Research Methodology and Biostatistics

Research Methodology

Types of research

(a) Literary research
(b) Clinical research
(c) Experimental research
(d) Observation and field studies

Trends and possibilities of R&D of Unani Drugs

Research problems

(a) Definition
(b) Selection and sources of research problems

Hypothesis

(a) Types: Null and alternate hypothesis

Research designs

(a) Types of Research designs

Controls in research designs

(a) Selection criteria
(b) Placebo and plain control
(c) Randomization
(d) Balancing and matching

Factors effecting research results.
Tools and techniques in research

(a) Interview, questionnaire, inventories, scales
(b) Rating scales

Computer programmes used in research

(a) Minitab
(b) SPSS

Protocols for research and report writing

(a) Protocols for experimental, clinical and community based research.
(b) Writing research report.
(c) References in research report.
   (i) Books (ii) Journals (iii) Compedia (iv) Bulletins (v) WHO Reports (vi) Internet Sites

Guidelines for Research

(a) WHO
(b) ICMR
(c) CPCSEA

Bio-Statistics

Scope and utility of Biostatistics

Descriptive Statistics

(a) Analysis of Data
   (i) Data collection, tabulation and presentation of data.
   (ii) Measure of central tendency – Mean, Median and Mode.
   (iii) Measures of dispersion: Range, quartile deviation, standard deviation.
(b) Probability
   (i) Definition and laws of probability
   (ii) Types of probability distribution
(iii) NPC and its application size
(iv) Randomized samples

(c) Sampling

(i) Types and sample size
(ii) Randomized sampling

**Inferential Statistics**

(a) Correlation and linear regression

(i) Karl Pearson correlation coefficient
(ii) Linear regression equations.

(b) Test of significance

(i) ‘t’ test
(ii) ‘z’ test.

(c) Test of variance

(i) ANOVA one way
(ii) ANOVA two way
(iii) $X^2$

(d) Non-parametric tests

(i) Median test, Mann Whitney U test.
(ii) Kruskall Wallis test, Fried test.

**Vital Statistics**

(a) Rate and Ratios

(b) Standardization of population Risk factors
Clinical Biochemistry and Genetics

Part – A

Clinical Biochemistry

Basic chemistry of carbohydrates, lipids, amino acids and proteins.
Enzymes: General characteristics of enzymes & assay methods kinetics assay of some clinically important enzymes.
Vitamins and minerals.
Metabolism of carbohydrate lipids and amino acids
Classification of body fluids and their biochemical co-relation
(General considerations)
Practical (Lab Course)
LFT, KFT, Sugar profile, Lipid profile.
Enzyme assays

Part – B

Genetics

DNA as Genetic Material: Structure of DNA, Structure of RNA
DNA Replication, Transcription, Translation
Mutations : (Basic)
Chromosomal Abrasions
Genetic disorders
Autosomal and sex chromosomal abnormalities
In-born errors of Carbohydrate, protein and lipid Metabolism (General considerations)
DNA based diagnosis
DNA based diagnostic probes
Population based DNA testing
Mutation detection
Gene therapy

UsooleTashkheeswaTajveez
(Principles of Diagnosis and Treatment)

Tashkheeskigharz-o-ghaiyat
Aamlstefsaraat
RudadeMareez (The History Taking)
(a)  Student’s Approach to the Patient
(b)  History Taking
(c)  General Principles of Examination
(c)  The Case History Recording
(d)  Case Presentation
(e)  Interpretation of clinical Data
Umoomiimtehanemareez (General Examination of Patient)
(a) General appearance
(b) Mental and Emotional states
(c) Physical Attitude, gait, physique
(d) Face, eyes, neck, thyroid gland
(e) Lymphatic system
(f) Pulse
(g) Respiration
(h) Temperature
(i) Blood Pressure
(j) Routine Examination
(k) Assessment of functional Impairment

External Manifestations of Disease
a) Inspection of Exterior of the body
b) Abnormalities in Head and Neck
c) Examination of Mouth, Eye and Ear
d) Skin, nails and hair and Special Techniques of the examination
e) Upper limb, lower limb
f) Genitalia.

ImtehanNizameHazm (Examination of Digestive System)
(a) Clinical Symptoms
(b) Examination
(c) Investigations
(d) Recent diagnostic techniques
(e) UsooleIlaj

ImtehanNizameTanaffus (Examination of Respiratory System)
(a) Clinical Symptoms
(b) Examination
(c) Investigations
(d) Recent diagnostic techniques
(e) UsooleIlaj

ImtehannizameQalbwaDauraneKhoon (Examination of Cardiovascular system)
(a) Clinical Symptoms
(b) Examination
(c) Investigations
(d) Recent diagnostic techniques
(e) UsooleIlaj

ImtehannizameBaulwaTanasul (Examination of Urino-Genital system)
(a) Clinical Symptoms
(b) Examination
(c) Investigations
(d) Recent diagnostic techniques
(e) UsooleIlaj and related assessment scales

