This question paper contains **3** printed pages]

SP—02—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Seventh Semester) EXAMINATION

APRIL/MAY, 2024

INSTRUMENTAL METHODS OF ANALYSIS

Paper BP101-T

(Tuesday, 14-05-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours *Maximum Marks*—75

Note :— (*i*) *All* questions are compulsory.

(*ii*) Write to the point only.

(*iii*) Figures to the right indicate full marks.

(*iv*) Mobiles/phones/digital watch are strictly prohibited.

1. Answer all the following questions : 10×2=20

(*a*) Explain the following terms :

(*i*) Chromophore and blue shift

(*ii*) Rf value

(*b*) Distinguish between TLC and paper chromatography.

P.T.O.

(c) What is affinity chromatography ?

(d) What is difference between Raman spectroscopy and IR spectroscopy ?

(e) What is principle of Nephelometry and Turbidimetry.

(f) What is quenching ? Write down the application of Flurometry.

(g) What is Chromatography ? What are applications of ion exchange chromatography ?

(h) Define electrophoresis and enlist the factors affecting electrophoretic mobility.

(i) What is Hooke's law and simultaneous equation method of analysis ?

(j) What is single component and multicomponent analysis ?

2. Answer the following (any *two*) : 2×10=20

(a) Discuss different types of molecular vibrations and detail different sample handling tech. in IR spectroscopy.

(b) Write in detail instrumentation, sources of radiation, wavelength selectors and different detectors in UV visible spectroscopy.

(c) Discuss in brief methodology, advantages, disadvantages and applications of adsorption and partition column chromatography.

3. Answer the following (any *seven*) : 7×5=35

(*a*) Write down the principle, instrumentation and application of the flame photometry.

(*b*) What is Beer and Lambert's law ? Explain derivation and deviations.

(*c*) Discuss in brief about principle of interference instrumentation and application of atomic absorption spectroscopy.

(*d*) Write in detail about introduction, instrumentation and application of gel chromatography.

(*e*) What are the types of ion exchange resins ? Discuss different factors affecting ion exchange resins.

(*f*) Write down the preparation, activation of TLC plate and development technique in TLC.

(*g*) Write about different development techniques and detection technique in paper chromatography.

(*h*) Discuss different types of column in gas chromatography. What is programmed temperature gas chromatography.

(*i*) Write in detail about instrumentation and applications of Nepheloturbidometry.

This question paper contains **2** printed pages]

SP—06—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharmacy (Final Year) (Seventh Semester) EXAMINATION

APRIL/MAY, 2024

INDUSTRIAL PHARMACY-II

(Thursday, 16-05-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours *Maximum Marks*—75

Note :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

(*iii*) Figures to the right indicate full marks.

1. Solve the following : 10×2=20

(*a*) Give the functions of pilot plant.

(*b*) Define sending unit and receiving unit.

(*c*) Enlist responsibilities of drug development team.

(*d*) What is Copp ?

(*e*) Mention any *four* characteristics of TQM.

(*f*) What is standard operating procedure ?

(*g*) What do you mean by QbD and CGMP ?

(*h*) Enlist any *four* quality certifications.

P.T.O.

(*i*) What do you mean by investigators brochure ?

(*j*) Define regulation and regulatory affairs.

2. Solve any *two* of the following : 2×10=20

(*a*) Explain various stages involved in TT in pharmaceutical industry.

(*b*) Discuss pilot plant scale up consideration for solid dosage form.

(*c*) Describe regulatory requirement approval for obtaining NDA.

3. Solve any *seven* of the following : 7×5=35

(*a*) Discuss the type of changes under SUPAC guidelines.

(*b*) Explain in detail quality risk management.

(*c*) Write a note on six sigma concept.

(*d*) Give the functions or role of CDSCO.

(*e*) Discuss the benefits of NABL accrediation.

(*f*) Describe the scope of WHO guidelines.

(*g*) Explain analytical method exchanged in technology transfer.

(*h*) Discuss the fundamentals of GLP.

