QP Code: 821006 **Reg. No…….**

Eighth Semester B. Pharm Degree Regular Examinations May 2022

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. Differentiate between parametric and nonparametric tests. Briefly explain any three parametric and non-parametric tests each used in hypothesis testing.
2. Describe various components of a thesis. Add a note on publication ethics.

Short Notes **(7x5=35)**

3. Define and detail the primary and secondary data with examples.
4. Write an ideal format for research protocol preparation.
5. Write the difference between references and bibliography.
6. Explain various study designs in epidemiology.
7. What are measures of central tendency. Explain how it is calculated.
8. Compare graphical representation of data with representation in table form.
9. Explain inferential statistics. Write note on different models.

Answer Briefly **(10x2=20)**

10. Define sample and population.
11. Define probability.
12. Define statistics.
13. Characteristics of good hypothesis.
14. Define analysis of variance.
15. Name some software used in bio statistics.
16. Write difference between research methods and methodology.
17. Define research gap.
18. Different types of sampling techniques.
19. What is type I and type II errors in research.

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QP Code: 822006 **Reg. No…….**

Eighth Semester B. Pharm Degree Regular Examinations May 2022
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. Explain in detail on various vitamin deficiency disorders.
2. Write the general principles for prevention and control of malaria and cholera.

Short Notes **(7x5=35)**

3. Write various protein energy malnutrition disorders.
4. Explain the general principles of prevention and control of SARS.
5. Explain the general principles of prevention and control of influenza.
6. Explain on drug addiction and drug abuse.
7. Briefly explain on national mental health program.
8. National program for the healthcare for elderly.
9. Discuss about national leprosy control program.

Answer Briefly **(10x2=20)**

10. What are the impacts of urbanization on health.
11. Mention avoidable habits.
12. Discuss the control of hypertension.
13. Mention the objectives of pulse polio program.
14. National AIDS control program.
15. Social health program.
16. Mention the community services in rural health.
17. Mention any vector borne diseases with their causative agents.
18. Discuss the prevention methods of chikungunya.
19. Explain health.

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QP Code: 823006 **Reg. No…….**

Eighth Semester B. Pharm Degree Regular Examinations May 2022
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 importance of market research in pharmaceutical market analysis
2. Explain the various promotional techniques for over the counter (OTC) products

Short Notes **(7x5=35)**

3. Pharmaceutical distribution channels
4. Role of retailers in pharmaceutical marketing
5. Promotional mix
6. Selection, training and evaluation of a professional sales representative
7. Objectives and strategies in drug pricing
8. Importance of vertical and horizontal marketing in Pharma sector
9. Future prospects of professional sales representatives

Answer Briefly **(10x2=20)**

10. Define product life cycle and mention its importance
11. Differentiate the qualitative and quantitative aspects of market research
12. Mention the importance of product portfolio analysis
13. Define marketing. Highlight the scope of marketing
14. Recall the formula for calculating the retail price of the drug as mentioned in Drug Price Control Order
15. State the importance of global marketing
16. Define Brand. Mention the need for product branding
17. Highlight the role played by retail pharmacist in pharmaceutical marketing
18. Enlist the tasks involved in physical distribution system
19. Methods of analysing consumer behavior.

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QP Code: 824006 **Reg. No…….**

Eighth Semester B. Pharm Degree Regular Examinations May 2022
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. Write about New drug Application registration in US . Classify its sections. Mention NDA forms.
2. Write in detail about pre-clinical and clinical studies conducted for Innovator drug registration.

Short Notes **(7x5=35)**

3. What are the stages of Generic drug product development.
4. Explain the procedure for export of pharmaceutical products.
5. Explain the approval process of investigational new drug (IND).
6. Structure of eCTD.
7. Explain the role of placebo in clinical trials.
8. Drug safety monitoring
9. Contents of Orange book and its applications.

Answer Briefly **(10x2=20)**

10. Write about Drug Master File (DMF) and its type of applications in US and EU.
11. Write the formation and working procedure of Institutional Review Board (IRB).
12. Write the importance of informed consent form.
13. Code of federal regulation.
14. What is abbreviated new drug application.
15. Write the importance of pre-clinical studies in drug development.
16. What are the timelines for ANDA from initial filing to final approval.
17. What is the organizational structure of drug regulatory authority of Australia.
18. What are the different categories and types of applications in US and EU.
19. What are the obligations from sponsors while conducting clinical trials.

