Printed Pages: 01 **Sub Code:BP-801T**

Paper Id: 231442 **Roll No.** | | | | | | | | | | |

B PHARM
(SEM VIII) THEORY EXAMINATION 2022-23
BIOSTATISTICS AND RESEARCH METHODOLOGY

Time: 3 Hours ***Total Marks: 75***

Note: Attempt all Sections.

SECTION A

1. Attempt *all* questions in brief. 10 x 2 = 20

a. Null hypothesis.

b. Define Karl Pearson's coefficient of correlation.

c. Confidence interval.

d. Write the applications of nonparametric tests.

e. Define degrees of freedom.

f. Define one-tailed and two-tailed tests.

g. What is Plagiarism?

h. Define the Power of a study.

i. Standard error of the mean and its significance?

j. Report writing in the research study.

SECTION B

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

a. Definehypothesis? What are the different types of hypothesis? Explain how you will formulate a hypothesis with a suitable example.

b. Explain the types and advantages of factorial design in formulation development.

c. Describe the different measures of central tendency. Calculate the mean and standard deviation for the given data on the mid-arm circumference(cm) of 16 children –14, 12, 13, 10, 11, 13, 14, 12, 12, 11, 10, 13, 12, 11, 10, 14

SECTION C

3. Attempt any *five* parts of the following: 7 x 5 = 35

a. Classify different types of data; explain any three measures of dispersion with examples.

b. Discuss the hypothesis testing of parametric data.

c. Explain types of correlation and correlation coefficient. Give suitable examples.

d. Explain ANOVA and write its applications.

e. Define Plagiarism in Research? How to remove Plagiarism in a Research Paper?

f. What are non-parametric tests? Explain the chi-square test-Goodness of fit test.

g. Discuss the applications of EXCEL and SPSS programs in statistical analysis.

PAPER ID-420592

Roll No: | | | | | | | | | | | | | |

BPHARMA
(SEM VIII) THEORY EXAMINATION 2021-22
BIOSTATISTICS AND RESEARCH METHODOLOGY

Time: 3 Hours *Total Marks: 75*

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 10 x 2 = 20

a.	What is Wilcoxon Rank Sum test?
b.	What are the arithmetic mean and geometric mean?
c.	What will be the value of the median, if in a moderately skewed distribution, arithmetic mean is 35.6 and the mode is 38.9?
d.	How can you construct the pie chart?
e.	What do you mean by plagiarism?
f.	What are the Type I and Type II errors?
g.	What do you mean by blocking system for two-level factorials?
h.	How will you differentiate between one way ANOVA and two way ANOVA test?
i.	What are the merits and demerits of mode?
j.	How would you differentiate between coefficient of correlation and regression?

SECTION B

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

a.	When do you use Binomial distribution? Explain various properties of Binomial distribution. What do you think whether Poisson distribution a limiting case of Binomial distribution or not? If yes then describe the limit conditions. If the mean of the Binomial distribution is 40 and standard deviation is 6 then calculate n, p and q.
b.	Can you distinguish between sample and population? What are the advantages and limitations of sampling? Write the name of the different types of sampling. Explain each type of probability sampling in detail.
c.	What are the two broad categories of research studies? Explain cohort study with example. Also write its advantages and disadvantages.

SECTION C

3. Attempt any *five* parts of the following: 7 x 5 = 35

a.	Illustrate various measures of dispersion. How will you calculate the standard deviation from the following data: 10, 12, 14, 18, 25, 30, 35, 40?
b.	What do you mean by report writing? Illustrate various steps of report writing.
c.	What is clinic trial? Explain various phases of clinic trials.
d.	Describe Central Composite Design and Box Behnken Design. What are the basic differences between these designs?
e.	How can you distinguish between small sample and large sample? Describe all the major steps involved in one sample t-test. https://www.aktuonline.com A sample of 20 items has mean 42 units and standard deviation 5 units. Test the hypothesis that it is a random sample from a normal population with mean 45 units. Given: $t_{(19)}(0.05) = 2.093$(Test at 5% level of significance)
f.	Analyze the purpose of curve fitting. Fit a straight line to the following data by least square method. x: 0 1 2 3 4 y: 1 1.8 3.3 4.5 6.3
g.	What is factorial design? How would you demonstrate 2^2 and 2^3 factorial designs with example? What are the pros and cons of factorial design?