(*i*) Write about qualities and key duties of RA officer.

This question paper contains **3** printed pages]

SP—10—2024

FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

B.Pharm. (Seventh Semester) EXAMINATION

APRIL/MAY, 2024

PHARMACY PRACTICE

Paper BP703-T

(Saturday, 18-05-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours *Maximum Marks*—75

Note :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

(*iii*) Draw diagram wherever necessary.

1. Answer the following questions : 10×2=20

(*a*) Define satellite pharmacy.

(*b*) Define ambulatory patient. Enlist different types of ambulatory patient services.

(*c*) Write need of medication history interview.

(*d*) Write the advantages of planning of budget.

P.T.O.

(*e*) What is haematology ?

(*f*) Write the role of clinical pharmacist.

(*g*) Write the functions of hospital pharmacy.

(*h*) What do you mean by medication adherence ?

(*i*) Write the objective of hospital formulary system.

(*j*) Give the objective of drug information services.

2. Answer the following (any *two*) : 2×10=20

(*a*) Define inventory management with advantages and disadvantages and explain in detail about techniques in inventory management.

(*b*) Discuss various legal requirements for the establishment and maintenance of drug store.

(*c*) Discuss in detail about classification of hospital on the basis of clinical and non-clinical orientation with role of administer.

3. Answer the following (any *seven*) : 7×5=35

(*a*) Define material management. Write the functions of material management.

(*b*) Explain the various laboratory tests used in urine analysis.

(*c*) Explain the procedure for the distribution of controlled drug.

(*d*) Write the need and limitations of therapeutic drug monitoring.

(*e*) Write mechanism of pharmacokinetic drug interactions.

(*f*) Explain dispensing procedure in unit dose system.

(*g*) Discuss various layouts of community pharmacy.

(*h*) Explain the role of pharmacist in community health education.

(*i*) Define ADR and classify it with example.

This question paper contains **2** printed pages]

SP—14—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm. (Seventh Semester) EXAMINATION

APRIL/MAY, 2024

NOVEL DRUG DELIVERY SYSTEM

(Tuesday, 21-05-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours *Maximum Marks*—75

Note :— (*i*) *All* questions are compulsory.

(*ii*) Draw appropriate diagram/charts wherever necessary.

(*iii*) Answer to the point only.

1. Answer the following : 10×2=20

(*a*) Define controlled drug delivery system.

(*b*) Classify liposomes.

(*c*) Write applications of targeted drug delivery system.

(*d*) Write merits of mucoadhesive drug delivery system.

(*e*) Define microspheres and micro-capsules.

(*f*) Define floating time and floating lag time.

P.T.O.

(g) Define nebulizer.

(h) State Higuchi model.

(i) Write applications of micro-encapsulations.

(j) Define bioresponsive drug delivery system.

2. Answer any *two* questions : 2×10=20

(a) Discuss classification and application of polymers used in CDDS.

(b) Explain the approaches used in development of GRDDs.

(c) Explain in detail coacervation phase separation method.

3. Answer any *seven* : 7×5=35

(a) Explain principles of Mucoadhesion.

(b) Write about production of monoclonal antibodies.

(c) Explain about intrauterine devices.

(d) Write a short note on Alzet osmotic pump.

(e) Write a note on metered dose inhaler.

(f) Describe factors considered in development of TDDs.

(g) Write a short note on ocuserts.

(h) Discuss in brief nano-particles.

(i) Give the applications of liposomes.

This question paper contains **2** printed pages]

PP—02—2023

FACULTY OF SCIENCE

B. Pharm. (Fourth Year) (Seventh Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

INSTRUMENTAL METHODS OF ANALYSIS

BP701T

(Tuesday, 26-12-2023) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

(*iii*) Figures to the right indicate full marks.

1. Solve the following : 2×10=20

(*a*) State Hooke's law.

(*b*) Write limitations of flame photometry.

(*c*) Write characteristics of adsorbent used in column chromatography.

(*d*) Define singlet state and triplet state.

