

QP Code: 821006

Reg. No.....

**Eighth Semester B. Pharm Degree Regular/Supplementary
Examinations July 2023
Biostatistics and Research Methodology
(2017 Scheme)**

Time: 3 Hours

Max. Marks: 75

- *Answer all questions to the point neatly and legibly* • *Do not leave any blank pages between answers* • *Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together* • *Leave sufficient space between answers*
- *Draw diagrams wherever necessary*

Essays

(2x10=20)

1. Define research and explain various types of research. Outline the overall steps in research process.
2. Describe hypothesis testing in research. Explain how computers and softwares are helpful in statistical analysis.

Short Notes

(7x5=35)

3. Components of a thesis.
4. Write the various sources of primary and secondary data.
5. What are measures of association.
6. Format for research protocol.
7. Explain the probability sampling methods.
8. Enlist screening designs. What is two-level factorial design. What are the advantages of factorial design
9. Describe TWO parametric tests used in context of testing hypothesis.

Answer Briefly

(10x2=20)

10. List out four unethical practices in research.
11. Write the meaning of questionnaire.
12. List out methods of data collection.
13. Observational study.
14. Write the advantages and disadvantages of cohort study.
15. Validity and reliability of instrument.
16. Explain case-control study. Give an example of case-control study.
17. Write the relationship between sample size and power of the test.
18. Non-probability sampling methods. Enlist four methods.
19. Define hypothesis. Write their types with suitable examples.

QP Code: 822006

Reg. No.....

**Eighth Semester B. Pharm Degree Regular/Supplementary
Examinations July 2023
Social and Preventive Pharmacy
(2017 Scheme)**

Time: 3 Hours

Max. Marks: 75

- Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space
- Answer all parts of a single question together • Leave sufficient space between answers
- Draw diagrams wherever necessary

Essays

(2x10=20)

1. Describe the objectives and functions of National HIV and AIDS control program.
2. Explain in detail about National leprosy control program.

Short Notes

(7x5=35)

3. Balanced diet.
4. Personal hygiene and healthcare.
5. Explain prevention and control of cholera.
6. Explain prevention and control of acute respiratory infections.
7. Pulse polio program.
8. National TB control program.
9. Explain the objectives and functions of the universal immunization program.

Answer Briefly

(10x2=20)

10. What are the social problems of sick.
11. Mention the prevention of lymphatic filariasis.
12. Discuss the control of diabetes mellitus.
13. Discuss the functions of National program for control of blindness.
14. National tobacco control program.
15. Mention the role of WHO in the Indian national health program.
16. Discuss various methods for improvement in rural sanitation.
17. What are the health promotions in schools.
18. Mention the prevention measure for malaria.
19. What are the principles of influenza control.

QP Code: 823006

Reg. No.....

**Eighth Semester B. Pharm Degree Regular/Supplementary
Examinations July 2023
Pharmaceutical Marketing
(2017 Scheme)**

Time: 3 Hours

Max. Marks: 75

- *Answer all questions to the point neatly and legibly* • *Do not leave any blank pages between answers* • *Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together* • *Leave sufficient space between answers*
- *Draw diagrams wherever necessary*

Essays

(2x10=20)

1. Explain the various strategies followed in price management in pharmaceutical industry
2. Explain the duties of Professional Sales Representatives (PSR). Add a note on compensation and future prospects of PSR's

Short Notes

(7x5=35)

3. Market segmentation and targeting
4. Role of consumerism in emerging pharma marketing
5. Determinants of promotional mix
6. Criteria for selection of appropriate channels for distribution management
7. Augmented product concept in Pharma sector
8. Horizontal marketing in Pharma sector
9. Boston matrix in product portfolio analysis

Answer Briefly

(10x2=20)

10. Mention the process followed for calculation and fixation of prices in Drug Price Control Order
11. Enlist the various qualitative aspects of market research
12. Mention the constitution and activities of National Pharmaceutical Pricing Authority
13. Analyse the importance of market research in understanding the pharma market
14. State any two advantages of advertising and personal selling in drug promotion
15. Discuss the importance of packing and labeling on the product
16. Highlight the role played by pharmacist in rural marketing
17. Write notes on physical distribution system
18. List the various methods for promotion of pharmaceutical products
19. Write a note on the demographic description of the pharma market

QP Code: 824006

Reg. No.....

