Code No: G-13061/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Make-up) Examination, November 2024

Subject: Biostatistics & Research Methodology

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Give importance of biostatistics in Pharmacy.
2. Hardness of 6 tablets is found as 6,8,5,7,9 and 11. Find mean and median.
3. Find the mode and range for the angle of repose values of granules given as 13,18,13,14,13,16,14, 21 and 13.
4. Define the term probability.
5. What is meant by sample?
6. What is the need for Research?
7. Mention different types of graphs.
8. What is meant by Hypothesis?
9. Give different statistical tools available in EXCEL
10. What are the advantages of factorial design?

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Discuss on report writing in research methodology.
12. What is parametric test? Explain one way ANOVA in detail.
13. Give informative notes on (A) Correlation (B) Plagiarism

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. The relative humidity values in a tablet production department of a pharmaceutical company from Monday to Saturday were recorded as 60,62,65,69,75 and 65.Calculate standard deviation.

15. Twenty hard gelatin capsules were examined for its physical properties. The frequency with a given number of defects per capsule is given. What is the probability of finding a capsule chosen at random contains 3 or more surface defects?

Number of Defects	0	1	2	3	4	5	6
Frequency	4	3	5	2	4	1	1

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16. Write notes on any one non-parametric test.
16. What is sampling? Explain different types of sampling techniques.
17. Write about different types of graphs.
18. Explain the features of MINITAB in brief.
19. Write about experimental deisgn?
20. Obtain the line of regression of Y on Xfor the following data

Age in Yrs (X)	66	38	56	42	72	36	63	47	55	45
Blood Pressure (Y)	145	124	147	125	160	118	149	128	150	124

21. Explain 2^2 factorial design.
22. Give informative notes on response surface methodology.

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Code No: G-13062/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Make-up) Examination, November 2024
Subject: Social and Preventive Pharmacy

Time: 3 Hours **Max.Marks:75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write a note on concept of public health?
2. What is Balanced diet?
3. What is drug addiction? Give few examples.
4. Write a note on prevention and control of hypertension?
5. What are the functions of PHC?
6. Write the objectives of pulse polio programme?
7. What are the strategies of national tobacco control programme?
8. Write a note on Impact of urbanization on health and disease?
9. Explain different types of diabetes mellitus?
10. Write a note on improvement in rural sanitation?

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. (a) Explain various socio-cultural factors related to health and disease.
    (b) Write a note on personal hygiene and healthcare.

12. (a) Write about the transmission, signs &symptoms, and treatment of Pneumonia.
    (b) Write a note on Universal immunization programme.

13. (a) Write a note on Social health programme.
    (b) Explain about the health promotion schemes in school.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Write a note on Vitamin deficiencies.
15. Explain malnutrition and its prevention.
16. Write a note on prevention and control of Drug addiction.
17. Describe the various roles of WHO in Indian national programs.
18. Write a note on Integrated Disease Surveillance Project (IDSP).
19. Write a note on National Family welfare programme.
20. Write a note on general principles of prevention and control of Dengue.
21. Write a note on objectives, functions and outcomes of TB control programme.
22. Write the risk factors, diagnosis and treatment of Cancer.

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Code No: G-13063/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Make-up) Examination, November 2024
Subject: Pharma Marketing Management (Elective –I)

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the question. **(10 x 2 = 20 Marks)**

1. Distinguish between marketing and selling.
2. Give an overview of Drug Price Control Order.
3. What is market segmentation and targeting?
4. What is sampling in promotion?
5. Define consumerism.
6. What is product branding?
7. What is Physical distribution management?
8. What are the objectives of Pricing?
9. What are the future prospects of Professional sales representative?
10. Write about product life cycle.

PART – B

Note: Answer any two question. **(2 x 10 = 20 Marks)**

11. Write in detail about packaging and labeling decisions.
12. Discuss about Vertical and Horizontal Marketing.
13. Write a note on Pharmaceutical marketing channels.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. How a business management person maintains public relations?
15. What are the online promotional techniques for OTC products?
16. What are the duties of Professional sales representative (PSR)?
17. Write a note on Product decision
18. Explain about the patient's choice of physician and retail pharmacist.
19. Write about emerging concepts in marketing.
20. Give an overview of personal selling and advertising.
21. Write about global marketing.
22. What are the different components in marketing environment?

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Code No: G-13064/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Make-up) Examination, November 2024

Subject: Pharmaceutical Regulatory Science (Elective - I)

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define (a) DMF (b) CTD.
2. Explain pre-clinical studies.
3. Define concept of generics.
4. Explain orange book, federal register.
5. What are Exclusion criteria in clinical trials.
6. Define Organogram of CDSCO.
7. What is clinical trial. Define pharmacovigilance?
8. Describe Objectives of regulatory affairs.
9. Write about Regulatory authorities of Canada.
10. What is good clinical practice

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Write about drug development process.
12. Write a note on ANDA.
13. Explain in detail stages of drug delivery.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Briefly discuss CTD and eCTD.
15. Explain the technical documentation required for regulation of Indian drug product.
16. What is Orange book? Explain.
17. Write a note on 21 CFR.
18. Explain the GCP obligations of investigators.
19. Describe in detail new drug approval process along with its documentation requirements as per USFDA.
20. Describe formation and working procedure of independent ethics committee.
21. Briefly explain about India regulatory authority
22. What is electronic common technical document?

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Code No: G-13065/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Make-up) Examination, November 2024
Subject: Pharmacovigilance (Elective - I)

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define the adverse drug reaction.
2. What are CIOMS working groups?
3. What is phase IV of clinical trials?
4. Write a short note on Harmonization.
5. Discuss the PSUR.
6. What is eudravigilance.
7. Explain ICH Steering Committee.
8. What is teratogenicity? Give examples.
9. Illustrate the importance of Pharmacogenomics.
10. Describe common technical document.

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Differentiate between adverse drug reactions and adverse events with suitable examples. Explain the mechanisms of Type-A and Type-B ADRs.

12. (a) Write a note on MedDRA.
    (b) Write a note on Pharmacovigilance program of India (PvPI).

13. Explain the criteria for Drug safety evaluation in Pediatric population.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Describe in details CDSCO in India.
15. Explain the Schedule Y of Drugs and Cosmetics Act in brief.
16. Write about CROs in pharmacovigilance.
17. Discuss Naranjo's and WHO causality scales.
18. Write a note on post approval expedited reporting.
19. What is CIOMS? Enlist various CIOMS working groups and give their functions.
20. Discuss in brief the objectives of ICH guidelines.
21. Explore the Pre- marketing and Post marketing clinical trials.
22. Explain about eudravigilance medicinal product dictionary.

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Code No: G-13067/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Make-up) Examination, November 2024
Subject: Computer-Aided Drug Design (Elective-I)

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Differentiate among lead, drug candidate & drug.
2. Explain metabolism-based lead discovery with an example.
3. What is 3D QSAR technique? Give examples.
4. Explain the significance of the partition coefficient.
5. What is pharmacophore mapping?
6. Define *de novo* drug design.
7. Write the applications of cheminformatics tools in drug design.
8. What is the importance of ADME databases? Give a few examples.
9. Define the terms molecular mechanics and quantum mechanics.
10. What is conformational analysis?

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain the methodology involved in Hansch QSAR analysis with its advantages & disadvantages. Highlight its role in predicting biological activity with a model QSAR equation.

12. Describe the concept of docking-based virtual screening in drug design.

13. Explain various stages involved in drug discovery and development.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Describe the serendipitous discovery of drugs.

15. Classify bioisosteres with examples.

16. Describe Free-Wilson QSAR analysis with its advantages and disadvantages.

17. Discuss the methodology involved in CoMFA.

18. Explain Lipinski Rule of Five. How does it help in Drug design?

19. Explain chemical databases with suitable examples. Give their importance in drug design.

20. Describe the applications of bioinformatics tools in drug design.

21. Write about various energy minimization methods.

22. Write the applications of quantum mechanics in drug design.

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Code No. G-13066/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Make-up) Examination, November 2024

Subject: Quality Control and Standardization of Herbals (Elective-I)

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write about traditional system of medicine.
2. Write the biological method of crude drug evaluation with examples.
3. Explain the significance of ICH guidelines.
4. Write the test procedure of predinisolone phosphate.
5. How do you authenticate medicinal plants.
6. Write a note on cGMP.
7. Explain Lycopodium Spore Method – Formula.
8. Write a note on long term toxicity test.
9. What are weedicides? Mention two examples.
10. Explain the stability testing of herbal medicine.

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain different requirements to follow Good manufacturing practice? Why it is followed in herbal drug industry.
12. Discuss the guidelines given by Europian medicine agency on quality of traditional herbal medicine.
13. Write the comparison of various famous herbal pharmacopoeias.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Write a note on good collection practices for herbal drugs.
15. Write the GMP requirement for herbal medicine.
16. Explain the preparation of document for new drug application.
17. Discuss the protocol for clinical guidelines in herbal medicine.
18. Enumerate various aspects of GLP.
19. Write the applications of chromatography technique in the standardization of herbal drugs.
20. Write briefly about stability studies of herbal medicinal products.
21. Describe the basic test for medicinal plant materials.
22. Write a note on research guidelines for evaluating safety and efficacy of herbal medicine.

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Code No: G-13068/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Make-up) Examination, November 2024
Subject: Cell & Molecular Biology (Elective-II)

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. What are the basic features of cell theory?
2. Describe prophase-I of meiosis in brief.
3. Write about physical properties of DNA.
4. Write the functions of rRNA and mRNA.
5. What are essential and non-essential amino acids? Give examples.
6. Give a brief classification of proteins.
7. What are 'Restriction endonucleases' and write their function.
8. Enlist various enzymes used in genetic engineering.
9. Define ligands and receptors.
10. Enlist important intracellular signalling pathways.

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain in detail about the properties of cell membrane. Differentiate between Prokaryotic and Eukaryotic cell.
12. Describe in detail about regularities in Protein pathway.
13. Describe Southern blotting technique and its applications.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Briefly describe various components of a typical prokaryotic cell.
15. Describe Transcription and Translation.
16. Write the structure and functioning of DNA.
17. Describe types of RNA and flow of molecular information.
18. Describe any five colour reactions of proteins.
19. Explain positive control and significance of protein synthesis.
20. Write a note on vectors used in recombinant DNA technology.
21. Write short notes on genomic analysis.
22. Write about cell signalling and explain receptors for cell signals.

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Code No: G-13069/PCI

FACULTY OF PHARMACY
B. Pharmacy VIII - Semester (PCI) (Makeup) Examination, November 2024
Subject: Cosmetic Science (Elective-II)

Time: 3 Hours **Max.Marks:75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write a note on cosmetics as Quasi and OTC drugs.
2. Write a note on hair growth cycle.
3. Write a note on preservatives used in cosmetics.
4. Write a note on hair oils in hair care cosmetics.
5. Write a note on turmeric in skin care.
6. Write a note on mouthwashes.
7. Write the role of clove in oral care.
8. Write a note determination of skin colour.
9. What are the reasons for dry skin and how to prevent it?
10. Write a note on reasons and prevention of hair fall.

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Write a note on following excipients with examples.
    (i) Surfactants (ii) Humectants (iii) Rheology modifiers (iv) Emollients
12. Write a note on Sebumeter, Corneometer, Tewameter (TEWL) in cosmetic evaluation.
13. Write the causes and prevention of Blemishes, Wrinkles, Acne, Prickly heat and Body Odour.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Classify cosmetics and cosmeceuticals with examples.
15. Write a note on basic structure of skin and formulation of Moisturizing cream.
16. Write the principle involved in formulation of cold cream and vanishing cream.
17. Write the formulation of toothpaste for bleeding gums and sensitive teeth.
18. What is SPF? Classify the sunscreen formulations with examples.
19. Write a note on conditioning shampoo, antidandruff shampoo in hair care.
20. Write a note on Henna and Amla in hair care. Write about soaps and syndet bars.
21. Write formulation and mechanism of action of Antiperspirants & deodorants.
22. Write about soaps and syndet bars.