Printed Pages: 01 **Sub Code: BP-802T**

Paper Id: 231640 **Roll No.** | | | | | | | | | | |

B PHARM
(SEM VIII) THEORY EXAMINATION 2022-23
SOCIAL AND PREVENTIVE PHARMACY

Time: 3 Hours ***Total Marks: 75***

Note: Attempt all Sections.

SECTION A

1. Attempt *all* questions in brief. **2 x 10 = 20**

a. Define the concept of health according to WHO.

b. What is the national tobacco program?

c. What is SARS?

d. Symptoms of Pneumonia

e. Name any four-disease associated with vitamin deficiency.

f. Define hypertension and its symptoms.

g. Write the function of PHC.

h. Name the causative agent of cholera and dengue.

i. What is drug addiction?

j. Write the objectives of the pulse polio program.

SECTION B

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

a. Write in detail the principle of prevention and control of malaria and chicken guinea.

b. Write a detailed note on the national program for the control of blindness.

c. Explain socio-cultural factors and the impact of urbanization on health and disease.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

a. Explain the Concept of nutritional deficiency disease.

b. Detail notes on personal hygiene, health care, and avoidable habits.

c. Write the objective, function, and outcome National mental health program.

d. How the healthcare system is improved by improving rural sanitation.

e. Write in detail a note on the national tobacco control program.

f. Describe the universal immunization program and draw an immunization schedule chart.

g. Write in detail the Pulse polio program.

PAPER ID-420175

Roll No: | | | | | | | | | | | | |

BPHARMA
(SEM VIII) THEORY EXAMINATION 2021-22
SOCIAL AND PREVENTIVE PHARMACY

Time: 3 Hours *Total Marks: 75*

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a.	Give examples of vector borne diseases.
b.	Who are ASHA workers?
c.	Mention few drugs to control EBOLA virus infection.
d.	Enumerate few suggestions to improve rural sanitation.
e.	Suggest names of few life style diseases.
f.	Name a live bacterial vaccine stating the disease against which it is used.
g.	What do you mean by public health?
h.	Define health as per WHO
i.	Cite few ways you would like to control dengue.
j.	What is drug addiction?

SECTION B

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

a.	What are general principle of prevention and control of disease? Explain in detail with special reference with cholera and pneumonia.
b.	What are the functions of PHC? Elaborate community services in rural with improvement in sanitation with health promotion activities in school.
c.	Explain in detail about different national health program with their objective, functioning and outcomes with special reference to National Leprosy Control Programme.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

a	Establish the food in relation to nutrition and health with different types of deficiencies and their prevention.
b	Narrate National Family Welfare Programme. Justify the need for national health intervention programme for children and mother in Indian context
c	Write short note on i. National Tobacco Control programme ii. National programme for the health care for the elderly
d	Highlight the salient features of IDSP and Pulse Polio Programme?
e	Explain in details the HIV and AIDS Control Programme.
f	Enumerate different socio cultural factors related to health and disease with impact of urbanization on health and disease
g	Write a note on hygiene and health.

PAPER ID-420282

Subject Code: BP803ET

Roll No: | | | | | | | | | | | | |

BPHARMA

(SEM VIII) THEORY EXAMINATION 2021-22

PHARMACEUTICAL MARKETING MANAGEMENT

Time: 3 Hours *Total Marks: 75*

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a.	Define marketing.
b.	"Management is science or art or combination of both", Justify
c.	Differentiate between primary and secondary data.
d.	Illustrate the differences between marketing and selling.
e.	Define branding.
f.	Suggest some important purposes of packaging.
g.	What are the fundamental differences between sales promotion and publicity?
h.	Define channel conflict.
i.	Compare and contrast wholesalers and retailers.
j.	Classify the various roles of PSR.