(*e*) How to prepare 4000 NTU.

(*f*) Why silica gel used in thin layer chromatography ?

(*g*) Why region below 200 nm is also called as Vacuum UV region ?

P.T.O.

(*h*) What is Radial Chromatography ?

(*i*) Sketch a neat labelled diagram of atomic absorption spectroscopy.

(*j*) Which filter paper used in paper electrophoresis ?

2. Solve any *two* of the following : 2×10=20

(*a*) Write instrumentation of UV-Visible spectroscopy.

(*b*) What is C_{18} column ? Explain detectors used in HPLC.

(*c*) Write advantages and limitations of affinity chromatography.

3. Solve any *seven* of the following : 7×5=35

(*a*) Write errors in flame photometry.

(*b*) How will you activate TLC plates ?

(*c*) Write requirements in molecular structure for exhibiting fluorogenic activity.

(*d*) Write principle and factors affecting nephelometry and turbidimetry.

(*e*) Describe method of sampling of solid, liquid and gases in IR spectroscopy.

(*f*) Write disadvantages of Atomic Absorption Spectroscopy.

(*g*) Write applications of electrophoresis.

(*h*) Give reasons for deviations from Beer's law.

(*i*) Write advantages and disadvantages of AID in gas chromatography.

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This question paper contains **2** printed pages]

PP—06—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm. (Seventh Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

INDUSTRIAL PHARMACY

Paper–II (BP–702T)

(Thursday, 28-12-2023) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Answer to the point only.

1. Solve *all* of the following : 10×2=20

(*a*) Give the functions of Pilot Plant.

(*b*) What do you mean by Technology Transfer ?

(*c*) Define Regulation and Regulatory affairs.

(*d*) Enlist responsibilities of drug development team.

(*e*) Define the terms :

(*i*) Quality control

(*ii*) Quality assurance.

(*f*) Enlist any *four* responsibilities of CDSCO.

(*g*) What is master manufacturing procedure ?

P.T.O.

(*h*) Define Sending unit and Receiving unit.

(*i*) What do you mean by Investigator's Brochure ?

(*j*) Enlist any *four* quality certifications.

2. Solve any *two* of the following : 2×10=20

(*a*) Discuss Pilot Plant scale up consideration for solid dosage form.

(*b*) Explain in detail about Validation.

(*c*) Describe general consideration of IND application.

3. Solve any *seven* of the following : 7×5=35

(*a*) Explain checklist for Pharmaceutical Scale up.

(*b*) Discuss Technology Transfer Protocol.

(*c*) Explain importance of RA.

(*d*) Define B.E. Discuss its study methods.

(*e*) Write a note on TQM.

(*f*) Discuss drug approval process in India.

(*g*) Describe SUPAC guidelines in brief.

(*h*) Explain the six-sigma concept.

(*i*) Discuss qualities and key duties of R.A. Officer.

This question paper contains **2** printed pages]

PP—10—2023

FACULTY OF PHARMACEUTICAL SCIENCE

B.Pharm. (Final Year) (Seventh Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

PHARMACY PRACTICE

Paper–(BP-703T)

(Saturday, 30-12-2023) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Draw the diagrams wherever necessary.

(*iii*) Figures to the right indicate full marks.

1. Solve the following : 10×2=20

(*a*) What do you mean by Medication Adherence ?

(*b*) Write the advantages of planning of budget.

(*c*) Write the need of therapeutic drug monitoring.

(*d*) Enlist the different types of ambulatory patient services.

(*e*) How to manage ADR in community pharmacy ?

(*f*) What are the advantages and disadvantages of hospital pharmacy ?

(*g*) Define pharmacy and therapeutic committee.

(*h*) Draw a typical layout of hospital pharmacy.

(*i*) Write about primary care hospital.

(*j*) List out the supporting services required in a hospital.

P.T.O.

2. Solve any *two* of the following : 2×10=20

(*a*) Discuss various legal requirements for the establishment and maintenance of drug store.

(*b*) Write the roles and responsibilities of hospital pharmacist.