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Code No: G-13072/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII-Semester (PCI) (Make-up) Examination, November 2024

Subject: Experimental Pharmacology
Paper: (Pharmacological screening methods) (Elective-II)

Time: 3 Hours **Max.Marks:75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. What are the methods used for preparation of drugs suspension?
2. What are the applications of mutant animals?
3. Explain the significance of sham negative group.
4. Write the different techniques for Euthanasia.
5. Explain the study designs involved in preclinical experiment.
6. Define a. Sedatives b. Hypnotics.
7. Write a short note on review of literature.
8. Give the examples of a. Mydriatics b. Miotics.
9. Mention the composition of IAEC.
10. Write the objectives of OECD guidelines.

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Describe any three screening methods for parasympatholytic drugs.
12. Explain the various preclinical screening methods for anti-inflammatory drugs. Give any two in-vivo methods.
13. Describe any three preclinical screening methods of anti-cancer drugs.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain the different methods for collection of blood in laboratory animals.
15. What is the significance of statistical analysis of student t test?
16. Mention the objectives of CPCSEA. Write the composition and responsibilities of IAEC.
17. Describe on in vivo screening model for anti-epileptic drugs.
18. Explain any one preclinical screening method for diuretic activity.
19. Explain students ‘t’ tort and one way ANOVA.
20. Mention briefly about any two preclinical screening methods for anti-parkinsonism activity.
21. Explain one preclinical screening method for anti-dyslipidemic activity.
22. Enumerate any two preclinical screening methods for anti-asthnatic activity.

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Code No: G-13070/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Make-up) Examination, November 2024
Subject: Dietary Supplements and Nutraceuticals (Elective-II)

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. What are probiotics and give examples.
2. Write the difference between natural and synthetic anti oxidants.
3. Give the occurrence and medical benefits of Lycopene.
4. Explain the importance of nutraceuticals in weight control.
5. Write about dietary fibres as functional food ingredients.
6. Give the source, chemical nature and uses of Oats and Rice bran.
7. Explain about enzymatic antioxidant defence.
8. Explain the role of melatonin and glutathione peroxidase.
9. Write about AGMARK on food safety.
10. What are tocopherols and give examples.

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain in detail the effect of processing, storage and interactions of various environmental factors on the potential of neutraceuticals.
12. (a) Explain the role of Glutathione peroxidase and Superoxide dismutase.
    (b) Write about public health nutritional benefits in a community.
13. Explain the role of Reactive Oxygen Species involvement in the treatment of disorders.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain the role of anti-oxidants in the treatment of kidney damage.
15. Explain in detail about Carotenoids.
16. Explain the free radicals in the treatment of Diabetes milletus.
17. Give the pharmacopeial specifications for complex carbohydrates.
18. Give the occurrence, chemical nature and uses of Gingko and Ginseng.
19. Explain the regulatory aspects of FSSAI on food safety.
20. Explain the role of free radicals with lipids.
21. Define flavonoids and give the source and medicinal benefits of any two flavonoids.
22. Write in detail about adulteration of foods?

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Code No: G-13071/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Make-up) Examination, November2024

Subject: Advanced instrumentation techniques (Elective-II)

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. What is meant by ionisation in MS? List any 3 ionisation techniques used in MS.
2. Explain Base peak and molecular ion in MS.
3. What is meant by MALDI and FAB?
4. Define chemical shift. What is the effect of shielding and deshielding effect on chemical shift?
5. List the differences between single crystal and powder X-ray diffraction.
6. List the validation parameters as per ICH guidelines.
7. Write a note on hyphenated techniques. What are their advantages? Give suitable examples.
8. Define calibration and validation. What are the differences between calibration and validation?
9. Briefly explain the principle of DSC?
10. Give suitable applications of radioimmunoassay.

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain the principle of Mass spectrometry. With a labelled diagram, explain MS instrumentation.

12. (a) List the calibration of UV- Visible spectrophotometer and explain any 2 parameters in detail.
    (b) Explain the Principle of Solid phase Extraction.

13. Explain the principle and instrumentation of GC-MS/MS.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. With a neat labelled diagram explain the principle, instrumentation and application of Differential Thermal Analysis (DTA).

15. What is the role of mass analyser in MS. Explain any two in detail.

16. What are the differences between C13 and H1 NMR spectroscopy?

17. Describe the calibration of GC.

18. Explain the principle and procedure involved in liquid-liquid extraction.

19. How X-rays are generated? Derive Bragg's equation.

20. Explain any three ionisation methods in MS.

21. Explain the coupling constant, shielding and deshielding with suitable examples.

22. Briefly explain the process of radioimmunoassay.

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Code No: F-7267/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main & Backlog) Examination, July 2024
Subject: Biostatistics & Research Methodology

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define the terms Biostatistics & Research.
2. The absorbance values of aspirin solution obtained by UV- Visible spectrophotometer as 0.273, 0.275, 0.271, 0.274, 0.275, 0.279, 0.278 and 0.281.
   Calculate the mean absorbance value.
3. Mention applications of regression in Pharmacy.
4. Write the properties of normal distribution.
5. Give different non-parametric tests.
6. What is the need for Research?
7. List out MS EXCEL statistical functions.
8. Write features of SPSS.
9. Mention advantages of factorial design.
10. Give different phase of clinical trials.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain about report writing in research methodology.
12. Discuss in detail about one way ANOVA with one example.
13. Write the details of response surface methodology.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Define sampling. Explain different sampling techniques.

15. The relative humidity in tablet production department of a pharmaceutical manufacturing unit is given below. Calculate the standard deviation in percent relative humidity.

DAY	1	2	3	4	5	6
X	60	62	65	69	75	65

16. Explain the theory of probability.

17. The following figure shows disease count from a region over a period of 1 year. Represent the data by a pie diagram.

DISEASE	**COUNT**
Jaundice	22
Tuberculosis	18
Typhoid	32
Malaria	15
Dengue	26

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18. What is experimental design? Write its principles.

19. Write notes on MINITAB.

20. Define Plagiarism. Write the types of it.

21. Discuss student t-test in brief.

22. Explain 2^2 factorial design with an example.

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Code No: F-7272/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main & Backlog) Examination, July 2024
Subject: Quality control and standardization of herbals (Elective-I)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define Palisade Ratio.
2. Write any four natural pesticide and their uses.
3. What are the application of Gas Chromatography?
4. What is secondary processing of medicinal plants?
5. Write any two biological markers in standardization of herbal products.
6. Write any two identification tests for glycosides.
7. Lycopodium Spore Method – Formula.
8. Mention any four examples of herbal drug interactions.
9. What are weedicides? Mention two examples.
10. Test for teratogenicity.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Describe the guidelines on GACP for medicinal plants.
12. Explain the quality control of herbal drugs as per WHO guidelines.
13. Enumerate the regulatory requirement of herbal drugs.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain the various herbal pharmacopoeias.
15. Write the GMP requirement for herbal medicine.
16. Explain the preparation of document for new drug application.
17. Discuss the protocol for clinical guidelines in herbal medicine.
18. Enumerate various aspects of GLP.
19. Write the applications of chromatography technique its standardization of herbal drugs.
20. Write briefly about stability studies of herbal medicinal products.
21. Describe the basic test for medicinal plant materials.
22. Write a note on research guidelines for evaluating safety and efficacy of herbal medicine.

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Code No: F-7271/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main & Backlog) Examination, July 2024

Subject: Pharmacovigilance (Elective - I)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. What is a Good Pharmacovigilance Practice?
2. What is the significance of Vigimed and Vigiflow?
3. Define probabilistic method.
4. Explain adverse events following immunization.
5. Write a detailed note on ICD
6. Describe phase I of clinical trial.
7. Explain WHO scale.
8. Describe the Types of services provided by CROs.
9. Define the terms (a) Case Reports (b) Cohort studies
10. Define WHO drug dictionary.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain in detail on communication with regulatory agencies, business partners. Describe health care facilities and media.
12. Describe pharmacogenetic variations attributed to CYP450 isoenzymes inhibition and induction.
13. Briefly explain International Non-Proprietary Name(INN) for drugs.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Discuss on organization of WHO-DD.
15. Describe the classification and significance of adverse events following immunization programme.
16. Explain individual case safety reports.
17. Discuss on the history of ICD.
18. Write about drug safety evaluation in pediatrics.
19. Write a short note on types of vaccine failure.
20. Write about the Pharmacovigilance program of India.
21. Briefly describe safety evaluation at pre-clinical and clinical trial phase.
22. What is the importance of CIOMS in Pharmacovigilance?

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Code No: F-7270/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main & Backlog) Examination, July 2024

Subject: Pharmaceutical Regulatory Science (Elective - I)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Discuss briefly about Purple Book
2. Define the terms (a) WHO (b) CDSCO (c) EMA
3. What is a generic product?
4. What is meant by 'double blind trial'?
5. Give a note on Investigational new drug.
6. What is Phase 3 clinical trial?
7. Define ASEAN common technical documents (ACTD).
8. Mention the different types of DMFs.
9. What are the functions of CDSCO?
10. What is good clinical practice

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Write a detailed on the following.
    (a) Timeline and types of IND.
    (b) Institutional review board.
12. How to manage and monitor clinical trials.
13. Write about common Technical Document.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Compare the documentation requirements of ANDA and NDA submissions.
15. Discuss about various Stages of drug discovery
16. Describe general check list for 21CFR part 11.
17. What is the general procedure for export of pharmaceutical product?
18. Explain the GCP obligations of investigators and sponsers
19. Describe in detail new drug approval process along with its documentation requirements as per USFDA.
20. How innovator drug are different from generics drugs?
21. What is the constitution and purpose of Ethics Committee?
22. Explain the Orange Book features.

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Code No: F-7269/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main & Backlog) Examination, July 2024
Subject: Pharmaceutical Marketing Management (Elective-I)

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define Marketing and selling.
2. List factors influencing the choice of physician.
3. List the stages of product life cycle.
4. Classify pharmaceutical market.
5. What is consumer profiling?
6. What is retailing and mention its advantages.
7. Write the roles and responsibilities of distributors?
8. List the duties of professional sales representatives.
9. What is vertical marketing?
10. Define pricing and mention its objectives.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain various approaches of market research for analysing market.
12. Describe the different channels in distribution management and mention the conflicts to be considered while selecting them.
13. Explain different pricing methods and strategies.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain the factors affecting industrial buying behaviour.
15. What is product portfolio analysis and its role in product positioning?
16. Write the roles of advertising and public relations in promotion of pharmaceutical products.
17. Explain the steps involved in personal selling.
18. Describe the role of journals and medical exhibition in product promotion.
19. Write the evaluation criteria and compensation planning for professional sales representatives.
20. Write the regulatory norms applicable to customer calls.
21. Describe the determinants for fixation of prices.
22. Write the functions and role of NPPA.

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Code No: F-7273/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main & Backlog) Examination, July 2024

Subject: Computer-Aided Drug Design (Elective-I)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write a note on serendipitous discovery of drugs.
2. Define the term lead optimization.
3. Differentiate between SAR and QSAR.
4. Write about Free-Wilson analysis.
5. What is virtual screening?
6. What is rigid docking?
7. Define the terms: Bioactive conformer & Force field.
8. What is global conformational minima?
9. Enlist the applications of bioinformatics tools in drug design.
10. Give examples for pharmaceutical databases.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. What is 3D QSAR? Write about CoMFA and CoMSIA methods.

12. Describe the concept of pharmacophore-based virtual screening in drug design.

13. Define and classify bioisosteres. Explain its significance in drug design with suitable examples.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain about Hansch analysis with a model QSAR equation.
15. Highlight the significance of partition coefficient in QSAR analysis and write its determination.
16. Describe metabolism-based lead discovery with specific examples.
17. Explain the steps involved in molecular docking.
18. Explain drug-likeness screening along with the tools used for its determination.
19. List out various protein databases. Explain the significance of these databases in drug design with a specific example.
20. Discuss the significance of *in silico* ADME databases in drug design.
21. Discuss briefly about conformational analysis.
22. Explain various stages involved in molecular mechanics.