SECTION B

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

a.	Discuss the various factors of marketing environment which impacts the organizational success.
b.	Elaborate the various stages of product life cycle and suggest the various strategies to be taken by a pharmaceutical house to sustain growth in various phases.
c.	Enumerate the various channels of distribution in pharmaceutical marketing. How will you select the most appropriate channel for distribution of drugs?

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

a	Explain the various factors influencing consumer behavior.
b	Discuss the various basis of market segmentation. Write short note on "role of market research".
c	Narrate the various types of advertisement media you will consider for promoting a cosmetic product. Justify the factors which will have an impact on effectiveness of an advertisement.
d	Justify the role of professional sales representative. Highlight the process of selection and training of the sales representatives in a pharma organization.
e	Write short note on DPCO and NPPA
f	Write short notes on: i. Rural Marketing ii. Global Marketing.
g	Suggest some online promotional techniques for OTC Products.

Printed Pages:01 Sub Code: BP 804ET

Paper Id: 231064 Roll No. | | | | | | | | | | |

B PHARM
(SEM VIII) THEORY EXAMINATION 2022-23
PHARMACEUTICAL REGULATORY SCIENCE

Time: 3 Hours *Total Marks: 75*

Note: Attempt all Sections.

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

(a) Differentiate NDA and ANDA.

(b) What is placebo trial?

(c) What do you mean by a randomized design?

(d) Define clinical trial and explain Phase II.

(e) Write about Timeline and types of IND.

(f) How many people will be selected for Phase-I trial?

(g) What is the significance of pharmacovigilance?

(h) Importance of DMF.

(i) Write a brief note on 21 CFR.

(j) Differentiate Generic vs Innovator.

SECTION B

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

(a) Discuss the various modules and requirements of electronic Common Technica Document (eCTD)? Compare it with ASEAN common technical documents (ACTD).

(b) Write the various stages of Development of new drugs.

(c) Discuss the application and approval process of ANDA.

SECTION C

3. Attempt any *five* parts of the following: 7 x 5 = 35

(a) Explain organization structure and functions of USFDA.

(b) What are various GCP obligations of investigator and sponsor?

(c) Explain the salient features of orange book and purple book.

(d) Explain the organization and functions of CDSCO.

(e) Discuss the organization structure and functions of Australian drug regulatory body.

(f) Explain the safety monitoring in clinical trials.

(g) Discuss the importance of pharmaceutical regulatory affairs in industry.

PAPER ID-420850

Roll No: | | | | | | | | | | | | |

BPHARMA
(SEM VIII) THEORY EXAMINATION 2021-22
PHARMACEUTICAL REGULATORY SCIENCE

Time: 3 Hours *Total Marks: 75*

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a.	Define innovator drug product.
b.	Mention the various modules of CTD format.
c.	Enumerate the GCP obligations of the investigators.
d.	Define Pharmacovigilance.
e.	What is the significance of drug discovery?
f.	What is purple book? Give its importance.
g.	Mention the different stages of clinical trials.
h.	How will you define generic products?
i.	Define non-clinical trials.
j.	What is the importance of informed consent form?

SECTION B

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

a.	Describe in detail the timelines involved in Investigational New Drug application
b.	How will you define drug master file? Discuss its significance in detail.
c.	.Discuss the development of clinical trial protocols in detail.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

a.	Discuss the drug developmental process in detail.
b.	Write a detailed note on regulatory approval process of ANDA.
c.	Explain in detail the procedure for export of pharmaceutical products in India.
d.	What do you mean by orange book? Describe in detail.
e.	Give an overview of the regulatory authorities of India.
f.	Give the detailed process of generic drug product development.
g.	What is Institutional Review Board? Describeits formation and working procedures.