(*c*) Write the organization, structure and staff associated with hospital pharmacy.

3. Solve any *seven* of the following : 7×5=35

(*a*) Write the need and limitations of therapeutic drug monitoring.

(*b*) Write the policy for the preparation, revision and maintenance of hospital formulary.

(*c*) Explain dispensing procedure in unit dose system.

(*d*) Explain in brief floor stock system of drug distribution.

(*e*) Discuss in detail the drug distribution system to inpatient department.

(*f*) Write contents and organization of hospital formulary.

(*g*) Discuss various layouts of Community Pharmacy.

(*h*) Write the procedure of dispensing of proprietary products.

(*i*) Discuss the ideal plan of retail and wholesale pharmacy unit.

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This question paper contains **2** printed pages]

PP—14—2023

FACULTY OF PHARMACEUTICAL SCIENCES

B.Pharm. (Seventh Semester) EXAMINATION

JANUARY, 2024

NOVEL DRUG DELIVERY SYSTEM

Paper–(BP-704T)

(Tuesday, 02-01-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) Figures to the right indicate full marks.

(*ii*) Draw neat diagram wherever necessary.

(*iii*) Assume suitable data if necessary stating it clearly.

1. Solve the following questions : 10×2=20

(*a*) Discuss criterias for selection of drug candidate for CDDS.

(*b*) Enlist the theories of Mucoadhesion.

(*c*) Define penetration enhancer with examples.

(*d*) Define Gastroretentive drug delivery system and write its *two* advantages.

(*e*) Define Transdermal drug delivery system with example.

(*f*) What are barriers of ocular drug delivery system ?

(*g*) What is SODI ?

(*h*) Enlist advantages of implantable drug delivery system.

(*i*) Enlist types of Nebulisers.

(*j*) Define Polymers with examples.

P.T.O.

2. Solve the following questions (any *two*) : 2×10=20

(*a*) Classify microencapsulation techniques. Explain air suspension technique.

(*b*) Enlist approaches of Gastroretentive drug delivery system and describe in detail floating drug delivery system.

(*c*) Explain different formulation approaches of transdermal drug delivery system.

3. Solve the following questions (any *seven*) : 5×7=35

(*a*) Enumerate the factors affecting permeation of drug through the skin.

(*b*) Explain in detail about ALZET osmotic pump.

(*c*) Classify the polymers used to modify the drug release.

(*d*) Write in detail about Dry powder inhalers.

(*e*) Discuss briefly about Intrauterine drug delivery systems.

(*f*) State various methods to prepare Liposomes.

(*g*) How will you evaluate Buccal drug delivery system ?

(*h*) Write in detail about types of occusert.

(*i*) Explain basic components of transdermal patches.

This question paper contains **2** printed pages]

IP—02—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm (Fourth Year) (Seventh Semester) EXAMINATION

APRIL/MAY, 2023

INSTRUMENTAL METHODS OF ANALYSIS

Paper (BP-701T)

(Wednesday, 03-05-2023) **Time : 02.00 p.m. to 05.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

(*iii*) Figures to the right indicate full marks.

1. Solve the following : 10×2=20

(*a*) What is synthetic inorganic ion exchangers ?

(*b*) Name the improved version of gel electrophoresis.

(*c*) What are fluorogenic substances ?

(*d*) Write functions of mobile phase used in column chromatography.

(*e*) Enlist the name of *three* salts used for construction of sample cell used in IR spectrophotometer.

(*f*) What do you mean by Gortrian Diagrams ?

(*g*) What is Silica gel G ?

P.T.O.

(*h*) Which is a forbidden transition in UV spectroscopy ?

(*i*) Write advantages of HPLC.

(*j*) Write basis of nephelometric analysis.

2. Solve any *two* of the following : 2×10=20

(*a*) Give instrumentation of IR spectroscopy.

(*b*) Describe in detail about paper electrophoresis.

(*c*) Explain different apparatus used in gel chromatography.

3. Solve any *seven* of the following : 7×5=35

(*a*) Give applications of nephelometry and turbidimetry.