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Code No: F-7268/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main & Backlog) Examination, July 2024

Subject: Social & Preventive Pharmacy

Time: 3 Hours **Max.Marks:75**

PART-A

Note: Answer all the questions **(10 x 2 = 20 Marks)**

1. Mention the social causes of disease.
2. Define health and hygiene.
3. Write a short note on types of respiratory tract infections.
4. What is the mode of transmission of the Ebola virus?
5. Write the functions of the pulse polio program.
6. What are the objectives and national program for the prevention and control of deafness?
7. Write about the social health program.
8. Write functions of WHO.
9. Write down the objectives of improvement in rural sanitation.
10. What is the importance of health education?

PART-B

Note: Answer any two questions **(2 x 10 = 20 Marks)**

11. (a) Define malnutrition and write about its types and prevention.
    (b) What are different avoidable habits from the health and hygiene point of view?

12. (a) What is SARS. Write its symptoms, prevention, and control.
    (b) Elaborate community services with health promotion activities in school.

13. (a) Write in detail about the Integrated disease surveillance program.
    (b) Explain the national tobacco control program.

PART-C

Note: Answer any seven questions **(7 x 5 = 35 Marks)**

14. Explain the concept of prevention and control of the disease.
15. Explain the prevention and control of diabetes mellitus.
16. Write the mode of transmission, prevention, and control of cholera.
17. Explain national mental health program objectives, functioning, and outcomes.
18. Explain the objectives, functioning and outcomes of the national program for the control of blindness.
19. Explain the national malaria prevention program.
20. Explain in detail the national family welfare program.
21. Write a note on the objectives, functions and staffing pattern of PHC.
22. Define community health. Classify and explain the principles of community health services.

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Code No. F-7274/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main & Backlog) Examination, July 2024
Paper: Cell and Molecular Biology (Elective–II)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all questions. **(10 x 2 = 20 Marks)**

1. Write a brief note on functions of m-RNA?
2. Write the functions of cell membrane.
3. Differentiate between t-RNA and m-RNA
4. Write the significance of Lac – operon pathway.
5. Define Transgenics.
6. Define genetic code.
7. Enlist the functions of Okasaki fragments.
8. What are SSB proteins?
9. Enlist the properties of the cells.
10. What are spindle fibres?

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Describe in detail about the enzymes involved in DNA replication.
12. Write in detail about cell signaling pathways and its misregulation.
13. What are chromosomes? Write a detailed account on discovery, structure, number and significance of chromosomes in prokaryotic and eukaryotic cells. Draw labelled diagrams wherever necessary.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain the DNA replication mechanism in eukaryotes.
15. Explain in detail significance of protein synthesis.
16. Write an account on the types of RNA. Discuss their functions.
17. Describe the stages of mitosis.
18. What is Bacterial Transduction? Explain the process of Transduction in Bacteria.
19. What are the structural and regulatory genes? Explain genetic control of protein synthesis.
20. Discuss the role of the enzyme DNA ligase plays during DNA replication.
21. Describe the stages of prophase -1 of meiosis.
22. Construct a complete transcription unit with promnoter and terminator on the basis
    A T G C A T G C A T A C

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Code No: F-7275/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main & Backlog) Examination, July 2024

Subject: Cosmetic Science (Elective-II)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all questions. **(10 x 2 = 20 Marks)**

1. Define Cosmetic and Cosmeceuticals.
2. What are the preservatives used in cosmetic products?
3. Write a note on face wash.
4. Write a note on mouth washes.
5. What are the uses of clove in oral care?
6. Write a note on Tewameter (TEWL).
7. Differentiate between soaps and syndet bars.
8. Write a note on hair combing properties.
9. Write a note on comedogenic and dermatitis.
10. What is the reasons for bad body odour.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Draw basic structure of skin and write functions of skin. Explain formulation of Moisturizing cream and Cold Cream as skin care products.
12. Write the role of herbs in cosmetics. Write the role of aloe, turmeric and neem in cosmetic formulation.
13. Write about blemishes, wrinkles, acne and prickly heat in skin problems.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Write the classification of cosmetics and cosmeceuticals with examples.
15. Write the classification and applications of i) Surfactants ii) Rheology modifiers
16. Write formulation and mechanism of action of Antiperspirants & deodorants.
17. Write the formulation of toothpaste for bleeding gums and sensitive teeth.
18. Classify sunscreen formulations and explain SPF.
19. Write a note on evaluation of Shampoo and skin cream as per BSI.
20. Write the principles and applications of Sebumeter and Corneometer
21. Write a note on oily and dry skin. Write causes for dry skin.
22. Write the hair fall causes and dandruff.

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Code No: F-7278/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII – Semester (PCI) (Main & Backlog) Examination, July 2024

Subject: Experimental Pharmacology

(Pharmacological Screening Methods)(Elective-II)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. What are common laboratory animals?
2. Differentiate between sedative and hypnotic agents.
3. Write the composition of IAEC.
4. What is one way ANOVA?
5. Enlist various techniques of blood collection in common laboratory animals
6. Write about Mutant animals.
7. What are nootropics?
8. What is the importance of sham negative and positive control groups?
9. List out screening methods for drugs acting on eye.
10. Write about Euthanasia?

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain various *in vivo*, *in vitro* methods to evaluate a compound for antidiabetic activity.
12. Describe in detail about regulations for laboratory animal care as per CPCSEA Guidelines.
13. Write in detail about the methods of screening for antihypertensives and anti arrhythmics.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Write a note on *in vivo* methods for screening antiepileptic drugs.
15. Explain the screening methods for skeletal muscle relaxants.
16. Describe various routes of drug administration in animals with advantages and disadvantages.
17. Write a brief note on screening methods of analgesic drugs.
18. Explain the applications of transgenic animals in pharmacological research.
19. Write any two preclinical screening methods for antidepressant activity.
20. Enumerate any two preclinical screening methods for local anaesthetics.
21. Explain the criteria of dose selection and calculations of dose for animals.
22. Explain the interpretation of results using Students-t test?

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Code No: F-7276/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII – Semester (PCI) (Main & Backlog) Examination, July 2024

Subject: Dietary Supplements and Nutraceuticals (Elective-II)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all questions. **(10 x 2 = 20 Marks)**

1. Write short notes on Reactive Oxygen Species.
2. Define flavonoids and polyphenolics.
3. Give the source, chemical nature and uses of Tea and coffee.
4. Explain the importance of synthetic anti-oxidants.
5. Write about GMPs on food safety.
6. Write about complex carbohydrates as functional food ingredients.
7. Give the occurrence and medical benefits of Lignans and Rutin.
8. What are phyto estrogens?
9. Write about production of free radicals in cells.
10. Write about storage potential of neutraceuticals.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. What are various endogeneous antixodants give its enzymatic and non enzymatic defence mechanism of action.
12. Explain various mechanisms of free radicals involved in Diabetes milletus and renal failure.
13. Write the various components of dietary supplements and their applications. Add a note on deficiency of dietary supplements.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain in detail about Carotenoids.
15. Give the occurrence, chemical nature and uses of Gingko and Ginseng.
16. Explain the regulatory aspects of FSSAI on food safety.
17. Explain the role of free radicals with lipids.
18. Write in detail about adulteration of food.
19. Explain in detail about sulphides and xanthophylls.
20. Give the importance of proteins and vitamins as functional food.
21. Explain the free radicals theory of ageing.
22. Write about various pharmacopoeial specification of neutraceuticals.

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Code No: F-7277/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main & Backlog) Examination, July 2024
Subject: Advanced instrumentation techniques (Elective-II)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. What are the Molecular ions in MS?
2. List the different ionisation techniques in MS.
3. Explain Sheilding and Desheliding in NMR.
4. Define chemical shift. List the factors affecting chemical shift
5. What is the internal standard in HPLC? Justify its selection.
6. What is the principle of Thermogravimetric Analysis (TGA)?
7. List the important steps in solid phase extraction.
8. Give suitable applications of radioimmunoassay.
9. List the parameters for the calibration of UV Visible spectrophotometer.
10. Define validation? List out various validation parameters.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain the principle of Mass spectrometry. With a labelled diagram, explain MS instrumentation.
12. Explain the Principle and instrumentation of RP-HPLC?
13. Explain the principle and applications of LC-MS/MS.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. With a neat labelled diagram explain the instrumentation and application of DTA.
15. Explain Fragmentation techniques in MS. Explain any two methods in detail.
16. Explain Time of flight and quadrupole mass analysers in MS.
17. What are the differences between C13 and H1 NMR spectroscopy?
18. Explain the origin of X-rays. Derive Bragg's equation
19. Explain the phenomena of spin – spin coupling with a suitable examples.
20. Explain the principle and procedure involved in liquid-liquid extraction.
21. What is the difference between calibration and validation? List the validation parameters as per ICH guidelines and explain any two.
22. Explain the principle, advantages and applications of RIA.

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Code No: F-7195/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Backlog) Examination, March 2024

Subject: Biostatistics & Research Methodology

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Find the median of the disintegration times of tablets for a data set 1, 4, 8, 3, 5, 7, 2, 10 and 6.
2. Calculate the range for individual series-X: 120,170,240,100, 105, 205, 300, 160, 150, 180.
3. Define the term Probability.
4. What is meant by population?
5. Give different non-parametric tests.
6. What is the need for design of experiments?
7. Mention different types of graphs.
8. Write statistical features of EXCEL.
9. Mention advantages of factorial design.
10. Give different phase of clinical trials.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain about report writing in research methodology.
12. Write informative notes on (a) Plagiarism (b) Types of sampling.
13. What is SPSS? Write about its models.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Discuss about Karl Pearson's coefficient of correlation.
15. Find the standard deviation of incubation period of small pox in 9 patients where it was found to be 15,12,10,15,11,7,9,17 and 14.
16. What is normal distribution? Explain the properties with a suitable example.
17. Write short notes on ANOVA.
18. A quality control analyst finds that on the average the sample passes the test 4 times out of 5. If the sample is tested 4 times, what is the probability of
    (a) Sample passing more than 2 times (b) At least 3 failures
19. Write notes on any one non-parametric test.
20. Discuss about statistical features of MINITAB.
21. Explain designing of a clinical trial.
22. Explain 2^2 factorial design with an example.

Code No: F-7205/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Backlog) Examination, March 2024

Subject: Advanced instrumentation techniques (Elective-II)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. What are the important steps in MS?
2. List the different ionisation techniques in MS.
3. Explain Base peak and molecular ion in MS.
4. Define chemical shift. List the factors affecting chemical shift
5. What is the internal standard in NMR spectroscopy? Justify its selection.
6. What is the principle of TGA?
7. List the important steps in solid phase extraction.
8. Give suitable applications of radioimmunoassay.
9. List the parameters for the calibration of UV Visible spectrophotometer.
10. What is the difference between calibration and validation?

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain the principle of Mass spectrometry. With a labelled diagram, explain MS instrumentation.
12. Explain HPLC calibration process.
13. Explain the principle of LC/MS/MS.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. With a neat labelled diagram explain the instrumentation and application of DTA.
15. Classify the ionisation techniques in MS. Explain any two methods in detail.
16. Explain Time of flight and quadrupole mass analysers in MS.
17. What are the difference s between C^{13} and H^{1} NMR spectroscopy?
18. Explain the origin of X-rays. Derive Bragg's equation
19. Explain the phenomena of spin – spin coupling with a suitable example.
20. Explain the principle and procedure involved in liquid-liquid extraction.
21. Write a note on hyphenated techniques. Give suitable examples. What are their advantages? Add a note on interfaces.
22. Explain the principle advantages and applications of RIA.

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Code No. F-7202/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Backlog) Examination, March 2024

Paper: Cell and Molecular Biology (Elective–II)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Differentiate Prokaryotic cell versus Eukaryotic cell.
2. Write a note on power house of the cell.
3. Differentiate between DNA and RNA.
4. Write the components of Lac–operon.
5. Define chromatin.
6. What is osmosis and diffusion?
7. Differentiate SER and RER.
8. Discuss the role of DNA ligase during DNA replication.
9. Mention different sub-stages of prophase -2 of meiotic cell division.
10. Differentiate microtubules and microfilaments.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. What is Bacterial Transduction? Explain the process of Transduction in Bacteria.
12. What are the structural and regulatory genes? Explain genetic control of protein synthesis.
13. Explain about giant chromosomes with their structure, functions of nucleus and its components.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Write an account on the types of RNA. Discuss their functions.
15. Write in detail about cell signaling pathways and its misregulation.
16. Explain the role of DNA -dependent RNA polymerse in transcription.
17. Distinguish between mitosis and meiosis with appropriate diagrams.
18. Write a short note on classification of cell types.
19. Describe the Watson and Crick model of DNA structure with labelled diagram.
20. Explain in detail functioning of protein kinases.
21. Write in detail about definition, theory, basics and applications of cell and molecular Biology.
22. Explain Chargaff's law.