Printed Pages: 01 **Sub Code: BP-805ET**

Paper Id: 231140 **Roll No.** | | | | | | | | | | |

B PHARM
(SEM VIII) THEORY EXAMINATION 2022-23
PHARMACOVIGILANCE

Time: 3 Hours ***Total Marks: 75***

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **2 x 10 = 20**

(a) Define the adverse drug reaction.

(b) Compute the limitations of detecting ADRs in clinical trials.

(c) Discuss the PSUR.

(d) Classify ADRs according to severity.

(e) List out factors affecting adverse effects of the vaccine.

(f) What is phase IV of clinical trials?

(g) What are CIOMS working groups?

(h) Discuss the cohort study with example.

(i) Discuss the Defined daily doses.

(j) Illustrate the importance of Pharmacogenomics.

SECTION B

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

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

(b) Illustrate the vaccine safety surveillance along with the different types o pharmacovigilance methods used for passive and active surveillance.

(c) Explain the drug safety evaluation in pediatrics and geriatrics.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

(a) Characterize the different methods of causality and severity assessment of ADRs and explain Naranjo's scale.

(b) Demonstrate the prerequisite for setting up a pharmacovigilance center in a CRO and hospital.

(c) Define vaccine. Explain reasons for vaccination failure.

(d) Summarize the ATC classification of drugs with example.

(e) Explore the Pre- marketing and Post-marketing clinical trials.

(f) Illustrate the organization and objectives of ICH.

(g) Explain the Schedule Y of Drugs and Cosmetics Act in brief.

BPHARMA
(SEM VIII) THEORY EXAMINATION 2021-22
PHARMACOVIGILANCE

Time: 3 Hours ***Total Marks: 75***

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a.	What is drug event monitoring?
b.	List four drugs contraindicated in pregnant and lactating women.
c.	Suggest the requirements for CIOMS form
d.	What is eudravigilance?
e.	What is teratogenicity? Give examples.
f.	What is post marketing safety?
g.	Narrate the minimum criteria required for a valid report?
h.	What is phase IV of clinical trials?
i.	What are the basic objectives of pharmacovigilance planning?
j.	Mention few examples of predictable adverse drug reactions.

SECTION B

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

a.	Classify adverse drug reaction. How will you detect and report ADR along with causality assessment scales?
b.	Discuss in detail basic and specialized drug information resources in pharmacovigilance
c.	Discuss in detail of Cohort and case control study. Explain the applications of MedDRA and standard MedDra queries.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

a.	Explain the establishing pharmacovigilance program in the hospital.
b.	What is vaccine safety surveillance? Explain in detail different types of pharmacovigilance methods used for passive and active surveillance.
c.	Discuss in detail establishment and operation of drug safety department in pharmaceutical industry.
d.	Mention the importance aspects of ICH guidelines for expedited reporting.
e.	Write short note on pharmacogenomics in adverse drug reaction
f.	How will you carry out drug safety evaluation in geriatric and pediatric populations?
g.	What is the role of CDSCO in pharmacovigilance? Write a note on ATC classification of drugs.

Printed Pages: 01 **Sub Code:BP-806ET**

Paper Id: 231221 **Roll No.** | | | | | | | | | | |

B PHARMA
(SEM VIII) THEORY EXAMINATION 2022-23
QUALITY CONTROL AND STANDARDIZATION OF HERBALS

Time: 3 Hours ***Total Marks: 75***

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **2 x 10 = 20**

(a) What is the significance of extractive value?

(b) Name the methods used for determination of moisture content in crude drugs.

(c) What is the requirement of Quality Assurance in Herbal Drug Industry?

(d) Give the full form of GLP and cGMP.

(e) What do you mean by safety and efficacy of crude drugs?

(f) Mention the conditions for accelerated stability studies of crude drugs.

(g) Express the meaning of 'Pharmacovigilance'.

(h) What do you understand by terms 'chemical markers' and 'biological markers'.

(i) Mention the role of HPTLC in standardization of herbal drugs.

(j) Write a note on Herbal Pharmacopoeia.