(*b*) Describe stationary phase and papers used in paper chromatography.

(*c*) Describe different monochromators used in UV-visible spectroscopy.

(*d*) Describe different radiation sources used in Atomic Absorption Spectroscopy.

(*e*) Describe premix burner usd in flame photometry.

(*f*) Write a note on column and thermal conductivity detector used in gas chromatography.

(*g*) Write factors affecting fluorescence.

(*h*) Write advantages and disadvantages of column chromatography.

(*i*) How TLC superior over other chromatographic techniques ?

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This question paper contains **2** printed pages]

IP—06—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm (Seventh Semester) EXAMINATION

APRIL/MAY 2023

INDUSTRIAL PHARMACY-II

Paper-BP702T

(Saturday, 06-05-2023) **Time : 2.00 p.m. to 5.00 p.m.**

Time— Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Answer to the point only.

1. Solve *all* of the following : 10×2=20

(*a*) Define Pilot and Scale up.

(*b*) What are the advantages of Technology Transfer ?

(*c*) Give the functions of CDSCO.

(*d*) Define Platform Technology.

(*e*) What is the objective of Phase-4 Clinical trial ?

(*f*) Write any *four* characteristics of TQM.

(*g*) Give the functions of Drug Regulatory Authorities.

(*h*) What is standard operating procedure ?

(*i*) Give the objectives of Six-sigma.

(*j*) Define Quality risk management and give its principle.

P.T.O.

2. Solve any *two* of the following : 2×10=20

(*a*) Explain regulatory requirements approval for obtaining NDA.

(*b*) Discuss pilot plant scaleup consideration for solid dosage forms.

(*c*) Describe various stages involved in TT in Pharmaceutical industry.

3. Solve any *seven* of the following : 7×5=35

(*a*) Discuss the roles and responsibilities of RA professionals.

(*b*) Give the objectives and significance of Pilot Plant.

(*c*) Explain technology transfer from R & D to production as per WHO guidelines.

(*d*) Write a note on Investigators Brochure.

(*e*) Explain in detail SUPAC guidelines.

(*f*) Discuss benefits of NABL accreditation.

(*g*) Write about the analytical methods exchanged in technology transfer.

(*h*) Explain requirements for new Drug Approval.

(*i*) Describe importance of TQM in Pharmaceutical industry.

This question paper contains **2** printed pages]

IP—10—2023

FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

B.Pharm. (Final Year) (Seventh Semester) EXAMINATION

APRIL/MAY, 2023

PHARMACY PRACTICE

(BP703T)

(Tuesday, 9-5-2023) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (1) *All* questions are compulsory.

(2) Answer to the point only.

1. Answer the following : 10×2=20

(*a*) Define objective of hospital pharmacy.

(*b*) What is P & TC ?

(*c*) Give various clinical services in hospital.

(*d*) Define Inventory control.

(*e*) Enlist scope of community pharmacy.

(*f*) Give the objectives of drug distribution system in hospital.

(*g*) Define medication adherance.

(*h*) Why hospital formulary is need in hospital ?

(*i*) Define clinical pharmacy.

(*j*) What is internal teaching program in hospital ?

P.T.O.

2. Solve any *two* of the following : 2×10=20

(*a*) Write a note on budget preparation and implementation of budget.

(*b*) Explain steps involved in patient counseling. Give its benefits.

(*c*) What is Therapeutic Drug Monitoring (TDM) ? Explain current scenario of TDM in India.

3. Solve any *seven* of the following : 7×5=35

(*a*) Describe functions and responsibilities of clinical pharmacy.

(*b*) Explain various laboratory tests used in urine analysis.

(*c*) Write a note on ABC analysis.

(*d*) What are the skills require for the drug information ?

(*e*) Explain methods of detecting adverse drug effects.

(*f*) How patient records are maintained in community pharmacy ?

(*g*) Write a note on stocking and coding.

(*h*) Explain procedure for purchasing of material.

(*i*) Write a short note on rational use of OTC drugs.