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Code No: F-7203/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Backlog) Examination, March 2024

Subject: Cosmetic Science (Elective-II)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write a note on preservatives used in cosmetics
2. Explain cosmetics as Quasi and OTC drugs.
3. What are emollients?
4. Write a note on moisturizing cream.
5. Explain sun protection formulations.
6. What are mouthwashes?
7. Write the role of neem in oral care.
8. What is the difference between soap and syndet bar.
9. What are the reasons and prevention of dry skin.
10. Write a note on reasons and prevention of body odor.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Write a brief note on following excipients with examples a) Surfactants b) Humectants c) Rheology modifiers d) Emollients e) Preservatives
12. Write the causes and prevention of blemishes, wrinkles, acne and hair fall.
13. Explain Sebumeter, Corneometer, Tewameter (TEWL) in cosmetic evaluation.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Classify cosmetics and cosmeceuticals with examples.
15. Write a note on basic structure of hair and hair growth cycle.
16. Write the principle involved in formulation of cold cream and vanishing cream.
17. Write formulation and mechanism of action of Antiperspirants & deodorants.
18. Write a note on conditioning shampoo, antidandruff shampoo in hair care.
19. Write the formulation of toothpaste for bleeding gums and sensitive teeth.
20. Write a note on henna and amla in hair care.
21. Write the causes and prevention of blemishes, wrinkles and acne.
22. Discuss the role of importance of Aloe and turmeric in Herbal cosmetics.

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Code No: F-7206/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII – Semester (PCI) (Backlog) Examination, March 2024

Subject: Experimental Pharmacology

(Pharmacological Screening Methods)(Elective-II)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. List a few laboratory animals and their use in research.
2. What are transgenic animals?
3. List the common routes of drug administration in animals.
4. What are coagulants and anticoagulants?
5. List out the drugs acting on the eye. Name the models.
6. What is Euthanasia and list the techniques of euthanasia.
7. List various agents which cause inflammation.
8. How is dose selected in preclinical screening methods?
9. What is Students-t test and where is it used?
10. What is preclinical data analysis?

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Describe the screening models for evaluation of a compound for Antihypertensive activity.
12. Discuss the *in vitro* and *in vivo* techniques for screening of anticancer agents.
13. Describe in detail about regulations for laboratory animal care as per CPCSEA guidelines.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Write a brief note on screening methods of antinflammatory drugs.
15. What is Research? Mention the significance of selection of research topic.
16. Explain the screening methods for diuretics.
17. Describe the techniques for collection of blood in the animals?
18. Write about One-way ANOVA and its importance in preclinical studies.
19. Write a note on methods involved in the screening of nootropics.
20. Enumerate any two preclinical screening methods for local anaesthetics.
21. What are antiasthamatic agents? Discuss the methods involved in their screening.
22. Write the preclinical screening methods of sympathomimetics.

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Code No: F-7204/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII – Semester (PCI) (Backlog) Examination, March 2024

Subject: Dietary Supplements and Nutraceuticals (Elective-II)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write the difference between dietary supplements and neturaceuticals.
2. Write about polyphenols and tocopherols.
3. Give the occurrence and medical benefits of Lycopene.
4. Write about dietary fibres as functional food ingredients.
5. Give the source, chemical nature and uses of Oats and Rice bran.
6. Explain about enzymatic antioxidant defence.
7. What are phytosterols give its uses?
8. Write about AGMARK on food safety.
9. Write the benefits of Public health nutrition.
10. Name the marker compounds of spirulina and ginko.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain in detail the effect of processing, storage and interactions of various environmental factors on the potential of dietary supplements.
12. (a) Explain the role of antioxidants in the treatment of Cancer.
    (b) Write about various nutritional benefits in a community.
13. (a) Classify various nutraceuticals with examples.
    (b) Explain the role of Reactive Oxygen Species involvement in the treatment of disorders.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain the role of anti-oxidants in the treatment of kidney damage.
15. Give the pharmacopeial specification for complex carbohydrates.
16. Explain the regulatory aspects of FSSAI on food safety.
17. Explain the role of melatonin, Vitamin E and Catalase.
18. Define flavonoids and give the source and medicinal benefits of any two flavonoids.
19. Write in detail about adulteration of foods.
20. Explain the role of various endogenous anti-oxidants.
21. Give the importance of proteins and vitamins as functional foods.
22. Give the occurrence, chemical nature and uses of Garlic and Flax seeds.

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Code No: F-7197/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Backlog) Examination, March 2024
Subject: Pharmaceutical Marketing Management (Elective-I)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Differentiate between Marketing and selling.
2. Classify pharmaceutical products.
3. What is product branding?
4. What are the free samples and norms applicable to them,
5. What is significance of direct mail in product promotion?
6. Write the quantitative and qualitative aspects of pharmaceutical market.
7. Name different channels of distribution.
8. List factors influencing the choice of retail pharmacist.
9. What is product line and give example.
10. Write the merits and demerits of wholesale distribution channel.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain stages in product life cycle and mention its role in product positioning and new product decisions.
12. Describe the selection, training and future prospects of professional sales representatives.
13. Compare and contrast between rural, industrial and global marketing.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain the factors affecting consumer buying behaviour.
15. Describe salient features applicable for product packaging and labelling.
16. Explain the demographic descriptions and socio-psychological characteristics of consumers.
17. Write the motivational factors and prescribing habits of physician.
18. Write the promotional mix factors to be considered for fixing the promotional budget.
19. Explain online promotional techniques relevant to OTC products.
20. Differentiate between vertical and horizontal marketing.
21. Write the challenges of price management in pharmaceutical marketing.
22. Write an overview on DPCO and its functions.

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Code No: F-7198/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Backlog) Examination, March 2024

Subject: Pharmaceutical Regulatory Science (Elective-I)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. What are the functions of US regulatory authority?
2. What are non-clinical studies?
3. Write the difference between brand and generic products.
4. Describe the modules in ACTD.
5. Mention the general list of CFR.
6. Write a note on purple book.
7. Define a. eCTD b. CFR.
8. List out the items in module III in ANDA.
9. Explain the exclusion criteria for clinical trials.
10. Define ICF.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Discuss different stages of preclinical studies.
12. Write the process for export of pharmaceutical products.
13. Explain in detail on DMF system in India.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Differentiate CTD and eCTD.
15. Write a note on submission of DMF.
16. Explain the protocol of clinical trials.
17. What are the stages of drug discovery process?
18. Write the salient features of pharmacovigilance.
19. Discuss code of federal regulation.
20. Explain the objectives of regulatory affairs department in pharma industry.
21. Explain the different modules of CTD in detail.
22. Write the steps involved in changing an approved NDA /ANDA.

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Code No: F-7199/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Backlog) Examination, March 2024
Subject: Pharmacovigilance (Elective - I)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Explain Development Safety Update Report(DSUR)
2. What are the concepts of DDD?
3. Define Data mining
4. Give the purpose of MedDRA.
5. Enlist any two source of ADR reporting.
6. Define pharmacogenetics and pharmacogenomics.
7. What is post approval phase?
8. What is Vaccine pharmacovigilance.
9. What are responsibilities of CROs?
10. Describe CIOMS working group.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain individual reporting and spontaneous reporting.
    Enlist the steps recommended by WHO for establishing a PV centre.
12. Explain about Good clinical practices in pharmacovigilance.
13. Write a detailed note on ICD.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Describe in detail the organisational structure & functions of CDSCO in India.
15. Write the differences in Indian and global pharmacovigilace requirements.
16. Describe drug safety in pregnancy and lactation.
17. Explain in detail the organization and objectives of ICH
18. Write about effective communication in drug safety crisis management
19. Explain the following a. case control study b. cohort study.
20. List out the adverse events following immunization.
21. Discuss the establishment of national pharmacovigilance program.
22. Write about anatomical and therapeutic classification of drugs.

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Code No: F-7200/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Backlog) Examination, March 2024
Subject: Quality control and standardization of herbals (Elective-I)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define Stomata.
2. What is the difference between TLC & HPTLC?
3. Write the names of four markers.
4. What is Extractive value and its significance?
5. Define SOP.
6. What is AYUSH?
7. Write four examples of herbal drug interactions.
8. What is the significance of ICH?
9. Define term herbal medicine & crude drug.
10. What is Quantitative microscopy?

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Describe WHO guidelines for quality control of herbal drugs.
12. Explain the infra structural requirements under GMP for herbal industry.
13. Describe the preparation of documents for new drug application and export registration.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. What is GAP? Explain the various parameter of GAP.
15. Explain the importance of HPTLC method in the standardization of herbal drugs.
16. Write a note on regulatory requirement for herbal drugs.
17. Describe the guidelines on safety and efficacy of herbal medicine.
18. Explain WHO guidelines on current good manufacturing practices for herbal medicine.
19. Discuss about the assessment of Genotoxicity of herbal preparations.
20. Define and classify markers with examples.
21. Describe the basic test for medicinal plant material.
22. Explain ICH guidelines for the quality control of herbal drugs.

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Code No: F-7201/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Backlog) Examination, March 2024
Subject: Computer Aided Drug Design (Elective-I)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. What is random screening? Give an example.
2. What are the advantages of virtual screening over conventional techniques?
3. Explain the significance of the partition coefficient.
4. Define the terms: Molecular mechanics and quantum mechanics.
5. What is 3D QSAR?
6. Define and differentiate the following terms: Lead and Drug.
7. Write the significance of PDB in drug design.
8. Describe De *novo* drug design.
9. What are pharmaceutical databases? Give examples.
10. What is global conformational minima?

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. What is QSAR analysis? List out various physicochemical parameters and explain about electronic parameters. Provide a model QSAR equation.
12. Explain various stages involved in drug discovery and development.
13. Describe the significance of various bioinformatics tools used in drug design with suitable examples.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain Hansch analysis with its advantages & disadvantages.
15. What is molecular docking? Explain its significance in drug design.
16. Write about various energy minimization methods.
17. Explain chemical databases with suitable examples. Give their importance in drug design.
18. Write a note on serendipitous discovery of drugs.
19. Discuss the methodology involved in CoMSIA.
20. Explain drug-likeness screening. Write various tools used for the same.
21. Define and differentiate various types of bioisosteres with suitable examples.
22. Explain the role of quantum mechanics in drug design.

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Code No: F-7196/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Backlog) Examination, March 2024
Subject: Social and Preventive Pharmacy

Time: 3 Hours **Max.Marks:75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write a note on symptoms of vitamin deficiencies?
2. Define balanced diet.
3. What is the difference between drug abuse and drug addiction?
4. Explain the social causes of the disease?
5. Explain different types of diabetes mellitus?
6. Write the various objectives of HIV and AIDS control programme?
7. Write a note on Malaria control strategies?
8. What are the objectives of integration with National urban Health Mission (NUHM)?
9. Write a note on school health promotion program?
10. Write a note on the public health care system in India?

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. (a) Explain about Malnutrition and various methods of its prevention.
    (b) Explain general principles of prevention and control of Malaria.
12. (a) Explain the objectives, functioning and outcomes of national mental health programme.
    (b) Write a note on role of WHO in Indian National programmes.
13. (a) Discuss in detail about National family welfare programme.
    (b) Write a note on functions of PHC.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Write the various risk factors and diagnosis of Cancer.
15. Explain signs, symptoms, transmission and treatment of SARS.
16. Define health and explain different dimensions of good health.
17. Write a note on objectives and strategies for Leprosy elimination in India.
18. Write a note on pulse polio program.
19. Write a note on national programme for health care of elderly.
20. What are the aims and achievements of National Tobacco Program?
21. Explain about the different levels of Evaluation of public health.
22. How can you improve sanitization in rural area, explain different schemes and programs.