**Eighth Semester B. Pharm Degree Regular/Supplementary
Examinations July 2023
Pharmaceutical Regulatory Science
(2017 Scheme)**

Time: 3 Hours

Max. Marks: 75

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Draw diagrams wherever necessary*

Essays

(2x10=20)

1. Explain in detail about Investigational New Drug (IND) its Modules and sections from I to V in Common Technical Document (CTD).
2. Explain the difference between clinical studies conducted for Generic and Innovator drugs.

Short Notes

(7x5=35)

3. Purple book and its uses.
4. Explain the importance of Pharmacovigilance and its monitoring procedure in post marketing.
5. Drug master file.
6. Differentiate paper submission, eCTD and non e-CTD electronic submissions (NeeS).
7. Regulatory requirements of preclinical studies.
8. Explain the clinical stages of generic drug development.
9. ASEAN common Technical Document (ACTD) with country specific guidance on any two Asian countries.

Answer Briefly

(10x2=20)

10. General principles applied in clinical research protocol development.
11. Ethics of randomised clinical trials.
12. Reasons and benefits of implementing informed consent in clinical trials.
13. GCP and its importance in clinical trials.
14. What are the timelines for Abbreviated New Drug Application (ANDA) approval.
15. Federal register.
16. Code of Federal Regulations (CFR) 21CFR.
17. Category and types of applications in Australia, Japan and Canada.
18. List of Technical documents required for Export of Pharmaceuticals.
19. What are the obligations from Investigators and monitors while conducting clinical studies.

QP Code: 825006

Reg. No.....

**Eighth Semester B. Pharm Degree Regular/Supplementary
Examinations July 2023
Pharmacovigilance
(2017 Scheme)**

Time: 3 Hours

Max. Marks: 75

- *Answer all questions to the point neatly and legibly* • *Do not leave any blank pages between answers* • *Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together* • *Leave sufficient space between answers*
- *Draw diagrams wherever necessary*

Essays

(2x10=20)

1. Discuss in detail about WHO International Drug Monitoring Programme
2. Define and classify ADRs. Write in detail about management of ADR

Short Notes

(7x5=35)

3. Explain about Detection and Reporting of ADR
4. CIOMS Form
5. Describe about the role of D & C Act in pharmacovigilance
6. Drug safety evaluation in pregnancy and Lactation
7. Explain about Good Clinical Practice in Pharmacovigilance
8. Clinical phase of safety data generation
9. Active surveillance

Answer Briefly

(10x2=20)

10. Give the Importance of Vaccine Pharmacovigilance
11. Name some specialized resources for ADRs
12. MedDRA
13. Daily defined doses
14. Mention about Eudravigilance Dictionary
15. What are Case-series
16. Pharmacovigilance Planning
17. Contract research organization in Pharmacovigilance
18. Give ICH guidelines about Periodic Safety Update Reports
19. Stimulated reporting

QP Code: 826006

Reg. No.....

**Eighth Semester B. Pharm Degree Regular/Supplementary
Examinations July 2023
Quality Control and Standardization of Herbals
(2017 Scheme)**

Time: 3 Hours

Max. Marks: 75

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Draw diagrams wherever necessary*

Essays

(2x10=20)

1. Discuss the quality assurance in herbal drug industry of GMP in traditional system of medicine.
2. Discuss the EU guidelines for quality control of herbal drugs.

Short Notes

(7x5=35)

3. Write a note on GLP.
4. Discuss the applications of chromatography in the standardization of herbal products.
5. Ash value and its significance.
6. What is the importance of physical constants in the evaluation of herbal drugs.
7. Explain the role of biological markers in the standardization of herbal drugs.
8. elaborate stability testing of herbal medicines.
9. Describe the procedure to determine the swelling index of herbal drug.