This question paper contains **2** printed pages]

IP—14—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm (Seventh Semester) EXAMINATION

APRIL/MAY, 2023

NOVEL DRUG DELIVERY SYSTEM

Paper–BP-704-T

(Thursday, 11-5-2023) **Time : 2.00 p.m. to 5.00 p.m.**

Time— Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

(*iii*) Figures to the right indicate full marks.

(*iv*) Illustrate your answers with neat sketch wherever necessary.

1. Solve the following : 10×2=20

(*a*) Define controlled release drug delivery system.

(*b*) Give ideal properties of polymers.

(*c*) What are the components of Microencapsulations.

(*d*) Give concept of Mucoadhesion.

(*e*) Give advantages of Implantable Drug Delivery System.

(*f*) Enlist components of transdermal drug delivery system.

(*g*) Why Niosomes are used in cancer chemotherapy ?

(*h*) Enlist characteristics of drugs suitable for GRDDS.

(*i*) Define and classify Liposomes.

(*j*) Give advantages of Nanoparticles.

P.T.O.

2. Solve any *two* of the following : 2×10=20

(*a*) Define Microencapsulation. Explain in detail kluster aiz suspension apparatus.

(*b*) What are ocular insects ? Discuss in detail non-erodible inserts.

(*c*) Define transdermal therapeutic system. Discuss in detail approaches of TDDS.

3. Solve any *seven* of the following : 7×5=35

(*a*) Give pharmaceutical applications of Polymers.

(*b*) Give different types of IUDs.

(*c*) Discuss in brief about high density system in GRDDS.

(*d*) White in brief about Alzet Osmotic Pump.

(*e*) Describe different factors affecting permeation through skin.

(*f*) Give advantages and disadvantages of mucosal drug delivery system.

(*g*) Discuss in detail Nasal sprays.

(*h*) Enlist different approaches to design controlled release formulation. Discuss ion exchange principle.

(*i*) Give evaluation of TDDS.

This question paper contains 2 printed pages]

DP—02—2022

FACULTY OF SCIENCE AND TECHNOLOGY

B. Pharm (Fourth Year) (VII Semester) EXAMINATION

NOVEMBER/DECEMBER, 2022

INSTRUMENTAL METHODS OF ANALYSIS

Paper BP701T

(Monday, 26-12-2022) **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours *Maximum Marks—75*

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

(*iii*) Figures to the right indicate full marks.

1. Solve the following : 10×2=20

(*a*) Which type of molecules shows IR absorption ?

(*b*) Write limitations of Atomic Absorption Spectroscopy.

(*c*) Write characteristics of flame used in flame photometry.

(*d*) What is 'Rm' in paper chromatography ?

(*e*) Distinguish between Fluorescence and Phosphorescence.

(*f*) Define cellulose acetate electrophoresis.

(*g*) Enlist different carrier gases used in gas chromatography.

(*h*) Sketch a neat labelled diagram of HPLC.

(*i*) Give ideal requirements in the solvent used for UV-spectroscopy.

(*j*) Write interferences in flame photometry.

P.T.O.

2×10=20

2. Solve any *two* of the following :

(*a*) Explain different types of absorption bands with examples in UV-Visible spectroscopy.

(*b*) Describe in detail about instrumentation of gas chromatography.

(*c*) Write applications of IR spectroscopy.

7×5=35

3. Solve any *seven* of the following :

(*a*) Write factors affecting column chromatography.

(*b*) Draw schematic diagram and give the working of Du Pont Model 430 turbidimeter.

(*c*) Describe different techniques for preparation of TLC plates.

(*d*) Write interferences in flame photometry.

(*e*) Write a note on HETP.

(*f*) Describe sample injectors in HPLC.

(*g*) Write factors affecting ion exchange resins.

(*h*) Describe principle of affinity chromatography with a neat labelled diagram.

(*i*) Write requirements of gel used in gel chromatography.

