BOARD OF DIPLOMA IN PHARMACY EXAMINATIONS

D.Pharm — FIRST YEAR | ER-2020 Regulation

MODEL QUESTION PAPER — SET 1

PHARMACEUTICS (ER20-11T)

Time: 3 Hours **Reg. No. : _____** **Max. Marks: 80**

General Instructions: *All sections are compulsory. Figures to the right indicate full marks. Draw neat, labelled diagrams / flowcharts wherever necessary. Answers to Section A (Q.1–20) must be written together as a single unit.*

SECTION – A | Multiple Choice Questions — 20 × 1 = 20 Marks

*Answer **ALL** questions. Each question carries 1 mark.*

Q1. The Indian Pharmacopoeia is published by the
(a) IPC, Ghaziabad (b) USFDA
(c) WHO (d) PCI, New Delhi

Q2. The part of a prescription containing the names and quantities of drugs is called
(a) Superscription (b) Inscription
(c) Subscription (d) Signatura

Q3. The Latin abbreviation 'b.d.' means
(a) Once a day (b) Twice a day
(c) Thrice a day (d) At bedtime

Q4. Young's formula is used to calculate the dose for
(a) Adults (b) Infants by weight
(c) Children by age (d) Elderly

Q5. Theory of filtration is based on
(a) Stoke's law (b) Poiseuille's law
(c) Fick's law (d) Raoult's law

Q6. Ball mill works on the principle of
(a) Attrition (b) Impact and attrition
(c) Compression (d) Cutting

Q7. A cyclone separator is used for
(a) Size reduction (b) Mixing
(c) Size separation (d) Drying

Q8. Which is a monophasic liquid dosage form?
(a) Emulsion (b) Suspension
(c) Syrup (d) Magma

Q9. Geometric dilution is a technique used in
(a) Filtration (b) Mixing of potent powders
(c) Distillation (d) Sterilization

Q10. Simple syrup IP contains sucrose in the concentration of
(a) 45% w/v (b) 66.7% w/v
(c) 85% w/v (d) 20% w/v

Q11. The unit operation used to separate volatile from non-volatile substances is
(a) Extraction (b) Distillation
(c) Filtration (d) Trituration

Q12. Lozenges are meant to be
(a) Swallowed whole (b) Dissolved slowly in the mouth
(c) Injected (d) Inhaled

Q13. Which class of glass is used for parenteral preparations that are not buffered?
(a) Type I (b) Type II
(c) Type III (d) Type IV

Q14. HLB scale is used to express the
(a) Solubility of a drug (b) Emulsifying property of a surfactant
(c) Melting point (d) Viscosity

Q15. Smallpox vaccine should ideally be stored
(a) Below 0 °C (b) At 10 °C
(c) At room temperature (d) At 30 °C

Q16. The most widely used suppository base is
(a) Cocoa butter (b) Glycero-gelatin
(c) PEG (d) Bentonite

Q17. Elixirs are
(a) Sweetened aqueous solutions (b) Sweetened hydro-alcoholic solutions
(c) Oily suspensions (d) Emulsions

Q18. The process of coating tablets with sugar is called
(a) Film coating (b) Enteric coating
(c) Sugar coating (d) Press coating

Q19. Levigation is used in the preparation of
(a) Syrups (b) Ointments/pastes
(c) Emulsions (d) Tablets

Q20. Which excipient helps a tablet break up after ingestion?
(a) Binder (b) Lubricant
(c) Disintegrant (d) Glidant

SECTION – B | Long Answer / Essay Questions — 3 × 10 = 30 Marks

*Answer any **THREE** of the following. Each question carries 10 marks.*

Q21. Define prescription. Enumerate its parts with a suitable example and describe the responsibilities of a pharmacist in handling prescriptions. [10]

Q22. Classify size reduction equipment. Explain the construction, working, principle, advantages and disadvantages of a ball mill with a labelled diagram. [10]

Q23. Define tablets. Classify them and describe in detail the various ingredients (excipients) used in tablet formulation with examples. [10]