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Code No: E-12329/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII-Semester (PCI) (Main & Backlog) Examination, July 2023

Subject: Biostatistics and Research Methodology

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define Null and Alternative hypotheses.
2. Define response surface plot.
3. Write the assumption of the t-test.
4. Explain one-tailed and two-tailed tests.
5. What is the Power of study?
6. Explain α and β errors.
7. Write the application of range. Calculate the range from the data given below:
   15, 18, 12, 16, 27, 19, 10
8. Write the importance of the Standard error of the mean (SEM).
9. What are the advantages of factorial design?
10. Write the applications of the Mann-Whitney U test.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Write the properties of the binomial distribution. If the 10 coins are tossed 100 times, how many times would you expect 6 coins to fall tail upward?
12. Write the short notes on- (2.5+2.5+3+2M)
    a. Plagiarism b. Standard error of regression
    c. Karl Pearson's coefficient of correlation d. MINITABS
13. Explain two-way ANOVA with an example.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Calculate the mean and standard deviation from the following data of the presence of urea in the blood sample of 105 patients in a hospital.

Range of urea (mgldl)	0-22	3-25	6-28	9-31	2-34	5-37
No. of patients	8	15	22	9	20	22

15. Explain in detail about observational studies in clinical study design.

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16. Write a note on report writing and presentation of data in research methodology.
17. Explain in detail about unpaired t-test with example.
18. Define sampling. Explain different types of sampling techniques.
19. Explain the Kruskal-Walls test with a suitable example
20. Explain the Software used for the clinical trial approach.
21. Explain 2^2 factorial design and write its importance.
22. In a study of diabetic patients, the following readings of fasting blood sugar levels of 130 patients were obtained. Construct a histogram of the following data.

Fasting blood sugar level(mg/dl)	No. of persons
80-85	2
85-90	8
90-95	11
95-100	14
100-105	18
105-110	21
110-115	23
115-120	20
120-125	8
125-130	5

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Code no: E-12330/PCI

FACULTY OF PHARMACY

B.Pharmacy VIII- Semester (PCI) (Main & Backlog) Examination, July-2023

Subject: Social & Preventive Pharmacy

Time: 3 Hours **Max.Marks:75**

PART-A

Note: Answer all the questions **(10 x 2= 20 Marks)**

1. Define a balanced diet. What are micronutrients?
2. Mention any four factors which have an impact on urban health.
3. Define cholera and Write its symptoms.
4. Define drug dependence and drug addiction.
5. What is NACO and mention any two programs of NACO.
6. Write the objectives of the national program for the control of blindness.
7. Mention various mother and child health services
8. Write the objectives of the family welfare program.
9. What are the functions of a primary health center?
10. Write about health promotion

PART-B

Note: Answer any two questions **(2 x 10= 20 Marks)**

11. (a) Explain the evaluation of public health in detail.
    (b) Enumerate different socio-cultural factors related to health and disease.

12. (a) Write the mode of transmission, prevention, and control of malaria.
    (b) Write a note on improvement in rural sanitation

13. (a) Explain national leprosy control program objectives, functioning, and outcomes.
    (b) Write about the WHO's role in the Indian national health program.

PART-C

Note: Answer any seven questions **(7 x 5= 35 Marks)**

14. Write about types of vitamins and their deficiencies.
15. Explain the prevention and control of HTN.
16. What is influenza? Write its symptoms, prevention, and control.
17. Explain the objectives, functioning, and outcome of the HIV & AIDS control program.
18. Explain the universal immunization program.
19. Explain the national health intervention program for mother and child.
20. Write a note on the national program for the health care of the elderly.
21. Explain the objectives and strategies of the national urban health mission.
22. Explain the methods and principles of health education.

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Code No: E–12338/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII-Semester (PCI) (Main & Backlog) Examination, August 2023
Paper: Cell and Molecular Biology (Elective–II)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the question. **(10 x 2 = 20 Marks)**

1. Differentiate between Mitosis and Meiosis
2. Define genetic code
3. Enlist the functions of Okasaki fragments
4. What are SSB proteins?
5. Enlist the properties of the cells
6. Differentiate between prokaryotes and eukaryotes
7. Differentiate between DNA and RNA
8. Enlist the components of Lac –operon
9. Enlist any two concern branches of cell biology
10. What are spindle fibres?

PART-B

Note: Answer any two question. **(2 x 10 = 20 Marks)**

11. Write in details about definition, theory, basics and applications of cell and molecular Biology.
12. Describe in detail about the enzymes involved in DNA replication.
13. Write in detail about cell signaling pathways and its misregulation.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain the mechanism of cell cycle.
15. Explain in detail the significance of protein synthesis.
16. Explain in detail functioning of protein kinases.
17. Explain the gene structure of prokaryotic cell.
18. Explain in detail the protein structure.
19. Explain Chargaff's law.
20. Write a short note on classification of cell types.
21. Explain the DNA replication mechanism in eukaryotes.
22. Explain in detail significance of protein synthesis.

Code No: E-12339/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII-Semester (PCI) (Main & Backlog) Examination, August 2023
Sub: Advanced instrumentation techniques (Elective – II)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the question. **(10 x 2 = 20 Marks)**

1. List the different ionisation techniques in MS.
2. Explain the principle of Mass spectroscopy.
3. Define chemical shift.
4. What are the applications of DSC?
5. What is meant by thermal analysis? Name some techniques that are useful in drug Analysis.
6. Briefly explain the production of X-rays.
7. What are the calibration standards used in spectrofluorimeter and IR spectrophotometer?
8. List the parameters for HPLC calibration.
9. Briefly explain DTA.
10. List the important steps in solid phase extraction.

PART – B

Note: Answer any two question. **(2 x 10 = 20 Marks)**

11. Explain the principle of NMR spectroscopy. Add a note on chemical shift and spin-spin coupling.
12. Explain the principle of GC/MS/MS.
13. List and explain the thermal techniques. Explain the principle and instrumentation of DSC.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain the principle and applications of RIA.
15. Explain the fragmentation rules in MS.
16. Explain the principle of X-ray crystallography.
17. Explain the calibration of HPLC.
18. Explain FAB and MALDI in MS
19. Explain the principle of solid phase extraction.
20. Explain the parts of NMR instrumentation with a diagram
21. What is the difference between calibration and validation? List the validation parameters as per ICH guidelines and explain any two.
22. With a neat labelled diagram explain the instrumentation and application of DSC.

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Code No: E-12336/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII- Semester (PCI) (Main & Backlog) Examination, August 2023
Subject: Cosmetic Science (Elective-II)

Time: 3 Hours **Max.Marks:75**

PART-A

Note: Answer all the questions **(10 x 2 = 20 Marks)**

1. Define Cosmetic and Cosmeceuticals.
2. Write a note on Quasi and OTC drugs.
3. Write a note on hair oils.
4. Write the uses of mouth washes.
5. Explain hair growth cycle.
6. Write a note on hair tensile strength study
7. Write a note on hair combing properties.
8. Differentiate between soaps and syndet bars.
9. Write a note on reasons and prevention of dry skin.
10. What is dermatitis?

PART-B

Note: Answer any two questions **(2 x 10 = 20 Marks)**

11. Write basic structure and function of skin. Explain formulation of Moisturizing cream, Cold Cream and Vanishing cream as skin care products.
12. Write the role of herbs in cosmetics. Write a brief note on the following herbs **i)** Aloe & Turmeric in skin care **ii)** Neem & Clove in oral care
13. Write the principles and applications of **a)** Sebumeter and Corneometer b**)** Tewameter (TEWL) and **c)** Hair tensile strength study

PART-C

Note: Answer any seven questions **(7 x 5 = 35 Marks)**

14. Write briefly on evolution of cosmeceuticals from cosmetics.
15. Write a note on **i)** Surfactants **ii)** Rheology modifiers **iii)** Humectants
16. Write the common problems associated with teeth and gums. Explain formulation of toothpaste for bleeding gums and sensitive teeth as oral care products.
17. Classify sunscreens and explain SPF.
18. Write a note on BIS specifications and Analytical methods for evaluation of Shampoo and Tooth paste
19. Explain the role of Henna and Amla in hair care.
20. Write the cosmetic problems associated with hair and scalp.
21. Write about blemishes, wrinkles and acne in problems associated with skin.
22. Write formulation and mechanism of action of Antiperspirants & deodorants.

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Code No: E-12340/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII-Semester (PCI) (Main & Backlog) Examination, August 2023
Subject: (Pharmacological Screening Methods) Experimental Pharmacology (Elective-II)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write the composition of IAEC.
2. Write applications of Mutant animals.
3. Enlist preclinical screening methods for diuretics.
4. Define hypothesis with examples.
5. Enlist various techniques for collection of blood sample.
6. What are different techniques of Euthanasia.
7. List out screening methods for drugs acting on eye.
8. Enlist pre clinical screening methods for anti-inflammatory actvity.
9. What are parametric and non parametric tests.
10. Name different methods used for screening parasympatholytics.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Write a note on CPCSEA guidelines for performing experiments on animals. Describe in detail about requirement for IAEC permission on animal studies.
12. Explain various methods to evaluate a compound for antidiabetic activity by invivo, invitro methods.
13. Give methods of screening for antihypertensives and anti arrhythmics.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain different methods for collection of blood in laboratory animals.
15. Describe anyone preclinical screening method for diuretic activity.
16. Describe different routes of drug administration in laboratory animals.
17. Discuss one screening method for anticoagulant.
18. Write any two preclinical screening methods for antidepressant activity.
19. Explain the applications of transgenic animals in pharmacological research.
20. Explain significance of statistical analysis of student t-test.
21. Enumerate any two preclinical screening methods for local aneasthetics.
22. Discuss one screening method for antidiabetic activity.

Code No. E-12337/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII Semester (PCI) (Main & Backlog) Examination, August 2023

Subject: Dietary Supplements & Nutraceuticals (Elective-II)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Explain the term 'nutrition education' and its role in promotion of community health.
2. Write about any two nutraceuticals that slow ageing process.
3. Differentiate functional foods and nutraceuticals. Write about omega fatty acids
4. Write source, active constituents and health benefits of broccoli and ginseng.
5. Write source and markers for sulphide compounds in any two foods. How are they beneficial in the prevention or management of chronic diseases.
6. Explain AGMARK
7. How complex carbohydrates differ from simple sugars. What are their sources and health benefits?
8. How does stress impact health. Write interventions to minimize its pathological influence?
9. Write about any two antioxidant enzymes.
10. Write the health benefits of tocopherols.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Write a note the detrimental effects of processing, storage and environment on the potential of nutraceuticals.
12. Write about: (i) Probiotics (ii) Nutraceuticals in cancer
13. Write about flavonoids and their Health benefits with examples.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Discuss in detail adulteration of any five common foods. Pinpoint the health hazards of the adulterants.
15. Discuss the responsibilities of regulatory body FSSAI in ensuring safety of food.
16. Write in detail the mechanism of free radical induced damage to lipids.
17. Write about polyphenols as potential antioxidants with examples.
18. Write about sources and health benefits of lactobacillus and melatonin.
19. Write a note on exogenous factors influencing the quality of nutraceuticals.
20. Write a note on food supplements that help in the management of diabetes.
21. Write about the importance of nutrition in children, pregnant women.
22. Write about the nutritional value and health benefits of oats, rice bran, wheat bran.

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Code No: E-12331/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII- Semester (PCI) (Main & Backlog) Examination, July / August 2023

Subject: Pharmaceutical Marketing Management (Elective-I)

Time: 3 Hours **Max.Marks:75**

PART-A

Note: Answer all the questions **(10 x 2 = 20 Marks)**

1. Define marketing and mention its scope.
2. Write the elements of the product mix.
3. Define advertisement.
4. Classify products in pharmaceutical marketing.
5. Write objectives of medical exhibition.
6. Differentiate between consumer and buyer.
7. Write evaluation criteria for professional sales representatives.
8. Write the benefits and drawbacks of direct mailing.
9. What is industrial marketing?
10. What is the role of retailing in promotion?