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(This Question paper contains 02 printed pages)

DP-14-2022

FACULTY OF SCIENCE AND TECHNOLOGY

B.Pharm – VII Semester

WINTER – 2022

Novel Drug Delivery System

Wednesday – 04.01.2023 02 p.m. to 05 p.m.

Time : Three Hours Marks : 75

Note : 1. All questions are compulsory.
2. Answer to the Point only.
3. Figure to the right indicate full marks
4. Illustrate your answer with neat sketch wherever necessary.

Q.1 Solve the Following. **20**

a) What are the advantages & disadvantages of Controlled release drug delivery system.
b) Enlist advantages of polymers in pharmaceuticals.
c) What are the advantages and disadvantages of copper intrauterine devices.
d) Define targeted drug delivery system.
e) Give the application of monoclonal Antibodies.
f) List out the advantages & disadvantages of implantable Drug Delivery System.
g) Define & classify Liposome.
h) Give advantages of Nonoparticles.
i) Give advantages & disadvantages of Nasal drug delivery system.
j) What are dry powder inhalers ?

Q.2 Solve any two of the following. **20**

a) Enlist the different methods & explain any one method of preparation of Nanoparticles.
b) Define Micro encapsulation. Explain in detail the fluidized bed coating or Air Suspension technique.
c) Explain briefly about intraocular barrier. How do you overcome the intraocular barrier ?

Q.3 Solve any seven of the following. **35**

a) Explain the principle of drug release from alzeit osmotic pump.
b) Give the pharmaceutical application of polymers.
c) Describe hormonal intrauterine drug delivery system.
d) How you will evaluate T.D.D.S.
e) Explain in brief about Nasal spray.
f) Explain the appronches for CR formulations.
g) Explain concept, advantages & disadvantages of Liposomes.
h) Describe the componants of transdermal drug delivery system.
i) Enlist & elaborate the factors affecting permeation through skin.

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This question paper contains **2** printed pages]

VO—04—2022

FACULTY OF PHARMACY

B.Pharma. (Fourth Year) (Seventh Semester) EXAMINATION

MAY/JUNE, 2022

INSTRUMENTAL METHODS OF ANALYSIS

Paper BP701T

(Tuesday, 28-06-2022) **Time : 2.00 p.m. to 5.45 p.m.**

Time— 3.45 *Hours* *Maximum Marks*—75

N.B. :— (*i*) All questions are compulsory.

(*ii*) Answer to the point only.

(*iii*) Figures to the right indicate full marks.

1. Solve the following : 2×10=20

(*a*) State Lambert's law.

(*b*) Write limitations of flame photometry.

(*c*) Distinguish between fluorescence and phosphorescence.

(*d*) How will you prepare standard solution for Nephelometry and Turbidimetry ?

(*e*) Why is Silica gel used in TLC ?

(*f*) What type of molecule shows IR absorption ?

(*g*) What is 'R_m' in paper chromatography ?

(*h*) What is cellulose acetate electrophoresis ?

(*i*) Write requirements of ideal carrier gas used in gas chromatography.

(*j*) Which are *two* types of separations done in gel chromatography ?

2. Solve any *two* of the following : 10×2=20

(*a*) What is C18 column ? Explain detectors used in HPLC.

P.T.O.

(*b*) Explain different radiation sources used in IR spectroscopy.

(*c*) Explain electronic transitions involved in UV-visible spectroscopy.

3. Solve any *seven* of the following : 5×7=35

(*a*) Give errors in flame photometry.

(*b*) Write advantages and disadvantages of column chromatography.

(*c*) Write factors affecting fluorescence and phosphorescence.

(*d*) Describe the following chromatographic separation techniques with diagram :

(*i*) Elution analysis

(*ii*) Frontal analysis

(*e*) Differentiate between atomic absorption spectroscopy and flame emission spectroscopy.

(*f*) Describe different techniques for preparation of TLC plates.

(*g*) Describe construction and working of paper electrophoresis.

(*h*) Give factors affecting Nephelometry and Turbidimetry.

(*i*) Give ideal requirements for ion exchange resins.

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