SECTION B

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

(a) Discuss the methods for evaluation of commercial crude drugs intended for use.

(b) Discuss the GMP in traditional system of medicine.

(c) Describe the ICH guidelines for quality control of herbal drugs.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

(a) Discuss the physico-chemical parameters for standardization of herbal drugs.

(b) Outline the Research Guidelines for Evaluating the Safety and Efficacy of Herbal Medicines.

(c) Describe the methods for quality assurance in herbal drug industry.

(d) Explain the document preparation for new drug application.

(e) Discuss the protocol for the stability testing of herbal medicines.

(f) Explain the regulatory requirements for herbal medicines.

(g) Summarize the significance of markers in study of Phytomolecules.

Subject Code: BP806ET

PAPER ID-420748

Roll No: | | | | | | | | | | | | | |

BPHARMA
(SEM VIII) THEORY EXAMINATION 2021-22
QUALITY CONTROL AND STANDARDIZATION OF HERBAL

Time: 3 Hours *Total Marks: 75*

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION: A

1. Attempt *all* questions. **10 x 2 = 20**

a.	Define processed and finished herb as per WHO.
b.	What is chromatographic fingerprinting?
c.	Write a note on chemical markers with examples.
d.	Write briefly about authentication of medicinal plant.
e.	Define new drug application.
f.	Write the importance of GACP.
g.	Define bitter value?
h.	Write any two adsorbents used in TLC.
i.	Define quality control and give its significance.
j.	Define export registration.

SECTION: B

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

a.	Write a comparative note on various herbal pharmacopoeia.
b.	Describe the evaluation of commercial crude drugs intended for use.
c.	Explain briefly the current good manufacturing practices (cGMP) for herbal drugs

SECTION: C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

a.	Discuss stability testing methods and protocols for herbal medicines.
b.	Write a note on ICH guideline for quality control of herbal medicinal products
c.	What is standardization? Explain the application of HPTLC as a method for standardization.
d.	Write a note on preparation of documents for new drug application
e.	What are the regulatory requirements of herbal medicines in India
f.	Explain briefly the good agriculture practices of herbal drugs
g.	Explain the WHO guidelines on safety monitoring of herbal medicines in pharmacovigilance systems

Printed Pages: 01 | Sub Code: BP807ET

Paper Id: 231977 | Roll No. | | | | | | | | | | |

B.PHARM.

(SEM VIII) THEORY EXAMINATION 2022-23

COMPUTER AIDED DRUG DESIGN

Time: 3 Hours *Total Marks: 75*

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 10 x 2 = 20

(a) What various stages of drug discovery?

(b) What is Phase 0 clinical trial?

(c) What is non-classical bioisosteres?

(d) What is Taft's steric factor (Es)?

(e) Write down the drawbacks and limitations of CoMFA.

(f) What do you understand by the term Pharmacophore?

(g) Give the names of molecular docking models.

(h) What do you understand by the term "Binding mode"?

(i) What isOrangebook?

(j) What is various chemical structure representation used for chemical structures in digital databases?

SECTION B

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

(a) Write in detail about the drug likeness screening with the various filter used in drug likeness screening.

(b) What is cheminformatics? Write in detail about the various tools and steps involved in cheminformatics system.

(c) What do you understand by Force field? Discuss various novel technique used in molecular modeling

SECTION C

3. Attempt any *five* parts of the following: 5 x 7 = 35

(a) Write in detail about the Free-Wilson approach to QSAR.

(b) What do you understand by conformational analysis? Write Different methods used to determine information regarding conformations.

(c) Write in detail about the Quantum mechanics methods of Molecular modelling.

(d) Discuss in detail about the De-novo drug design with steps involved in it.

(e) Differentiate between SAR and QSAR.

(f) Discuss in detail about Ligand-based pharmacophore modeling.

(g) Discuss in detail about various lead discoveries based on traditional medicine with suitable examples.