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain various approaches to analyze the consumer behavior in pharmaceuticals.
12. Write in detail the steps involved in personal selling.
13. Describe the role of channels in physical distribution management and mention their merits and demerits.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. What is the consumer profile? Mention the approaches for consumer profiling.
15. Explain the factors and methods applicable to product portfolio management.
16. Differentiate between marketing and selling.
17. Describe different elements of the marketing environment.
18. Explain the role of marketing research on sales of pharmaceuticals.
19. Explain the motivational factors that influence the prescribing habit of physicians.
20. What is product portfolio analysis and mention its role in product positioning.
21. Write the salient features of DPCO and its significance in pharmaceutical business.
22. What is consumerism? Write the roles of pharmacist and physician in consumerism.

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Code No: E-12332/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII-Semester (PCI) (Main & Backlog) Examination, July / August 2023

Subject: Pharmaceutical regulatory science (Elective-I)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. List out the different applications used for approval in EU.
2. Write a note on orange book.
3. Define preclinical study.
4. Write a note on IND.
5. Explain the objectives of regulatory affairs department in pharma industry.
6. What is the importance of DMF?
7. Explain the functions of Japan drug regulatory authority.
8. What are the inclusion criteria for clinical trials?
9. Define a. TGA b. EMEA.
10. Define regulatory affairs.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. What are CTD and eCTD? Explain the different modules of CTD in detail.
12. Describe the contents of investigator brochure used in clinical studies.
13. Discuss various stages of drug discovery and drug development process.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Discuss the criteria for human volunteer selection in clinical trial.
15. Explain organization and functions of CDSCO.
16. Describe good clinical practice.
17. Explain the changes made to approve NDA.
18. What are the steps involved in application and approval of ANDA?
19. Explain constitution and function of institutional review board.
20. What is independent ethics committee?
21. Explain the management of clinical trials.
22. What is the difference between innovator and generic product?

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Code No: E-12334/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII-Semester (PCI) (Main & Backlog) Examination, July / August 2023

Subject: Quality control and standardization of herbals (Elective-I)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. List out the various WHO guidelines for the safety of herbal drugs.
2. List out the contents of a protocol for a clinical trial for the safety of herbal medicines.
3. Define GACP and write its importance.
4. Define standardization and write its importance.
5. Name the various parameters for evaluation of commercial drugs intended for use.
6. Define monographic analysis.
7. How does FDA regulate natural products in the US.
8. What are the differences between HPLC and HPTLC?
9. What is an accelerated stability study?
10. Give the significance of ICH guidelines for the safety of herbal.

PART-B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain the advanced analytical methods of evaluation of crude drugs.
12. What are the challenges in the stability testing of herbal products? Explain a suitable protocol for testing the stability of herbal drug
13. What do you understand by 'Quality assurance in herbal Industry'? Explain the importance of GMP in the Herbal Industry.

PART-C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain the method to determine the microbial and aflatoxin content in the herbal drugs.
15. Explain the application of HPLC for the standardization of a herbal drug.
16. What are the WHO guidelines for safety monitoring of herbal drugs.
17. Explain briefly the good agriculture practices of herbal drugs.
18. Explain the identification and estimation of pesticide residues in plant products.
19. Give a protocol for clinical trials in herbal medicine.
20. Explain the role of chemical and biological markers in the standardization of herbal products.
21. What is a traditional system of medicine? What are the GLP requirements in the traditional system of medicine?
22. Mention the different types of Herbal Industries. Explain the importance of WHO. Guidelines for quality assurance in these herbal Industries.

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Code No: E-12333/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII-Semester (PCI) (Main & Backlog) Examination, July / August 2023

Subject: Pharmacovigilance (Elective –I)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the question. **(10 x 2 = 20 Marks)**

1. Write the steps involved in reporting ADR.
2. List out the genetically determined toxicities.
3. Write the responsibilities of CDSCO.
4. What is phase II of clinical trial?
5. Mention any six drugs contraindicated in pregnant and lactating women.
6. List out the objectives of ICH
7. Write the factors affecting immunization safety.
8. Describe cross sectional studies.
9. What are the factors affecting AEFI surveillance.
10. Mention the ADR following immunization.

PART – B

Note: Answer any two question. **(2 x 10 = 20 Marks)**

11. Define ADR. Enumerate the different methods of causality and severity assessment of ADR. Explain WHO scale.
12. Define pharmacovigilance. Discuss the role of pharmacist in detection, reporting and management of ADRs.
13. Explain in detail MedDRA. Compare and contrast various observation methods for vaccine safety study.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain organization and function of ICH.
15. Describe standard MedDRA queries.
16. Discuss about individual case safety reports.
17. Explain CIOMS requirements for ADR reporting.
18. Write about drug event monitoring program.
19. What is Narinjo scale? Explain the importance of communication in pharmacovigilance.
20. Discuss in detail vaccine safety surveillance.
21. Explain in detail about spontaneous case reports and case series.
22. Explain drug safety evaluation in geriatric and pediatric populations.

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Code No: E-12335/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII-Semester (PCI) (Main & Backlog) Examination, July / August 2023

Subject: Computer Aided Drug Design (Elective-I)

Time: 3 Hours **Max. Marks: 75**

PART-A

Note: Answer all the question. **(10 x 2 = 20 Marks)**

1. Define the term energy minimization.
2. Explain the significance of partition coefficient.
3. Differentiate between lead and drug.
4. What is the serendipitous drug discovery? Give an example.
5. Explain the significance of Taft's steric constant.
6. Differentiate between rigid and flexible docking studies.
7. Write about *de novo* drug design.
8. What are pharmaceutical databases? Give examples.
9. Give examples for ADME databases.
10. What is global conformational minima?

PART – B

Note: Answer any two question. **(2 x 10 = 20 Marks)**

11. Explain in detail about various physicochemical parameters used in QSAR analysis.
12. Describe the concept of pharmacophore-based virtual screening in drug design.
13. Explain the significance of bioisosterism in drug design and development with a specific example.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain drug metabolism based lead discovery with examples.
15. Differentiate between classical and non-classical bioisosteres.
16. Highlight the significance of Hammet's substituent constant in QSAR analysis and Write its determination.
17. Differentiate between Hansch & Free-Wilson QSAR analysis.
18. Write in detail about drug-likeness screening.
19. Explain any one cheminformatics tool used in drug design.
20. What is PDB? Explain its features and applications in drug design.
21. Explain the role of molecular mechanics in drug design.
22. Write briefly about conformational analysis.

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Code No. D-8105/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main & Backlog) Examination, July 2022

Subject: Biostatistics and Research Methodology

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define type-I error.
2. Explain power of study.
3. Write the difference between histogram and bar diagram.
4. Define the term multiple regression.
5. Find the range of the data 9, 7, 21, 32, 18, 24, 26, 29, 39, 25.
6. Find the median of following data: 21, 36, 44, 23, 32, 52, 16.
7. Explain Null hypothesis and Alternative hypothesis.
8. Explain critical value.
9. Write the advantages of Minitab.
10. Write the significance of standard error of mean.

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. (a) Explain in detail about observational studies in clinical study design.
    (b) Explain in detail about report writing in research methodology.

12. Two groups of rats were injected 0.5 and 1.0 mg of a tranquilizer respectively and the following are the number of seconds it took them to fall asleep.

0.5 mg dose (X)	1.0 mg dose (Y)
8	5
10	8
12	7
14	6
16	5

Use the Mann Whitney's U test at 0.01 level of significance to test the null hypothesis that the difference in dosage have no effect on the length of time it takes to fall asleep.

(Tabulated value at 0.01% is 2.33)

13. Explain in detail about one-way ANOVA with one example.

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PART – C

Note: Answer any seven questions. (7 x 5 = 35 Marks)

14. Define Sampling? Explain sampling techniques.
15. Explain paired t-test in detail.
16. Define Normal distribution and state its properties.
17. Find the standard deviation of incubation period of smallpox in 9 patients where it was found to be 15, 12, 10, 15, 11, 7, 9, 17 and 14.
18. Explain in detail about theory of probability.
19. The following figure shows disease count from a region over a span of 6 months. Represent the data by a pie-diagram,

Disease	Disease Count
HIV	17
Malaria	28
Diarrhoea	30
Tuberculosis	25
Influenza	20

20. Find the coefficient of correlation between the variable X and Y using Karl Pearson's method.
21. Explain 2^2 Factorial Design and write its advantages.
22. Explain optimization techniques in response surface methodology.

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Code No. D-8116/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII Semester (PCI) (Main & Backlog) Examination, July 2022
Subject: Experimental pharmacology
(Pharmacological screening methods) (Elective-II)

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Name some common lab animals and their use in research.
2. Enlist some routes of drug administration in laboratory animals.
3. Write the importance of negative and positive control groups.
4. What are Anti-Psychotics? List out the screening models.
5. List out the drugs acting on the eye. Name the models.
6. Define parasympthomimetics. Write the principle of any one screening model.
7. Define anti-cancer drugs. Write the importance of cell lines for pre-clinical anti-cancer research.
8. Describe about aspirin induced ulceration model.
9. Write the mechanism of Alloxan induced diabetes model.
10. Write about preclinical data analysis.

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Describe the screening models for evaluation of a compound for Anti-hypertensive drugs.
12. Define inflammation. List out the methods available to induce inflammation. Describe one acute and one chronic model in the screening of Anti-inflammatory agents.
13. Describe in detail about regulations for laboratory animal care as per CPCSEA guidelines.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Describe the techniques for collection of blood in the animals.
15. Write the applications of transgenic animals in preclinical research.
16. Explain in detail about one screening model for evaluating anti-asthmatics.
17. Discuss about screening models of Anti-depressant drugs.
18. What are local anesthetics? Enlist the screening models. Describe any model in detail.
19. Write any 2 screening models for sympathomimetics.
20. Write about screening methods for diuretics.
21. Write about One-way ANOVA.
22. Discuss about research hypothesis and study design in research.

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Code No. D-8112/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII Semester (PCI) (Main & Backlog) Examination, July 2022

Subject: Cell & Molecular Biology (Elective-II)

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. What is the function of Restriction endonucleases?
2. Differentiate microtubules and microfilaments.
3. Define chromatin.
4. What is osmosis and diffusion?
5. Differentiate SER and RER.
6. Discuss the role of the enzyme DNA ligase plays during DNA replication.
7. Mention different sub-stages of prophase-2 of meiotic cell division.
8. Write any two differences between Meiosis-1 and meiosis-2.
9. Give the sequence of events occurring during prophase of mitosis.
10. Write the characteristic feature of telophase M phase?

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. What are chromosomes? Write a detailed account on discovery, structure, number and significance of chromosomes in prokaryotic and eukaryotic cells. Draw labelled diagrams wherever necessary.
12. What are the structural and regulatory genes? Explain genetic control of protein synthesis.
13. Briefly describe about giant chromosomes. Explain the structure and functions of nucleus and its components.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Write an account on the types of RNA. Discuss their functions.
15. (i) Construct a complete transcription unit with promnoter and terminator on the basis A T G C A T G C A T A C
    (ii) Write the RNA strand transcribed from the above transcription unit along with its polarity.
16. Explain the role of DNA-dependent RNA polymerse in transcription.
17. What is Bacterial Transduction? Explain the process of Tansduction in Bacteria.
18. Distinguish between mitosis and meiosis with appropriate diagrams.
19. Describe the stages of prophase-1 of meiosis.
20. Describe the stages of mitosis.
21. Describe the Watson and Crick model of DNA structure with labelled diagram.
22. Define Cell cycle. Explain the sequence of events in cell cycle with the aid of a labelled diagram.

Code No.D-8113/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII-Semester (PCI) (Main & Backlog) Examination, July 2022

Subject: Cosmetic Science (Elective – II)

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write the classification of cosmetic.
2. What are meant by cosmetics as Quasi and OTC drugs?
3. Write a note on preservatives used in cosmetic formulations.
4. Write a note on mouth washes.
5. Write a note on role of clove in oral care.
6. Write the uses of clove.
7. Write a note on skin color measurement.
8. Write the uses of syndet bars.
9. Write about causes and prevention of acne.
10. Write a note on hair combing properties.

