How are powders processed ready for compression? How are the flow properties of powders assessed?

(b) Explain the operational details of a Rotary tablet machine.

12. (a) Discuss the theory behind evaporation? How are efficient heat transfer achieved in evaporators?

(b) Explain the design and operational details of a dehumidifier.

13. (a) What are fermentors? How are they designed to automate various parameters to carry out fermentation?

(b) Explain how active principles are extracted from fermented broth by Liquid–liquid extractor.

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14. (a) Explain Jarcy's law governing filtration. How is filtration efficiency increased?

(b) Explain the operational details of (i) Meta filter (ii) HEPA filter.

OCTOBER - 2000

[KC 717] **Sub. Code : 4205**

THIRD B.Pharm. DEGREE EXAMINATION.

Paper V — PHARMACEUTICAL TECHNOLOGY

(Common to Third Year – Revised Regulations and Re–Revised Regulations)

Time : Three hours Maximum : 75 marks

Answer Sections A and B in separate answer books.

Give diagrams wherever necessary.

SECTION A — (6 × 5 = 30 marks)

Answer any SIX questions.

All questions carry equal marks.

1. Describe the fire hazards and their prevention in industries.

2. Explain the basic qualities for a good package.

3. Describe a suitable method of separation of light kaolin from coarse particles.

4. Explain the preparation of liquid Ammonia using packed towers.

5. Describe wiped film evaporator.

6. Explain the method of filteration using filter press.

7. Explain the method of mixing semi solid using colloid mill.

8. Describe the working principles of conical disc centrifuge.

9. Explain the working principles vapour compression type Refrigerator.

SECTION B — (3 × 15 = 45 marks)

Answer any THREE questions.

All questions carry equal marks.

10. (a) Describe the different types of rectifying column including their advantages and disadvantages.

(b) Explain the process of Molecular distillation. (8 + 7)

11. (a) Define conduction, convection and Radiation and explain how these can be evaluated.

(b) Describe the mixing mechanism of solid particles. (8 + 7)

12. (a) Describe the properties of solvents used for extracting drugs.

(b) Explain the method of multiple stage extraction. (8 + 7)

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13. (a) Describe the rate of drying curve for a crude drug of fibrous nature.

(b) Explain the working principles of vacuum drier. (8 + 7)

14. (a) Describe a batch type of crystallizer.

(b) Define adsorption. Describe the factors affecting adsorption from solution. (8 + 7)