ImtehannizameAsaab (Examination of The Nervous System)
(a) Clinical Symptoms
(b) Examination
(c) Investigations
(d) Recent diagnostic techniques
(e) UsooleIlaj

ImtehannizameEzamwaMafasil(Examination of Skeletal System)
(a) Clinical Symptoms
(b) Examination
(c) Investigations
(d) Recent diagnostic techniques
(e) UsooleIlaj

ImtehaneNafsani(The Psychiatric Assessment)
(a) Clinical Symptoms
(b) Examination
(c) Investigations
(d) Recent diagnostic techniques
(e) UsooleIlaj

ImtehanGhudadelaqanati(Endocrine System)
(a) Clinical Symptoms
(b) Examination
(c) Investigations
(d) Recent diagnostic techniques
(e) UsooleIlaj

ImtehaneMashaikh(Geriatrics)
(a) Clinical Symptoms
(b) History Taking
(c) Examination
(d) Investigations
(e) Recent diagnostic techniques
(f) UsooleIlaj

Examination of Haemopoietic system
Examination of children
Examination of unconscious patient
Ethical Issues in Medicine

Nabz
(a) SharaiteNabz, TareeqaeImtehan
(b) AjnaseNabz
(c) NabzeMufrad, NabzeMurakkab
(d) AsbaabeNabz
(e) Nabzke Tabai Iktelafaat
(f) NabzkeMarzilkhtelafaat

ImtihanBaul - Nazri
ImtihanBaraaz – Nazri

UsooleIlaj
(a) Ilajkekullitareeqe
(b) Ilajbil’dawakeQavaneen.
(c) AuramkausooleIlaj
Ilaj Bil Tadbeer (Regimenal Therapy)

Introduction, Principles and Scope
Concept, objectives and classification
Tadabeer related with Hawa and atmosphere
Tadabeer related with Diet (Ilaj bil Giza)
Tadabeer related with Ilaj Nafsani & Roohani
Geriatric care
Dal’k (Massage)
(a) Definition, Principles, Objectives
(b) Classification of Dal’k
(c) Description of muscles related to Dal’k
(d) Properties and action of oils used in Dal’k
(e) Effects of adjuvant drugs in Dal’k
(f) Indications and therapeutic uses
(g) Adverse effects
Riyazat (Exercise)
(a) Definition, Principles, Objectives
(b) Classification of Riyazat
(c) Scientific interpretation and effects of Riyazat in certain disease like Sports induced disease
(d) Therapeutic importance and indications
(e) Adverse effects
Hammam (Bathing)
(a) Definition, Principles, Objectives
(b) Types of Hammam
(c) Kinds of Hammam rooms and its importance
(d) Therapeutic uses and indications
(e) Adverse effects
Hajamat (Cupping)
(a) Definition
(b) Types
(c) Sites and procedures of Hajamat
(d) Indications and contraindications
Fasd (Venesection)
(a) Definition
(b) Sites of Venesection
(c) Anatomy and Description of Vessels of Venesection
(d) Instruments used in Venesection
(e) Pre Venesection Procedure
(f) Investigations like Hb%, Bleeding Time, Clotting Time, Prothrombin time, platelet count, blood sugar, Blood group with Rh typing
(g) Procedure and precautions
(h) Indications and Contraindications
(i) Management of Post procedural problems.

IrsaleAlaq (Leeching)
(a) Definition
(b) Description of Leech and its various types
(c) Leech collection, storage and preservation
(d) Leeching procedure
(e) Precautions
(f) Indications and contraindications

Ishal (Purgation)
(a) Definitions, Principles
(b) Indications and contraindications
(c) Drugs used for purgation

Qai (Emesis)
(a) Definition, aims and objectives
(b) Drugs used for Qai
(c) Indications and contraindications

Idrar (Diuresis)
(a) Definitions, aims and objectives
(b) Indications and contraindications
(c) Drugs used for Idrar

Amle Kai (Cauterisation)
(a) Definition, Aims, Objectives
(b) Procedure
(c) Precautions
(d) Indications and contraindications

Nutool (Douching / Irrigation)
(a) Definition, aims and objectives
(b) Indications and contraindications

Huqna (Enema)
(a) Definition, principles, aims
(b) Objectives
(c) Procedure
(d) Drugs used in huqna
(e) Indications and contraindications

Tareeq (Diaphoresis)
(a) Definition, aims and objectives
(b) Methods and Procedures
(c) Indications and contraindications

Inkebaab (Vaporisation)
(a) Definition, aims and objectives
(b) Methods and Procedures
Indications and contra indications

Definitions, aims, objectives, procedures, indications and contraindications of the following regimens

(a) Takmeed, Tikor, Pashoya,
(b) Ialam,
(c) Nushuq, Tadheen, Tazahha, Saoot
(d) Lakhilakha, Tanfees, Sukooob
(e) Imala