Answer Briefly

(10x2=20)

10. What are standardized extracts.
11. Define stomatal number.
12. list out few significant WHO guidelines for safety monitoring of herbal medicines.
13. Chemical tests for alkaloids.
14. Give two examples of saponin drugs.
15. What is Rf value.
16. Importance of foaming index.
17. Morphological evaluation of crude drug.
18. Define GACP.
19. Name any four adsorbents used in TLC.

QP Code: 827006

Reg. No.....

**Eighth Semester B. Pharm Degree Regular/Supplementary
Examinations July 2023
Computer Aided Drug Design
(2017 Scheme)**

Time: 3 Hours

Max. Marks: 75

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Draw diagrams wherever necessary*

Essays

(2x10=20)

1. Explain the effects of lipophilic, steric and electronic parameters in QSAR studies
2. What is *de novo* drug design. Explain the various ligand assembly and design strategies used in *de novo* drug design

Short Notes

(7x5=35)

3. Write a note on force fields used in molecular mechanics and its applications
4. Explain different methods used in pharmacophore modelling
5. Explain energy minimization methods in search of different conformations of a molecule
6. What is molecular dynamics. Explain the methodology and applications of molecular dynamic simulations
7. Explain the different stages involved in rational drug discovery process
8. Write a note on non-classical bioisosteres with examples
9. Explain molecular docking process and its applications

Answer Briefly

(10x2=20)

10. How a homology modelled protein structure is evaluated
11. What is role of cheminformatics in drug discovery
12. What are the various lead optimization strategies used in drug discovery
13. Explain Hansch Analysis
14. Compare and contrast structure based drug design and ligand based drug design
15. Applications of quantum mechanics in drug design
16. What is Hammett substituent constant and give its significance
17. How metabolic studies are useful in discovering new lead molecules
18. 3D QSAR
19. Enlist various search algorithms used in molecular docking

QP Code: 828006

Reg. No.....

**Eighth Semester B. Pharm Degree Regular/Supplementary
Examinations July 2023
Cell and Molecular Biology
(2017 Scheme)**

Time: 3 Hours

Max. Marks: 75

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Draw diagrams wherever necessary*

Essays

(2x10=20)

1. Explain the types of RNA and bio-synthesis of RNA.
2. Give a detail account on cell cycle and its phases.

Short Notes

(7x5=35)

3. Discuss the function of cell surface receptor.
4. Describe the ultra-structure of plasma membrane.
5. Structure of Proteins.
6. Explain the different types of Ribosomes.
7. Give the function of regulatory genes.
8. Different between mitosis and meiosis.
9. Applications of cell and molecular biology.

Answer Briefly

(10x2=20)

10. What are the functions of DNA.
11. Define translation.
12. Steps involved in protein synthesis.
13. Define cell and molecular biology.
14. Define protein kinases.
15. Write the properties of cell and cell membrane.
16. Define oncogene.
17. Define prokaryotic cell.
18. What is endocrine signaling.
19. Define DNA polymerase.

QP Code: 829006

Reg. No.....

**Eighth Semester B. Pharm Degree Regular/Supplementary
Examinations July 2023
Cosmetic Science
(2017 Scheme)**

Time: 3 Hours

Max. Marks: 75

- *Answer all questions to the point neatly and legibly* • *Do not leave any blank pages between answers* • *Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together* • *Leave sufficient space between answers*
- *Draw diagrams wherever necessary*

Essays

(2x10=20)

1. What are hair dyes. Classify and explain in detail about its formulation.
2. Write various benefits of henna and amla in hair care.