Q24. What are emulsions? Classify them, explain the tests for identification of emulsion type, and describe two methods of preparation. [10]

Q25. Write in detail about immunological products. Explain sera and vaccines with their storage conditions and uses. [10]

SECTION – C | Short Notes — 5 × 6 = 30 Marks

*Answer any **FIVE** of the following. Each question carries 6 marks.*

Q26. Salient features of the Indian Pharmacopoeia [6]

Q27. Posology and factors affecting dose [6]

Q28. Theory and mechanism of filtration [6]

Q29. Advantages and disadvantages of glass as packaging material [6]

Q30. Suppositories and their bases [6]

Q31. Differences between syrups and elixirs [6]

Q32. Blister and strip packaging [6]

— END OF QUESTION PAPER —

BOARD OF DIPLOMA IN PHARMACY EXAMINATIONS

D.Pharm — FIRST YEAR | ER-2020 Regulation

MODEL QUESTION PAPER — SET 2

PHARMACEUTICS (ER20-11T)

Time: 3 Hours **Reg. No. : _____** **Max. Marks: 80**

General Instructions: *All sections are compulsory. Figures to the right indicate full marks. Draw neat, labelled diagrams / flowcharts wherever necessary. Answers to Section A (Q.1–20) must be written together as a single unit.*

SECTION – A | Multiple Choice Questions — 20 × 1 = 20 Marks

*Answer **ALL** questions. Each question carries 1 mark.*

Q1. IP, BP and USP respectively stand for pharmacopoeias of
(a) India, Britain, USA (b) Italy, Belgium, USA
(c) India, Brazil, UK (d) Ireland, Britain, USA

Q2. Clark's formula calculates the dose based on the
(a) Age of the child (b) Body weight
(c) Body surface area (d) Height

Q3. The abbreviation 'p.c.' on a prescription means
(a) Before food (b) After food
(c) At bedtime (d) When required

Q4. Which of the following is a biphasic liquid dosage form?
(a) Syrup (b) Linctus
(c) Suspension (d) Elixir

Q5. Hammer mill operates mainly on the principle of
(a) Attrition (b) Impact
(c) Compression (d) Cutting

Q6. Fluidised bed dryer is used for
(a) Size reduction (b) Mixing
(c) Drying (d) Filtration

Q7. A flocculating agent is used to prepare a
(a) Stable emulsion (b) Flocculated suspension
(c) Syrup (d) Tablet

Q8. Which is NOT a semi-solid dosage form?
(a) Ointment (b) Paste
(c) Cream (d) Elixir

Q9. The concentration of alcohol in aromatic elixirs is usually
(a) High (b) Very low or absent
(c) Fixed at 90% (d) Fixed at 45%

Q10. Turbine mixer is a type of
(a) Solid mixer (b) Liquid mixer
(c) Dryer (d) Mill

Q11. Which sieve number has the largest aperture?
(a) 10 (b) 44
(c) 85 (d) 120

Q12. Cocoa butter is an example of a suppository base that is
(a) Water soluble (b) Fatty/oleaginous
(c) Emulsifying (d) Hydrogel

Q13. Insufflations are powders meant to be
(a) Swallowed (b) Blown into body cavities
(c) Applied to skin (d) Injected

Q14. The ideal size reduction of a drug increases its
(a) Density only (b) Surface area and dissolution
(c) Melting point (d) Colour

Q15. Which agent imparts sweetness without adding calories?
(a) Sucrose (b) Saccharin
(c) Glucose (d) Honey

Q16. Percolation is a method of
(a) Filtration (b) Extraction
(c) Drying (d) Mixing

Q17. Lyophilisation means
(a) Spray drying (b) Freeze drying
(c) Vacuum distillation (d) Tray drying

Q18. Emulsions of the o/w type can be diluted with
(a) Oil (b) Water
(c) Alcohol only (d) Glycerin only

Q19. Which is an official method of size separation?
(a) Elutriation (b) Trituration
(c) Levigation (d) Maceration