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Enlist the excipients used in cosmetics formulations. Describe the following excipients with examples (a) Surfactants (b) Emollients and (c) Rheology modifiers.
12. (a) Write the role of Henna and Amla in hair care.
    (b) Write the principles and applications of Sebumeter and Cornemeter.
13. Write the causes and prevention of following problems
    (a) Dry skin (b) Dandruff (c) Hair fall (d) Body odor.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Write a note on evolution of cosmeceuticals from cosmetics.
15. Write a note on hair growth cycle.
16. Write formulation and mechanism of action of Antiperspirants & deodrants.
17. Write about toothpaste for bleeding gums and sensitive teeth.
18. Write about sun protection formulations.
19. Write role of Aloe and Turmeric in skin care.
20. Write BIs specifications analytical methods for skin creams.
21. Write a note on measurement of TEWL by Tewameter.
22. Write about causes and prevention of dry skin.

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Code No: D-8115/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main & Backlog) Examination, July 2022

Subject: Dietary Supplements and Nutraceuticals (Elective-II)

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define nutraceuticals and dietary supplements.
2. Write short notes on Reactive Oxygen Species.
3. What are probiotics and give examples.
4. Give the occurrence and medical benefits of Lycopene.
5. Explain the importance of synthetic anti-oxidants.
6. Write about dietary fibres as functional food ingredients.
7. Give the source, chemical nature and uses of Oats and Rice bran.
8. Explain about enzymatic antioxidant defence.
9. What are Probiotics and prebiotics.
10. Write about AGMARK on food safety.

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain in detail the effect of processing, storage and interactions of various environmental factors on the potential of neutraceuticals.
12. a) Explain the role of Glutathione peroxidase and Superoxide dismutase.
    b) Write about public health nutritional benefits in a community.
13. Explain various mechanisms of free radicals involved in the treatment of disorders.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain the role of anti-oxidants in the treatment of kidney damage.
15. Explain in detail about Carotenoids.
16. Explain the free radicals theory of ageing.
17. Give the pharmacopeial specifications for complex carbohydrates.
18. Give the occurrence, chemical nature and uses of Gingko and Ginseng.
19. Explain the regulatory aspects of FSSAI on food safety.
20. Explain the role of free radicals with lipids.
21. Define flavonoids and give the source and medicinal benefits of any two flavonoids.
22. Write in detail about adulteration of foods?

Code No. D-8107/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII Semester (PCI) (Main & Backlog) Examination,
July 2022
Subject: Pharma Marketing Management (Elective-I)

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define Marketing.
2. Distinguish between marketing and selling.
3. Write in brief about product decision.
4. Give the importance of product management in Pharmaceutical industry.
5. Write the objectives of Drug Price Control Order.
6. What is Physical distribution management?
7. What is product branding?
8. Define advertising.
9. Write about the role of market research.
10. What is Pricing and give its importance?

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11(a) Describe various methodologies of promotion.
(b) Explain about product life cycle.
12(a) Describe in detail pricing methods and strategies.
(b) Explain the issues in price management in pharmaceutical industry.
13. Write about Pharmaceutical marketing channels.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Write about marketing environment.
15. Discuss about the National Pharmaceutical Pricing Authority.
16. Explain various theories of motivation.
17. Write about global marketing.
18. Write about medical exhibition and public relations.
19. Write about new product decisions.
20. Write a note on product positioning.
21. Write the future prospects of the Professional sales representative (PSR).
22. What are tasks in physical distribution management?

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Code No. D-8108/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII Semester (PCI) (Main & Backlog) Examination,
July 2022
Subject: Pharmaceutical Regulatory Science (Elective-I)

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. What are the stages in the drug development process.
2. Write down the difference between innovator and generics.
3. Name the regulatory authority of India, USA, European Union, Australia.
4. What is the difference between CTD & DMF.
5. What is the importance of the informed consent.
6. Write down the importance of the purple book.
7. Enlist the various guidelines under ICH.
8. Define Pharmacovigilance.
9. Write a note on Code of federal regulation.
10. What are the responsibilities of Institutional review board.

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain in detail about NDA approval process.
12. Explain the procedure for the export of pharmaceutical product.
13. Write in detail about the common technical document.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Describe the purpose of IND and what are the types of IND.
15. Write about the different phases in clinical trials.
16. Define DMF and write down the types of DMF.
17. Give a brief note on pharmacovigilance and safety monitoring in clinical trials.
18. Explain the term organge book and what information does it provide.
19. Explain the regulatory requirement for ANDA approval process.
20. Discuss about the generic drug development.
21. Discuss about the differences between NDA & ANDA data submission.
22. Discuss the elements of clinical trial protocol.

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Code No. D-8109/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII Semester (PCI) (Main & Backlog) Examination,
June / July 2022
Subject: Pharmacovigilance (Elective-I)

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write a note on Naranjo scale in assessing on ADR.
2. What is the causality assessment in ADR monitoring.
3. Write down the purpose of the ATC classification of drugs.
4. What are the basic drug information resources available.
5. Write a short note on method of passive surveillance in pharmacovigilance.
6. What are the principles of good pharmacovigilance communication.
7. What is the pre-clinical phase in clinical trails.
8. Write a short note on periodic safety update reports.
9. What are the differences in Indian and global pharmacovigilance requirements.
10. Write a short note on schedule “Y”.

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. (a) Describe the organization and objectives of ICH.
    (b) Write about the WHO international drug monitoring programme.
12. (a) Detailed note on ADR’s with suitable examples.
    (b) Write a detailed note on Contrast Research Organizations [CRO].
13. (a) Write a detailed note on communication in Drug Safety crisis Management.
    (b) Detailed note on Drug Therapy for pregnancy and lactation.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Write a note on CIOMS working groups.
15. Write in detail about clinical phase and post approval phase.
16. Write in detail about international classification of diseases.
17. Write a note on spontaneous reports and cohort study.
18. Write a note on communication with Regulatory Agencies and Healthcare facilities.
19. Write about the predictability and preventability assessment of ADR.
20. Write a detailed note on MedDRA.
21. Discuss regulatory considerations in pharmacovigilance and what are the outcomes pharmacovigilance.
22. Explain in detail about Drug interactions and ADR’s.

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Code No. D-8111/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII Semester (PCI) (Main & Backlog) Examination, July 2022

Subject: Computer Aided Drug Design (Elective-I)

Time: 3 Hours **Max. Marks: 75**

PART - A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write about free Wilson analysis?
2. Write the applications of chemoinformatics in drug design?
3. What is virtual screening?
4. Write the Describe the steps involved in Homology modeling of a protein?
5. Define QSAR?
6. Explain the Lipinski's rule of five?
7. Write the examples for protein database?
8. Define Bioisosterism?
9. What is Tafts steric constant?
10. What is flexible docking?

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Write a note on molecular mechanics and Discuss about the importance of energy minimization in molecular modelling?
12. Discuss about the in silico ADMET analysis in drug design?
13. What is 3D-QSAR and write about COMFA and COMSIA methods in 3D QSAR?

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain about various steps in molecular docking?
15. Explain the physicochemical properties which influence biological activity?
16. Write about Bioisosteric replacement with the help of case studies?
17. Write a short note on de novo drug design?
18. Explain lead discovery in drug design?
19. Discuss about druglikeness screening?
20. Write about different methods used to determine potential energy surface(PES) of a molecule?
21. Discuss the role of bioinformatics in drug design?
22. Explain about various parameters in druglikeness screening.

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Code No. D-8106/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII-Semester (PCI) (Main & Backlog) Examination, July 2022

Subject: Social & Preventive Pharmacy

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write a note on nutritional deficiencies?
2. Explain different types of diabetes mellitus?
3. What is the difference between drug abuse and drug addiction?
4. Explain the social causes of the diseases?
5. Give the preventive measures for the control of malaria and dengue?
6. Write the objectives of AIDS control programme?
7. Write a note on role of WHO in Indian National programmes?
8. What are the objectives of national family welfare programme?
9. Write a note on school health program?
10. Write a note on functions of PHC?

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. (a) Explain about Malnutrition and its prevention.
    (b) Explain prevention and control of acute respiratory infections.
12. (a) Explain in detail functioning and outcomes of National mental health program.
    (b) Write about national health intervention programme for mother and child.
13. (a) Discuss the community services available in rural and urban regions.
    (b) Write a note on treatment of TB.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Write the socio-cultural factors related to health and disease.
15. Explain signs, symptoms, transmission and treatment of SARS.
16. Write about Universal Immunization programme.
17. Write a note on objectives and strategies of National Leprosy control programme.
18. Write a note on National programme for control of deafness.
19. Write a note on Family welfare program.
20. What are the aims and achievements of National Tobacco Program.
21. Explain about the general prevention, control and treatment of lymphatic filariasis.
22. Write about Health promotion and education in schools.

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Code No: 12261/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main) Examination, July 2021

Subject: Social and Preventive Pharmacy

Time: 2 Hours **Max. Marks: 75**

Note: Answer Seven questions from Part -A, any One questions from Part- B and any Five questions from Part- C

Part A (7x3=21 marks)

1. Write about nutritional deficiencies.
2. Define public health.
3. Write about personal hygiene and health care.
4. Write about drug addiction-drug substance abuse.
5. Write a short note on national programme for prevention and control of deafness Objectives and outcome.
6. Write about health promotion.
7. Write about social health programme.
8. Write a note on improvement in rural sanitation.
9. Write a note on integrated disease surveillance program.
10. Write a note on national urban health mission.

Part B (1x14=14 marks)

11. a) Explain about malnutrition and its prevention.
    b) Explain about balanced diet.
12. Explain general principles of prevention and control of cholera, dengue, pneumonia, hypertension and diabetes mellitus.
13. a) Explain national health program, its objectives, functioning and outcome of HIV&AIDS control programme.
    b) Explain about national leprosy control programme.

Part C (5x8=40 marks)

14. Explain universal immunization programme and pulse polio programme.
15. Explain national health intervention programme for mother and child.
16. Explain national tobacco control programme.
17. Explain national malaria prevention program.
18. Write a note on functions of PHC and improvement in rural sanitation.
19. Explain general principles of prevention and control of ebola virus and dengue.
20. Explain national mental health program objectives, functioning and outcomes.
21. Explain national programme for control of blindness objectives, functioning and outcomes.
22. Explain the concept of prevention and control of disease and social causes of diseases

Code No: 12268/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main) Examination, July 2021

Subject : Cosmetic Science (Elective-II)

Time: 2 Hours **Max. marks: 75**

Note: Answer Seven questions from Part –A, any One question from Part- B and any Five questions from Part- C

Part A (7x3=21 marks)

1. Define and classify cosmetics
2. Write applications of humectants
3. What is Ceramide?
4. What is facewash? Enlist the ingredients used in face wash
5. Define SPF (Sun protection factor)
6. Write role of turmeric in skin care
7. What is the role of Neem & Clove in oral care products
8. Explain hair combing properties
9. Give the symptoms and treatment of dry skin
10. What is prickly heat?

Part B (1x14=14 marks)

11. Explain basic structure of skin with neat labelled diagram. Write in detail functions of skin
12. Discuss the formulation building blocks of i) Hair care product ii) Oral care Product
13. Write a note on : a) Sebumeter b) Melanine pigmentation

Part C (5x8=40 marks)

14. Explain hair growth cycle
15. Write in detail about evolution of cosmeceuticals from cosmetics
16. Discuss various advantages and disadvantages of cold cream
17. Define and classify surfactants with example. Write applications of surfactant
18. Give BIS (Bureau of Indian Standards) specification for tooth paste
19. Explain analytical methods for skin cream
20. Write a note on Syndet bars
21. Explain mechanism of action of antiperspirants and deodorants
22. Explain various elements of healthy scalp

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Code No: 12269/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main) Examination, July 2021

Subject : Advanced Instrumentation Techniques (Elective-II)

Time: 2 Hours **Max. marks: 75**

Note: Answer Seven questions from Part –A, any One questions from Part- B and any Five questions from Part- C

Part A (7x3=21 marks)

1. Define calibration?
2. Write the principle involved in differential thermal analysis
3. Write the importance of Radio Immunoassay?
4. Define Validation?
5. Discuss the principle involved in Liquid – liquid extraction technique?
6. Discuss the calibration procedure for electronic balance?
7. Write the principle involved in Mass spectrometry?
8. Write the principle involved in H-NMR?
9. Write about powder diffraction method?
10. Mention hyphenated Techniques and their advantages

Part B (1x14=14 marks)

11. a) What do you mean by chemical shift? Explain the various factors influencing it?
    b) Write about Spin-Spin Coupling and Coupling Constant?