Printed Pages: 01 Sub Code: BP810ET

Paper Id: 2 3 1 3 1 1 Roll No. | | | | | | | | | | |

B PHARM

(SEM VIII) THEORY EXAMINATION 2022-23

EXPERIMENTAL PHARMACOLOGY

Time: 3 Hours ***Total Marks: 75***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2x 10 = 20

(a) Write full name of CPCSEA and OECD.

(b) Enlist examples of transgenic and mutant animals.

(c) What do you understand by negative control and positive control in animal grouping?

(d) State any two preclinical screening animal models for anti- inflammatory activity.

(e) Explain *In vivo* and *In vitro* methods in preclinical screening.

(f) Define research design.

(g) What is research hypothesis?

(h) Write any two types of graphical representation of data.

(i) Outline any two preclinical screening models for anti-epilepticagent.

(j) Enlist any two tests for a hypotheses testing.

SECTION B

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

(a) Describe the method for production, maintenance and applications of transgenic animals.

(b) How will you perform preclinical screening of antipyretic and analgesic agents via *in vivo* and *in vitro* models?

(c) Explain in detail about data and is graphical representation.

SECTION C

3. Attempt any *five* parts of the following: 5 x 7 = 35

(a) State any two screening methods for antihypertensive drugs.

(b) Discuss about In-vitro screening method for anticancer agent.

(c) Illustrate the screening methods for anti -emetic and anti-diarrhoeal agents?

(d) Explain the anesthesia and euthanasia of experimental animals.

(e) How will you perform preclinical screening for skeletal muscle relaxant agent? Describe any two models.

(f) Explain preclinical screening models for anti-diabetic agents.

(g) Write in detail about preclinical screening models for Diuretics, nootropics.

Printed Pages: 01 **Sub Code:BP-809ET**

Paper Id: 231147 **Roll No.** | | | | | | | | | | |

B PHARM
(SEM VIII) THEORY EXAMINATION 2022-23
COSMETIC SCIENCE

Time: 3 Hours ***Total Marks: 75***

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

(a) Define SPF.

(b) Write the names of two common problems associated with teeth and gums.

(c) Describe prickly heat.

(d) What are mouthwashes?

(e) What is the role of Neem & Clove in oral care products?

(f) Differentiate between shampoo and conditioner.

(g) Write the names of various preservatives used in cosmetics.

(h) What are the skin benefits of aloe and turmeric?

(i) Define cosmetics with examples.

(j) Write various applications of humectants.

SECTION B

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

(a) Write a detailed note on Principles of formulation and building blocks of Hair care products.

(b) Explain basic structure of skin with neat labelled diagram. Write in detail functions of

Skin.

(c) Write a detailed note on Principles of formulation and building blocks of oralcare products.

SECTION C

3. Attempt any *five* parts of the following: **5 x 7 = 35**

(a) Define and classify surfactants with example. Write applications of surfactants.

(b) What is facewash? Enlist the ingredients used in face wash.

(c) Differentiate between cold cream and vanishing cream.

(d) Explain mechanism of action of antiperspirants and deodorants.

(e) Write a brief note on various excipients used in cosmetics.

(f) Write in detail about evolution of cosmeceuticals from cosmetics.

(g) Give the symptoms and treatment of dry skin.

Printed Pages: 01 Sub Code: BP-808ET

Paper Id: 232118 Roll No. | | | | | | | | | | |

B PHARM
(SEM VIII) THEORY EXAMINATION 2022-23
CELL AND MOLECULAR BIOLOGY

Time: 3 Hours *Total Marks: 75*

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a. Differentiate between prokaryotic and eukaryotic cell.

b. Define transgenic animals.

c. Classify various types of RNA.

d. Enlist the function of tRNA and rRNA.

e. Define centromere and genome.

f. What are chaperones?

g. Define genetics.

h. Write the functions of microtubules.

i. Enlist types of G-protein involved in cell transduction signaling.

j. Differentiate between active and passive transport across cell membrane.