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QP Code: 825006 **Reg. No…….**

Eighth Semester B. Pharm Degree Regular Examinations May 2022
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 the roles of Pharmacist in the management and monitoring of ADRs.
2. Describe the genesis and development of Pharmacovigilance in India.

Short Notes **(7x5=35)**

3. Explain the Hartwig's severity assessment of adverse drug reactions.
4. Describe good clinical practice in pharmacovigilance studies. .
5. Discuss toxicity studies in schedule Y
6. Explain the objectives of ICH and discuss in detail about its organization.
7. Explain communication in drug safety crisis management
8. Write the ICH standards for individual case safety reports (ICSRs)
9. Explain the functions of Contract Research Organisations in pharmacovigilance

Answer Briefly **(10x2=20)**

10. Cohort study.
11. Define ADRs
12. What are the anatomical classification of drugs
13. What is drug event monitoring in active surveillance.
14. What is the clinical phase in drug development.
15. What are the CIOMS requirements for ADR reporting.
16. What is the role of genes in ADRs.
17. What are the drug safety evaluation in Geriatrics.
18. Passive surveillance.
19. What are CIOMS working groups.

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QP Code: 826006 **Reg. No…….**

Eighth Semester B. Pharm Degree Regular Examinations May 2022

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. Describe the various approaches for evaluating the intended utilization of commercial crude drugs.
2. Discuss the various chromatographic methods available for standardizing herbal products

Short Notes **(7x5=35)**

3. Explain herbal dosage forms using appropriate examples
4. Describe the methods for determining the foaming index
5. GMP in traditional system of medicine
6. Outline the scope of the ICH guideline on quality of herbal medicine
7. Define the term "Medicinal preparation of plant material." Rationalize the objective of herbal medicine safety and efficacy
8. Describe how to prepare a new drug application
9. Chemical markers in standardization of herbal products

Answer Briefly **(10x2=20)**

10. Define the following terms; “Processed plant material” and “Characterizising compound”
11. Test for identification of Tannins and Phenolic compounds
12. Significance of Ash values
13. Define stability
14. Application of HPTLC in standardization of herbal products
15. Biological evaluation of crude drugs
16. Objectives of GAP
17. Detection of essential oil
18. Aflatoxins
19. Detection of pesticidal residues in herbal drugs

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QP Code: 827006 **Reg. No…….**

Eighth Semester B. Pharm Degree Regular Examinations May 2022
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 Hansch analysis and discuss how it can be used in predicting biological activity.
2. Discuss in detail about various parameters used in QSAR.

Short Notes **(7x5=35)**

3. Lipinsky's rule of five, explain.
4. Applications of free Wilson analysis in drug design.
5. Discuss about the various energy minimization techniques.
6. Describe about the scoring techniques in molecular docking.
7. Discuss the history of drug discovery.
8. Explain Hammett equation and Steric effects
9. Narrate the concept of pharmacophore based virtual screening.

Answer Briefly **(10x2=20)**

10. Role of computer applications in lead optimization.
11. Electronic effect with an example.
12. Write the limitations of free Wilson analysis.
13. Define pharmacophore.
14. Define molecular mechanics.
15. Define molecular docking.
16. How can you identify the binding sites.
17. Give the applications of quantum mechanics.
18. Define bioinformatics.
19. List out any two ADME and pharmaceutical data bases.

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QP Code: 828006 **Reg. No…….**

Eighth Semester B. Pharm Degree Regular Examinations May 2022
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 central dogma, components and mechanism of protein synthesis.
2. Explain the Watson and Crick model of DNA. Add a note on different forms of DNA polymorphism.

Short Notes **(7x5=35)**

3. Highlight the functions of lysosomes.
4. DNA damage and repair mechanism.
5. Outline the types of RNA and their functions.
6. Explain the process of transcription and add notes on its inhibitors.
7. Cellular Protein synthesis.
8. What are the various stages of meiotic prophase I. Enumerate the chromosomal events during each stage.
9. Describe the receptors for cell signals.