Q20. Capsules are made mainly of
(a) Cellulose (b) Gelatin
(c) Starch (d) Agar

SECTION – B | Long Answer / Essay Questions — 3 × 10 = 30 Marks

*Answer any **THREE** of the following. Each question carries 10 marks.*

Q21. Define pharmacopoeia. Write about IP, BP and USP and describe the salient features of the Indian Pharmacopoeia. [10]

Q22. Define extraction. Classify the methods of extraction and explain maceration and percolation in detail. [10]

Q23. Define suspensions. Explain flocculated and deflocculated suspensions and describe the ideal properties and formulation additives of a good suspension. [10]

Q24. Classify liquid dosage forms. Explain the preparation of syrups and the different methods used to prepare them. [10]

Q25. Define capsules. Differentiate between hard and soft gelatin capsules and describe the manufacture of hard gelatin capsules. [10]

SECTION – C | Short Notes — 5 × 6 = 30 Marks

*Answer any **FIVE** of the following. Each question carries 6 marks.*

Q26. Systems of weights and measures [6]

Q27. Cyclone separator [6]

Q28. Fluidised bed dryer [6]

Q29. Pharmaceutical incompatibilities (with example) [6]

Q30. Types of glass and their uses [6]

Q31. HLB scale and its significance [6]

Q32. Nasal preparations [6]

— END OF QUESTION PAPER —

BOARD OF DIPLOMA IN PHARMACY EXAMINATIONS

D.Pharm — FIRST YEAR | ER-2020 Regulation

MODEL QUESTION PAPER — SET 3

PHARMACEUTICS (ER20-11T)

Time: 3 Hours **Reg. No. : _____** **Max. Marks: 80**

General Instructions: *All sections are compulsory. Figures to the right indicate full marks. Draw neat, labelled diagrams / flowcharts wherever necessary. Answers to Section A (Q.1–20) must be written together as a single unit.*

SECTION – A | Multiple Choice Questions — 20 × 1 = 20 Marks

*Answer **ALL** questions. Each question carries 1 mark.*

Q1. Extra Pharmacopoeia is also known as
(a) Martindale (b) Merck Index
(c) USP-NF (d) BP

Q2. The direction to the patient on a prescription is written in the
(a) Superscription (b) Inscription
(c) Subscription (d) Signatura

Q3. The abbreviation 'q.i.d.' means the drug is taken
(a) Once daily (b) Twice daily
(c) Four times daily (d) At bedtime

Q4. Which mill is best suited for producing very fine powders of hard materials?
(a) Cutter mill (b) Ball mill
(c) Hammer mill (d) Roller mill

Q5. Size separation by passing through sieves is called
(a) Sifting (b) Elutriation
(c) Sedimentation (d) Cyclone separation

Q6. Which is a fixed oil used pharmaceutically?
(a) Clove oil (b) Castor oil
(c) Peppermint oil (d) Turpentine oil

Q7. The device used to reduce particle size using rollers is a
(a) Ball mill (b) Roller mill
(c) Hammer mill (d) Colloid mill

Q8. A pyrogen-free water used for injections is
(a) Purified water (b) Water for injection
(c) Distilled aromatic water (d) Tap water

Q9. Which agent stabilises an emulsion?
(a) Emulgent (b) Disintegrant
(c) Lubricant (d) Preservative only

Q10. The most suitable container for a light-sensitive drug is
(a) Colourless glass (b) Amber glass
(c) Plastic pouch (d) Paper

Q11. Trituration is carried out using a
(a) Beaker (b) Mortar and pestle
(c) Sieve (d) Still

Q12. Which is a water-soluble suppository base?
(a) Cocoa butter (b) PEG (macrogol)
(c) Theobroma oil (d) Hard fat

Q13. Milk of magnesia is an example of a
(a) Emulsion (b) Magma/gel
(c) Syrup (d) Elixir