SECTION B

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

a. Draw a well labelled diagram of eukaryotic cell. Enumerate the functions of Golgi bodies and Endoplasmic reticulum.

b. Explain the cell cycle in detail. Highlight the check points in cell cycle.

c. Discuss the GPCR mechanism of cell signaling.

SECTION C

3. Attempt any *five* parts of the following: **5 x 7 = 35**

a. Explain the types of cellular reproduction in prokaryotes and eukaryotes.

b. Summarize the process of protein synthesis.

c. Discuss the fluid mosaic model of cell membrane.

d. Write a detailed note on structure and types of proteins.

e. Discuss the Central Dogma of molecular biology.

f. Describe the different phases of mitosis and their significance in cell division.

g. Discuss the types and function of protein kinases.

Printed Pages: 01 **Sub Code: BP-811ET**

Paper Id: 231519 **Roll No.** | | | | | | | | | | |

B PHARM
(SEM VIII) THEORY EXAMINATION 2022-23
ADVANCED INSTRUMENTATION TECHNIQUES

Time: 3 Hours ***Total Marks: 75***

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **2 x 10 = 20**

(a) Differentiate ^{1}H-NMR and ^{13}C-NMR.

(b) What is chemical ionization technique?

(c) What is Thermogram?

(d) What do you mean by Miller Indices?

(e) Define Accuracy and Precision as per ICH guidelines.

(f) How will you calibrate electronic balance?

(g) What is n/p ratio? Mention its significance in radioactivity.

(h) Enlist the radioisotopes used in Radioimmunoassay.

(i) What do you understand by Scanning densitometry in HPTLC?

(j) What is MS-MS technique?

SECTION B

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

(a) Discuss the instrumentation of NMR. Explain relaxation processes.

(b) Describe the principle, instrumentation and applications of DSC.

(c) Explain liquid-liquid extraction principle. Discuss the applications of LC-MS/MS.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

(a) Discuss spin-spin coupling with example. Write the significance of 'J' value.

(b) Describe the fragmentation pathway in mass spectrometry.

(c) Write the principle and application of Thermogravimetric Analysis.

(d) Explain X-Ray crystallography principle and its role in structure elucidation.

(e) Discuss the calibration of HPLC with its parameters as per ICH guidelines.

(f) Discuss the procedure of Radioimmunoassay with its applications.

(g) Explain time of flight mass spectrometer. What is Quasi-equilibrium theory.

BPHARMA
(SEM VIII) THEORY EXAMINATION 2021-22
ADVANCED INSTRUMENTATION TECHNIQUES

Time: 3 Hours ***Total Marks: 75***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a.	Infer the applications of X-Ray diffraction method.
b.	Define the procedure for calibration of UV-Visible spectrophotometer.
c.	What is a coupling constant?
d.	Define spin-spin coupling.
e.	Explain the principle of RIA.
f.	List the stationary and mobile phases used in GC-MS technique
g.	Define the role of a fluorimeter in the structural analysis of pharmaceutical compounds.
h.	Discuss the role of the NMR technique in the structural elucidation of compounds.
i.	Explain the term FAB.
j.	Define the term "time of flight" used in mass spectroscopy.

SECTION B

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

a.	Discuss the principle, instrumentation, and applications of the LC-MS technique.
b.	Elaborate on the fragmentation rules and different fragmentation peaks of mass spectroscopy.
c.	Discuss the following terms i) Differential Thermal Analysis ii) X-Ray Crystallography.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

a.	Discuss the factors affecting the chemical shift in mass spectroscopy.
b.	Summarize the applications of ^{1}HNMR and ^{13}CNMR methods.
c.	Discuss the limitation and applications of Radioimmunoassay.
d.	Explain the principle and procedure of the X-Ray Crystallography technique.
e.	Discuss the principle and procedures involved in the solid-liquid extraction technique.
f.	Explain the principle and applications of Differential Scanning Calorimetry (DSC).
g.	Discuss the detectors used in Nuclear Magnetic Resonance spectroscopy.