Short Notes

(7x5=35)

3. Define classify and give applications of rheology modifiers.
4. Write about surfactant. Add a note on its applications.
5. Explain formulation consideration for toothpaste.
6. Explain BIS specifications for shampoo.
7. Explain in detail about the causes leading to dry skin.
8. Explain mechanism of action of antiperspirant and deodorant.
9. Explain in detail about hair growth cycle.

Answer Briefly

(10x2=20)

10. Write in short about Cosmetics and Cosmeceuticals.
11. Define emollient.
12. Classify shampoos. Write its applications in hair care.
13. Define TEWL. How it is measured.
14. Structure of skin.
15. Measurement of hair tensile strength.
16. Enlist various dental applications of neem.
17. Enlist the ingredients used in Mouth wash.
18. Classification of Sunscreens.
19. Miliaria.

QP Code: 830006

Reg. No.....

**Eighth Semester B. Pharm Degree Regular/Supplementary
Examinations July 2023
Experimental Pharmacology
(2017 Scheme)**

Time: 3 Hours

Max. Marks: 75

- Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space
- Answer all parts of a single question together • Leave sufficient space between answers
- Draw diagrams wherever necessary

Essays

(2x10=20)

1. What are the objectives of research methodology. Write the steps involved in the process of a systematic literature review.
2. Briefly explain:
 - PTZ – induced convulsions model in mice.
 - Techniques of euthanasia in common laboratory animals.

Short Notes

(7x5=35)

3. Classify common laboratory animals. Mention the applications of *danio rorio* in biomedical research.
4. Explain MTT assay.
5. *Mus musculus* as a common laboratory animal. Mention the bleeding and anesthesia techniques in *Rattus norvegicus*.
6. Describe the breeding methods in rodents.
7. Principle and procedure for Tail suspension test for antidepressant activity.
8. Explain the *in-vivo* method of sodium nitrite-induced amnesia test.
9. Explain the CPCSEA guidelines on maintenance of laboratory animals.

Answer Briefly

(10x2=20)

10. Differentiate rodents and non-rodents.
11. Compare Wistar rats and Sprague-Dawley rats.
12. Enlist four screening methods for CNS stimulants.
13. Choice of rabbit in toxicological research.
14. Uses and types of student's t-test.
15. Procedure for collection of blood from cardiac puncture in rat.
16. Procedure for inhibition of apomorphine climbing in mice model.
17. Write the difference between *in-vitro* and *in-vivo* preclinical studies.
18. Concepts of '3Rs' in preclinical studies.
19. Differentiate in-bred and outbred-strains.

QP Code: 831006

Reg. No.....

**Eighth Semester B. Pharm Degree Regular/Supplementary
Examinations July 2023
Advanced Instrumentation Techniques
(2017 Scheme)**

Time: 3 Hours

Max. Marks: 75

- Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space
- Answer all parts of a single question together • Leave sufficient space between answers
- Draw diagrams wherever necessary

Essays

(2x10=20)

1. What are the factors affecting chemical shift in HNMR. Explain.
2. Write a note on calibration of UV – Visible spectrophotometer.

Short Notes

(7x5=35)

3. ¹³C NMR.
4. What are soft and hard ionization in mass spectrometry. Give two examples each. List the advantages and disadvantages of each.
5. How does a quadrupole analyser work.
6. Explain the pharmaceutical applications of mass spectroscopy.
7. What are two types of differential scanning calorimeters. Differentiate between them.
8. Explain the calibration of electronic balance.
9. Explain the different methods of radio immune assay.

Answer Briefly

(10x2=20)

10. In NMR, what does the number of signals and position of signals signify.
11. Write about rotating crystal technique in x-ray diffraction method.
12. What is Larmor frequency and what is its importance in NMR spectroscopy.
13. What is a shim coil and what is its role in NMR spectrometer.
14. Why mass spectrometer is maintained under high vacuum.
15. Explain and classify thermal methods of analysis.
16. Why purging system is required in thermal analysis.
17. List the applications of X ray powder diffraction.
18. Differentiate H-NMR and C¹³ – NMR.
19. Name the radiation source used in flame photometer.