Q14. Which method is used to prepare emulsions on a small scale?
(a) Dry gum method (b) Fusion
(c) Sugar coating (d) Sublimation

Q15. Effervescent granules produce gas due to reaction between an acid and a
(a) Sugar (b) Bicarbonate
(c) Starch (d) Talc

Q16. Which excipient reduces friction between tablet and die wall?
(a) Binder (b) Lubricant
(c) Disintegrant (d) Colour

Q17. Sterilisation by dry heat is done using a
(a) Autoclave (b) Hot air oven
(c) Membrane filter (d) UV lamp

Q18. The official temperature range for 'cold' storage in IP is
(a) 2–8 °C (b) 8–15 °C
(c) 15–25 °C (d) 25–30 °C

Q19. Which is a monophasic dosage form?
(a) Lotion (suspension type) (b) Linctus
(c) Emulsion (d) Magma

Q20. Enteric coating is designed to dissolve in the
(a) Mouth (b) Stomach
(c) Intestine (d) Colon wall only

SECTION – B | Long Answer / Essay Questions — 3 × 10 = 30 Marks

*Answer any **THREE** of the following. Each question carries 10 marks.*

Q21. Explain the different systems of weights and measures used in pharmacy and solve dosage calculation problems involving reduction and enlargement of formulae. [10]

Q22. Define mixing. Explain the mechanisms of mixing and describe the construction and working of any two solid–solid mixers. [10]

Q23. Define ointments. Classify ointment bases with examples and describe the methods of preparation of ointments. [10]

Q24. Describe in detail the various dosage forms of powders (bulk powders, divided powders, dusting powders and effervescent granules) with their preparation. [10]

Q25. What are parenteral preparations? Explain the requirements, containers and advantages/disadvantages of parenteral products. [10]

SECTION – C | Short Notes — 5 × 6 = 30 Marks

*Answer any **FIVE** of the following. Each question carries 6 marks.*

Q26. Pharmaceutical aids and their types [6]

Q27. Distillation and its types [6]

Q28. Dry gum and wet gum methods of emulsification [6]

Q29. Preservatives used in liquid orals [6]

Q30. Lozenges and their preparation [6]

Q31. Levigation and geometric dilution [6]

Q32. Current Good Manufacturing Practices (cGMP) [6]

— END OF QUESTION PAPER —

BOARD OF DIPLOMA IN PHARMACY EXAMINATIONS

D.Pharm — FIRST YEAR | ER-2020 Regulation

MODEL QUESTION PAPER — SET 4

PHARMACEUTICS (ER20-11T)

Time: 3 Hours **Reg. No. : _____** **Max. Marks: 80**

General Instructions: *All sections are compulsory. Figures to the right indicate full marks. Draw neat, labelled diagrams / flowcharts wherever necessary. Answers to Section A (Q.1–20) must be written together as a single unit.*

SECTION – A | Multiple Choice Questions — 20 × 1 = 20 Marks

*Answer **ALL** questions. Each question carries 1 mark.*

Q1. National Formulary of India provides information mainly on
(a) Poisons (b) Rational drug combinations & formulations
(c) Cosmetics (d) Herbal drugs

Q2. Dilling's formula is used to estimate a dose based on
(a) Weight (b) Surface area
(c) Age (d) Height

Q3. The abbreviation 's.o.s.' means
(a) Immediately (b) If necessary
(c) Before food (d) Twice daily

Q4. Colloid mill is used for size reduction of
(a) Coarse solids (b) Suspensions and emulsions
(c) Tablets (d) Dry powders

Q5. Elutriation is a method of
(a) Drying (b) Mixing
(c) Size separation (d) Coating

Q6. Which is an ideal property of a suppository base?
(a) High melting range (b) Melts at body temperature
(c) Insoluble in body fluids (d) Irritant

Q7. Aromatic waters are
(a) Concentrated oils (b) Saturated aqueous solutions of volatile oils
(c) Alcoholic tinctures (d) Emulsions