Answer Briefly **(10x2=20)**

10. Define operon
11. Define primosome.
12. Define nucleosomes.
13. Define cell.
14. Define peroxisomes.
15. Label chromosome and write any two functions.
16. Give two main differences between prokaryotic and eukaryotic DNA replication.
17. Define transcription.
18. Zinc finger motif.
19. Define siRNA.

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QP Code: 829006 **Reg. No…….**

Eighth Semester B. Pharm Degree Regular Examinations May 2022
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. Describe the structure of hair. Add a note on hair growth cycle.
2. Explain the principles of formulation and building blocks of oral care products.

Short Notes **(7x5=35)**

3. Classifications and application of cosmetic excipients.
4. Formulation and advantages of vanishing creams in cosmetics.
5. Sun protection factor (SPF).
6. Measurement of trans-epidermal water loss in cosmetics.
7. Structure of skin and causes for dry skin.
8. Explain body odour. Explain the mechanism of antiperspirants.
9. Prickly heat and wrinkles.

Answer Briefly **(10x2=20)**

10. Functions of skin.
11. Alopecia.
12. Surfactants used in antidandruff shampoo.
13. Abrasives and opacifier in toothpaste.
14. Application of aloe vera in skincare.
15. Bureau of Indian Standards (BIS).
16. Define cosmetics.
17. Hair dyes.
18. Teeth whitening
19. BIS specification for skin cream.

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QP Code: 830006 **Reg. No…….**

Eighth Semester B. Pharm Degree Regular Examinations May 2022
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. Explain two methods to screen anti-ulcer activity of test compounds.
2. Write in detail, the principle and procedure of Eddy's hot plate and writhing tests.

Short Notes **(7x5=35)**

3. A preclinical model to test anti-depressant activity of test compounds.
4. Explain the 3-Rs in research involving animals. List the ways to implement them.
5. One rodent model to test anti-dyslipidaemic activity.
6. Metabolic cages and its applications in experimental pharmacology.
7. A procedure to test local anaesthetic activity using a rabbit model.
8. With suitable examples, explain null and alternate hypotheses in research.
9. Explain how sympathomimetics can show either an increase or decrease in dog blood pressure.

Answer Briefly **(10x2=20)**

10. What is the importance of sham control.
11. List two applications each, for rats and rabbits in experimental pharmacology.
12. Write about two CPCSEA approved methods of euthanasia in rodents.
13. Write the characteristic feature and application of ob/ob mice.
14. Two routes of blood collection from rats.
15. A test drug abolishes light reflex after instilling in the eye. Write inference about the activity of the test drug.
16. Name two classes of compounds that can contract uterine smooth muscles.
17. Write the applications of actophotometer.
18. When do you use paired 't' test to analyze data.
19. Write the difference between *in-vitro* and *in-vivo* preclinical studies.

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QP Code: 831006 **Reg. No…….**

Eighth Semester B. Pharm Degree Regular Examinations May 2022
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. Explain the principle and instrumentation of mass spectroscopy.
2. What are the different types of liquid – liquid extraction. Explain with at least two major advantages of each.

Short Notes **(7x5=35)**

3. Which types of compounds are active in NMR spectroscopy and why.
4. What is chemical shift and how is it helpful in interpreting NMR spectrum.
5. What are the following in Mass Spectrometry.
    - Metastable peak
    - Molecular ion peak
    - M+ peak
    - Daughter ion peak
6. What is the role of matrix used in MALDI. List the desirable characteristics of a matrix to be used. Name some matrices used in conventional MALDI technique.
7. Fast Atom Bombardment ionization technique.
8. Thermobalance used in Thermo Gravimetric Analysis.
9. How is HPLC pump calibrated. Explain.

Answer Briefly **(10x2=20)**

10. How many signals will CH_3CH_2OH show in proton NMR and why.
11. What is gyromagnetic ratio.
12. Water and ethanol are the most common solvents used in NMR work. Is it true. Why or why not.
13. Amongst methyl chloride and methyl bromide, which one will a higher chemical shift and why.
14. Bragg's Equation in X-ray diffraction
15. What are the properties measured in Differential Thermal Analysis and Differential Scanning Calorimetry.
16. What is x-ray crystallography.
17. What is specificity in analytical method validation and how is it checked.
18. What is counter current extraction.
19. Limitation and applications of Radio immuno assay

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