12. a) Draw a sketch diagram and Explain the instrumentation of mass spectrometer
    b) Write about different Fragmentation techniques in mass spectrometry

13. a) Discuss the following hyphenated techniques

    a) $\frac{C}{LC}$ - MS/MS b) GC-MS/MS

Part C (5x8=40 marks)

14. Explain the calibration procedure of a) UV spectrophotometer
    b) IR Spectrophotometer
15. Write the instrumentation and applications TGA
16. Write about X-ray crystallography?
17. Explain MALDI & FAB ionization techniques in Mass Spectrometry
18. Explain Spin - Spin Coupling in NMR?
19. Write the calibration of fluorimeter & flame photometer?
20. Write the instrumentation and applications DSC?
21. Explain about HPTLC/MS?
22. Write about applications and limitations of Radio immunoassay?

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Code No: 12271/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main) Examination, July 2021

Experimental Pharma Cology

Subject : (Pharmacological Screening Methods) (Elective-II)

Time: 2 Hours **Max. marks: 75**

Note: Answer Seven questions from Part –A, any One questions from Part- B and any Five questions from Part- C

Part A (7x3=21 marks)

1. List the different species of animals used in laboratory
2. What are transgenic animals and mutant animals?
3. List the common routes of drug administration in animals
4. What is study design?
5. List various agents which cause inflammation
6. What are coagulants and anticoagulants?
7. What is Euthanasia and list the techniques of euthanasia
8. What is Students t test and where is it used?
9. How is does selected in preclinical screening methods?
10. What is preclinical data analysis?

Part B (1x14=14 marks)

11. Describe the preclinical screening procedures for antidiabetic drugs
12. Define inflammation. List out the methods available to induce inflammation and describe on acute and one chronic model in the screening of anti-inflammatory agents.
13. Discuss the *in vitro* and *in vivo* techniques for screening of anticancer agents

Part C (5x8=40 marks)

14. Write a brief note on screening methods of antinflammatory drugs.
15. Explain the screening methods for diuretics
16. What is Research? Mention the significance of selection of research topic
17. What are the OECD guidelines for maintenance and breeding of laboratory animals?
18. Explain the techniques of blood collection from animals
19. Write a note on methods involved in the screening of nootropics
20. What are antiasthamatic agents? Discuss the methods involved in their screening
21. Write the preclinical screening methods of sympathmimetics
22. Describe the preclinical screening methods of antihyperlipidemic drugs.

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Code No. 12262/ PCI

FACULTY OF PHARMACY

B. Pharmacy VIII Semester (PCI) (Main) Examination, July 2021

Subject: Pharma Marketing Management (Elective – I)

Time: 2 Hours **Max. Marks: 75**

PART - A

Note: Answer any seven questions. **(7 x 3 = 21 Marks)**

1 Define marketing.
2 List the factors influencing for the selection of physician.
3 What are product line and product mix?
4 What is product portfolio analysis?
5 Name the components of promotional mix.
6 Enlist the channel members in physical distribution management.
7 What is the importance of pricing?
8 What are functions of distribution in marketing?
9 Write the motivational factors influencing PSR performance.
10 Write the need of global marketing.

PART - B

Note: Answer any one question. **(1 x 14 = 14 Marks)**

11 Explain the product life cycle management and its importance in product portfolio analysis.
12 Explain different promotional techniques for OTC products and role of regulatory aspects.
13 Describe the various physical channels of distribution in pharmaceutical business and explain the conflict in channels.

PART - C

Note: Answer any five questions. **(5 x 8 = 40 Marks)**

14 Describe different components in marketing environment.
15 Explain the approaches to analyze consumer behavior.
16 Explain the role of retail pharmacist in market research.
17 Write in detail about the prescribing habits of physician.
18 Describe critical aspects of product management in pharmaceutical industry.
19 What are the duties of professional sales representative?
20 Write the factors to be considered in selection and training of PSR.
21 Write the salient features of drug price control order.
22 Differentiate between vertical and horizontal marketing.

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Code No: 12263/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main) Examination, July 2021

Subject : Pharmaceutical Regulatory Science (Elective-I)

Time: 2 Hours **Max. marks: 75**

Note: Answer Seven questions from Part –A, any One questions from Part- B and any Five questions from Part- C

Part A (7x3=21 marks)

1. What are the responsibilities of RA department in a pharmaceutical industry?
2. Write the differences between IND, NDA and ANDA
3. Define Pharmacovigilance
4. Write the names of Drug regulatory authorities of different regions all over the world
5. What is the difference between orange book and purple book?
6. What are the different Acts involved in regulatory filling of drug products?
7. Enlist obligations of investigator in clinical trials
8. What are the different types of DMF?
9. Enlist the elements of e-CTD document
10. What are the different types of changes to approved ANDA?

Part B (1x14=14 marks)

11. Explain in detail about generic drug product development process. Add a note on advantages of generic products.
12. Discuss about the different types of ANDA para filings and write in brief about GDUFA.
13. Describe in detail about the phases of clinical trials.

Part C (5x8=40 marks)

14. Explain the concept of innovator and generic drug product
15. Discuss IND approval process
16. Explain about different routes of regulatory filing through MHA.
17. Justify the importance of documentation in pharmaceutical industries
18. Discuss about the documents required under Module – 2 of CTD
19. Describe the requirements for filing abbreviated new drug application
20. Discuss the need and role of independent ethics committee
21. What is the importance of safety monitoring in clinical trials?
22. What are the different stages involved in a pharmaceutical product life – cycle?

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Code No: 12264/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main) Examination, July 2021

Subject : Pharmacovigilance (Elective-I)

Time: 2 Hours **Max. marks: 75**

Note: Answer Seven questions from Part –A, any One questions from Part- B and any Five questions from Part- C

Part A (7x3=21 marks)

1. Write down the WHO definition of “ADR”
2. What is De challenging and Re challenging of drugs in ADR detection
3. Describe the importance of safety monitoring of medicine
4. Write a short note on Daily Defined Dose (DDD)
5. Write the importance of vaccine safety surveillance
6. Write a short note on methods of Stimulating Reports in pharmacovigilance
7. What are the steps involved in the process of communication in pharmacovigilance
8. Describe the objectives of ICH guidelines
9. Write a short note on Schedule “Y”?
10. What are the differences in Indian and Global pharmacovigilance requirements?

Part B (1x14=14 marks)

11. a) Write a note on CIOMS working groups
    b) Write about Drug safety evaluation in Geriatrics population

12. a) Write briefly about safety data generation
    b) Write a note on Adverse events following immunization

13. a) Write a note on History of Pharmacovigilance
    b) Write about the establishment and operation of Drug safety department in industry

Part C (5x8=40 marks)

14. Write a note on Anatomical and therapeutic and chemical classification of drugs
15. Write a detailed note on Pharmacovigilance programme of INDIA (PvIP)
16. Write about comparative observational studies
17. Explain about the management of ADR
18. Write a detailed note on MedDRA
19. Write a note on Periodic safety update reporting
20. Write about the specialization resources for ADR’s
21. Write a note on Geriatric related ADR with example focusing on Pharmacokinetic parameters
22. Write a note on Schedule Y of D & C act

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Code No: 12265/PCI

FACULTY OF PHARMACY

B. Pharmacy VIII - Semester (PCI) (Main.) Examination, July 2021

Subject : Quality Control and Standardization of Herbals (Elective-I)

Time: 2 Hours **Max. marks: 75**

Note: Answer Seven questions from Part -A, any One questions from Part- B and any Five questions from Part- C

Part A (7x3=21 marks)

1. Define the terms herbal drug and crude drug.
2. What does GACP means and what are its objectives.
3. What is traditional medicine and herbal medicine
4. Write basic tests used for identification of any one herbal dosage forms.
5. Write the advantages and disadvantages of organic farming.
6. Explain the terms GLP, GMP, GAP.
7. What is chromatography? Mention various chromatographic techniques used in the standardization of herbal drugs.
8. Write the concepts of quality assurance in herbal drug industry.
9. What are chemical and biological markers. Give examples.
10. What is importance of research guidelines.

Part B (1x14=14 marks)

11. Explain ICH guidelines for the quality control of herbal drugs.
12. Describe WHO guidelines on GACP for medicinal plants.
13. Explain the methods and WHO guidelines for stability testing of herbal drugs.

Part C (5x8=40 marks)

14. What is GAP? Explain the various parameters of GAP.
15. Explain any two methods of evaluation of crude drugs.
16. Briefly explain Various aspects of GLP in Herbal Drug Industry.
17. Explain the importance of HPTLC method in the standardization of herbal drugs.
18. Explain different measures in monitoring of safety of herbal products
19. Write a note on regulatory requirement of herbal drugs
20. Explain the documents required for new drug application.
21. Give a protocol of standardization of herbal drugs.
22. Write a note on Efficacy of herbal medicines.

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Code No: 12260/PCI

FACULTY OF PHARMACY

B. Pharmacy - VIII - Semester (PCI) (Main.) Examination, July 2021

Subject: Biostatistics and Research Methodology

Time: 2 Hours **Max. Marks: 75**

Note: Answer Seven questions from Part -A, any One questions from Part- B and any Five questions from Part- C

Part - A (7x3=21 marks)

1. What do you mean by biostatistics? Give its importance in pharmacy
2. Describe the types of dispersion
3. Calculate range for individual series – X : 120 170 240 100 105 205 300 160 150 180
4. What is the significance of probability?
5. Describe the properties of normal distribution
6. What is factorial design?
7. Name the open source graphical user interfaces supported by R.
8. What is observational study? Give an example.
9. What are the various statistical methods used in excel?
10. A random sample of size 100 is taken from the population with standard difference

    5.1 Calculate the standard error of mean

Part - B (1x14=14 marks)

11.a) Explain the applications, merits and demerits of correlation

b) Calculate the Karl person's coefficient of correlation for the following data:

X	7	6	5	4	3	2	1
Y	18	16	14	12	10	6	8

12.a) What is SPSS? Explain the important SPSS models

b) Explain 'Two Tailed test of hypotheses?

13. Two independent samples of 7 and 8 items respectively had the following readings. State, if the two estimates of population variance differ significantly?
    (Given the tabulated value = 4.21)

Sample A	10	8	9	13	11	12	9	
Sample B	15	13	14	11	12	10	8	6

Part - C (5x8=40 marks)

14. Discuss the procedure for wilcoxon – signal rank test for one sample
15. What is experimental design? Explain its principles
16. Write short notes on different types of ANOVA
17. What is population? Explain the difference between small sample test and large sample test.

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18. Obtain a line of regression of Y on X for the following data

Age in Yrs (X)	66	38	56	42	72	36	63	47	55	45
Blood pressure (Y)	145	124	147	125	160	118	149	128	150	124

19. The average number of phone calls per minute coming between 2pm-4pm is 2.5 Determine the probability that during one particular minute there will be i) 4 or less ii) more than 6 calls.

20. The Height of 10 males of a given locality found to be 70, 67, 62, 68 61, 68, 70, 69, 64, 66 inches. Is it reasonable to believe that the average height is 64 inches? Test at 5% significance level for 9 degree of freedom. (Give t0.05 = 1.83 for 9 d.f)

21. The following figures shows disease count from a region over a span of 1 year. Represent the data by a pie diagram.

DISEASE	COUNT
Jaundice	22
Tuberculosis	18
Typhoid	32
Malaria	15
Dengue	26

22. An average of 5 cars arrives per hour at a restaurant. Assume that the number of cars arriving per hour follows Poisson distribution.
    i) What is the probability that exactly 5 cars will arrive in a given hour?
    ii) What is the probability that at least 3 cars arrive in a given hour?

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