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NM—02—2026

FACULTY OF SCIENCE AND TECHNOLOGY

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

APRIL/MAY, 2026

INSTRUMENTAL METHODS OF ANALYSIS

(BP701T)

(Thursday, 16-4-2026) **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours *Maximum Marks—75*

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

(*ii*) Write the structure and chemical reaction wherever necessary.

1. Answer all the questions : 10×2=20

(1) Define hypochromatic shift and bathocromatic shift.

(2) Define Isotoxic and gradient elution.

(3) Explain in short about electrophoresis.

(4) Give any *four* applications of gas chromatography.

(5) Why guard column is used in HPLC ?

(6) Write the comparison between TLC and Paper chromatography.

(7) Give the name of *two* absorbents used in TLC.

(8) Define Beer and Lambert's Law.

(9) Define : (*i*) Dipole moment (*ii*) Quenching.

(10) What is RI value ? Explain it in short.

P.T.O.

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

(1) Write in detail about the principle, instrumentation and application of HPLC.

(2) Explain about principle and instrumentation of IR spectrometer.

(3) Write the principal step involved in size exclusion gel chromatography with its instrumentation and application.

3. Write any *seven* : 7×5=35

(1) Define electrophoresis and write about gel electrophoresis.

(2) Write the principle, advantages and application of TLC.

(3) Explain the monochromators and any *two* detectors used in uv spectroscopy.

(4) Write the theory and application of affinity chromatography.

(5) Write the principal instrumentation of flame photometry.

(6) Explain in detail about factor affecting Ion-exchange chromatography. Give its applications.

(7) Write about electronic transitions in uv spectroscopy.

(8) Describe principle and instrumentation of AAS.

(9) Write a note on derivatization and temperature programming in gas chromatography.

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NM—06—2026

FACULTY OF SCIENCE AND TECHNOLOGY

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

APRIL/MAY, 2026

INDUSTRIAL PHARMACY-II

(Saturday, 18-04-2026) (BP702T) **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. Answer *all* the following questions : 10×2=20

(*a*) Define the term Pilot Plant. Give its significance.

(*b*) What are the objectives of scale up ?

(*c*) What is technology transfer ? Write any *two* applications of the same.

(*d*) Recall the applications of bioavailability and bioequivalence study.

P.T.O.

(e) Define the following :

(i) Receiving unit

(ii) Sending unit.

(f) What is clinical and preclinical studies ?

(g) State the importance of GMP.

(h) What is Toxicology ? Enlist its types.

(i) What do you mean by common technical document ?

(j) Define critical process parameter (CPA). Give any *two* examples.

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

(a) What is SUPAC guideline ? Elaborate the SUPAC guideline applicable to manufacturing process and site change.

(b) Elaborate the procedure of new drug application and investigation of new drug application (INDA).

(c) Describe the organisation of COSCO in detail.

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

(*a*) What is COPP ? Wht is the process of getting COPP ?

(*b*) Briefly describe about quality be design (Qbd).

(*c*) Discuss in detail about design qualification and installation qualification.

(*d*) Describe the content of investigator brochure.

(*e*) What is the aim of ISO1400 series ? Discuss the model of ISO1400 series.

(*f*) Write a note on applications of Biostatistics in product development.

(*g*) Describe WHO guidelines for technology transfer.

(*h*) Briefly describe the steps involved in risk control.

(*i*) Explain pilot plant scale up considerations for semisolid formulations.

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NM—10—2026

FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

B.Pharm. (Seventh Semester) EXAMINATION

APRIL/MAY, 2026

PHARMACY PRACTICE

(Tuesday, 21-04-2026) (BP703T) **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.

1. All questions are compulsory : 10×2=20

(*a*) Enlist different types of ambulatory patient services.

(*b*) What is Budget ?

(*c*) Define Inventory Control.

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

(*e*) Give objective of Drug distribution system in hospital.

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

P.T.O.

(g) Give the role of satellite pharmacy and ward pharmacy.

(h) Define clinical pharmacy.

(i) What is hemotology ?

(j) Give objective of drug information services.

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

(a) Explain steps involved in patient counselling. Give its benefits.

(b) Explain floor stock system of drug distribution.

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

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

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

(b) What is TDM ? Give objectives of TDM.

(c) Write a brief account on VED Analyss.

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

(e) Write a note on interpretation of urine analysis.

(f) Explain procedure for purchasing of material.

(g) Define ADR and classify it with example.

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NM—14—2026

FACULTY OF PHARMACEUTICAL SCIENCES

B.Pharm. (Seventh Semester) EXAMINATION

APRIL/MAY, 2026

NOVEL DRUG DELIVERY SYSTEMS

(Thursday, 23-4-2026) (BP704T) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

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

(2) Figures to the right indicate full marks.

(3) Draw well labelled diagram wherever necessary.

1. Solve the following : 10×2=20

(*a*) Define the term micro-encapsulation and micro-capsules.

(*b*) Define Niosomes and Nano-particles.

(*c*) Mention advantages and disadvantages of Buccal drug delivery system.

P.T.O.

(*d*) Define metered dose inhalers.

(*e*) Mention basic components of transdermal delivery system.

(*f*) Define mono-clonel antibodies.

(*g*) What is sustained release and extended release drug delivery system ?

(*h*) Enlist the Intra-occular barriers to occular drug delivery system.

(*i*) Define principle of permeation enhancers.

(*j*) Write down the classification of polymers.

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

(*a*) Explain the different formulation approach of transdermal drug delivery system.

(*b*) Describe the various approaches for development of controlled release formulations with examples.

(*c*) Explain in detail about development and applications of IUDs.

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

(*a*) Explain detail about hybridomo technology.

(*b*) Describe formulation approaches for GRDDS.

(c) Write a note on Buccal drug delivery system.

(d) Give brief note about osmotic pumps and implants.

(e) Write principle of Nebuliser with examples.

(f) Give applications of monoclonel antibodies.

(g) Explain principle of Bio-adhesion.

(h) Discuss the different factors affecting permeation through skin.

(i) Write down the development and applications of floating drug delivery system.