Q8. Which of these is a solid–liquid extraction process?
(a) Filtration (b) Maceration
(c) Distillation (d) Sedimentation

Q9. Which is a lubricant used in tablet manufacture?
(a) Starch (b) Magnesium stearate
(c) Lactose (d) Acacia

Q10. The preferred method for sterilising heat-labile solutions is
(a) Autoclaving (b) Dry heat
(c) Membrane filtration (d) Boiling

Q11. A linctus is a viscous liquid mainly used for
(a) Constipation (b) Cough
(c) Fever (d) Skin

Q12. Which container protects a hygroscopic drug from moisture?
(a) Open jar (b) Well-closed, airtight container
(c) Paper bag (d) Cloth bag

Q13. Spray drying is used to dry
(a) Tablets (b) Heat-sensitive liquids
(c) Coarse granules (d) Ointments

Q14. The 'continental' or 'dry gum' method uses an initial gum:oil:water ratio of
(a) 4:2:1 (b) 1:2:4
(c) 2:2:2 (d) 3:1:1

Q15. Talc in tablets acts as a
(a) Binder (b) Glidant
(c) Disintegrant (d) Sweetener

Q16. Which is a natural emulsifying agent?
(a) Tween 80 (b) Acacia
(c) Sodium lauryl sulphate (d) Span 20

Q17. Sterility testing is performed to detect
(a) Pyrogens (b) Viable microorganisms
(c) Particulate matter (d) pH

Q18. Which packaging is child-resistant and commonly used for tablets?
(a) Blister pack (b) Ampoule
(c) Vial (d) Sachet

Q19. The pharmacopoeial name for table sugar is
(a) Dextrose (b) Sucrose
(c) Fructose (d) Maltose

Q20. Which is a semisolid intended for application to mucous membranes?
(a) Paste (b) Jelly/gel
(c) Cream (d) Lotion

SECTION – B | Long Answer / Essay Questions — 3 × 10 = 30 Marks

*Answer any **THREE** of the following. Each question carries 10 marks.*

Q21. Define pharmacy and describe the history of the profession of pharmacy in India in relation to education, industry and professional associations. [10]

Q22. Classify size-separation equipment. Explain the standards of sieves and describe the working of a sieve shaker and cyclone separator. [10]

Q23. Define creams. Differentiate between o/w and w/o creams and describe the formulation and evaluation of creams. [10]

Q24. What are parenteral products? Describe the vehicles, added substances, containers and quality-control tests for parenterals. [10]

Q25. Define drying. Explain the theory of drying and describe the construction and working of a tray dryer and fluidised bed dryer. [10]

SECTION – C | Short Notes — 5 × 6 = 30 Marks

*Answer any **FIVE** of the following. Each question carries 6 marks.*

Q26. Salient features of prescription with example [6]

Q27. Roller mill / edge runner mill [6]

Q28. Emulsion stability and its problems (creaming, cracking) [6]

Q29. Types of tablets [6]

Q30. Sources and effects of impurities in pharmaceuticals [6]

Q31. Storage conditions of vaccines and sera [6]

Q32. Advantages of pre-packaging [6]

— END OF QUESTION PAPER —

BOARD OF DIPLOMA IN PHARMACY EXAMINATIONS

D.Pharm — FIRST YEAR | ER-2020 Regulation

MODEL QUESTION PAPER — SET 5

PHARMACEUTICS (ER20-11T)

Time: 3 Hours **Reg. No. : _____** **Max. Marks: 80**

General Instructions: *All sections are compulsory. Figures to the right indicate full marks. Draw neat, labelled diagrams / flowcharts wherever necessary. Answers to Section A (Q.1–20) must be written together as a single unit.*

SECTION – A | Multiple Choice Questions — 20 × 1 = 20 Marks

*Answer **ALL** questions. Each question carries 1 mark.*

Q1. Which pharmacopoeia has legal status in India?
(a) BP (b) USP
(c) IP (d) EP

Q2. The Latin term 'a.c.' means
(a) After food (b) Before food
(c) At bedtime (d) With food

Q3. A prescription order 'M. ft. mist.' means
(a) Make a mixture (b) Make an ointment
(c) Make pills (d) Label well

Q4. Which is a coarse size-reduction machine?
(a) Ball mill (b) Jaw crusher
(c) Colloid mill (d) Fluid energy mill

Q5. Fluid energy mill (micronizer) reduces particle size by
(a) Cutting (b) Inter-particle collision
(c) Compression (d) Rolling

Q6. Sedimentation rate of particles is governed by
(a) Fick's law (b) Stoke's law
(c) Beer's law (d) Henry's law

Q7. Which is used as a suspending agent?
(a) Bentonite (b) Talc
(c) Magnesium stearate (d) Lactose

Q8. A well-formulated suspension should
(a) Cake hard (b) Redisperse easily on shaking
(c) Be non-pourable (d) Sediment permanently

Q9. Which is a synthetic non-ionic surfactant?
(a) Acacia (b) Tragacanth
(c) Tween 80 (d) Gelatin

Q10. Aqueous liquid meant for external use as a soothing agent is a
(a) Syrup (b) Lotion
(c) Linctus (d) Elixir

Q11. Ampoules are examples of
(a) Multi-dose containers (b) Single-dose containers
(c) Bulk containers (d) Child-resistant packs

Q12. The unit process of converting a solution into dry powder by hot gas is
(a) Freeze drying (b) Spray drying
(c) Tray drying (d) Vacuum drying

Q13. Which method prepares emulsion using nascent soap?
(a) Bottle method (b) In-situ soap method
(c) Dry gum method (d) Fusion method

Q14. Magnesium stearate can cause tablet problems if used in
(a) Very low amount (b) Excess amount
(c) Any amount (d) Coated tablets only

Q15. Which glass type is highly resistant and used for injections?
(a) Type I borosilicate (b) Type III soda
(c) Type NP (d) Plastic

Q16. Sublimation is used to purify substances that
(a) Melt easily (b) Change directly from solid to vapour
(c) Dissolve in water (d) Oxidise

Q17. Which is a water-removable base?
(a) Hydrocarbon base (b) Absorption base
(c) Emulsion (o/w) base (d) Oleaginous base

Q18. Ophthalmic preparations must essentially be
(a) Coloured (b) Sterile and isotonic
(c) Viscous only (d) Acidic

Q19. Which of these is a fast-dissolving oral dosage form?
(a) Enteric tablet (b) Mouth-dissolving tablet
(c) Sustained tablet (d) Implant

Q20. The purpose of a glidant in tablets is to improve
(a) Taste (b) Powder flow
(c) Colour (d) Disintegration

SECTION – B | Long Answer / Essay Questions — 3 × 10 = 30 Marks

*Answer any **THREE** of the following. Each question carries 10 marks.*

Q21. Define dispensing. Explain pharmaceutical calculations including percentage solutions, alligation and dose calculation with worked examples. [10]

Q22. Classify unit operations in pharmacy. Explain size reduction and its objectives, factors affecting it and the laws governing energy for size reduction. [10]

Q23. Define ophthalmic preparations. Describe their formulation requirements (sterility, isotonicity, pH, viscosity) and method of preparation of eye drops. [10]

Q24. Define suppositories. Classify suppository bases, describe displacement value and the preparation of suppositories. [10]

Q25. Explain in detail the different immunological products — antisera, toxoids and vaccines — with examples, uses and storage. [10]

SECTION – C | Short Notes — 5 × 6 = 30 Marks

*Answer any **FIVE** of the following. Each question carries 6 marks.*

Q26. Introduction to IP, BP and USP [6]

Q27. Fluid energy mill (micronizer) [6]

Q28. Filter media and filter aids [6]

Q29. Mouth-dissolving / dispersible tablets [6]

Q30. Displacement value of suppositories [6]

Q31. Isotonic solutions and their importance [6]

Q32. Quality control tests for tablets [6]

— END OF QUESTION PAPER —