AmrazeNizameAasab, AmrazeNafsaniawaGhudadeLaqanati
(Diseases of Nervous System, Psychiatric diseases and Endocrine Systems)

AmrazeNizameAsbi
Sudawaqaasam, Sarsamwaqaasam, Warmedimaghinukhai, WarmeAghshiyaedimagh, Duar, Qoma, Sara, Tashannuj, Rashawaqaasam (Daurraqsaur Parkinsonism), Sakta, KhurajeDimagh, Falij, Laqwa, Istarkha, HuzaleZohri, WajaulAsab, DimaghiSudde, JiryaaneKhoonDimaghi, Alzheimer’s disease

AmrazeNafsaniya
Sahar, Nisyaan, Malankholiya, Mania, Kaboos, IzterabeNafsani, Izmehlaal, Ikhtinaqurraham, Psychosis, Neurosis, Ikhtilaaj, Akhoni (Waham), ShahwateKalbia, JooulBaqar.

GhudadeLaqanati
Ghuddaelaqanatiurunkiifrazatkatasawwuratibakinazarmein (umoomijayaeza)

GhudaaNukhamiya
GhuddaaNukhamiakiefrazatkiqillatwaifrat se hone wale Amraz e.g., KibrulIzm, Qazamah (Dwarfism), Ziabetussada, Salatenukhamiya.

GhudaaDarqiya
GhuddaaDarqiyakeifrazatkiqillatwaifrat se hone wale Amraz e.g., FartedDarqiya (Hyperthyroidism), TasammumeDarqiya, QusooreDarqiyaq, Ghoter (Goiter) Cretinism, OzemaMashati, SalateDarqiya.

GhudaaJanibudDaraiqa
GhuddaaJanibuddarqiyakeifrazatkiqillatwaifrat se hone wale Amraz e.g., Farteduraiqiya (Hyper parathyriodism), QusooreDuraqiya (Hypo parathyriodism).

Banqaras
BanqaraskehissaeLaqanatikeifrazatkiqillatwaifrat se hone wale Amraz e.g., ZiabetusSukkari (Diabetes mellitus), QillateSukkaridum (Hypoglycaemia), SalaeJazeerom (Insulinoma)

GhudaaFauqulKulya
GhuddaaFauqulkulyakeifrazatkiqillatwaifrat se hone wale Amraz e.g., MutalazemaKoshing, Aldosteroma, warmulqawatim (Phoechromocytoma), Addison’s disease, Naqsealdosteromia (Hypo aldosteronism).

Metabolic Disorders
Diabetes mellitus, lipid metabolic disorders, osteoporosis

AmrazeTavarus
SibghiJasdiAmraz (Autosomal disorder), SinfivabastaAmraz (Sex linked diseases).
AmrazeKhusiya
IfrazatKamuktasarjayeza, Khusiyaauramraze bah kahabmitaalluq, JinsiAmraz e.g., Jinsimubtasar (sexual paucity), Aajibuloogh (Delayed or Incomplete puberty), MutlazimaKlinefelter (Klinefelter syndrome), Acquired testicular defects, Infertility, SalateKhusiya, TasaddiurRajal (Gynaecomastia).

AmrazeKhusiyaturRaham
Balooghemubtasar (Isosexual precocious puberty), Turner syndrome, Uqr, SalateKhusiaturraham.

AmrazeNizameTanaffuswaDauraneKhoon, Tauleede Dam, GhudadeLymphaviah
(Diseases of Respiratory, Circulatory, Haemopoetic Systems, Lymph nodes and disease due to atmospheric pollution)

AmrazNizameTanaffus

AmrazeQalbwaDauraneKhoon
Sue mizajeqb, Zoafeqalb, Khaqan, Warm Ghilaafeqalb, Warm Azlateqalb, Warm Batanaeqalb, Warm Batanaeqalbhudaari, zubhaisadria, Ghashi, Izamulqalb, Iflaasulqalb, Maitatulqalb, Suqooteqalbimtelai, Cor pulmonale, Zaghtuddumqavi. SaqootDauraneKhoonsatahi, Tasallubesharayeen, Anurisma, Manuatulqalb, Cardiac arrhythmia, Khilqiamrazeqalb, Butueqalb, Cardiac arrest, Cardiac failure, Sadma Heart block, pericardial diffusion

AmrazeQalbwaQalbwaDauraneKhoon
Tazaiuqurraseen (mitral stenosis), qusoorurraseen (mitral incompetence), tazaiuqaurata (aortic stenosis), qusooraurata (aortic incompetence).

AmrazeSharayeenwaaurida (Diseases of vessels)
Atherosclerosis, Aneurism, thrombophlebitis, Burger’s disease, Raynaud’s disease and other vascular diseases.

Taftishaat
AmrazeQalbwaDauraneKhoonkejaanchkemukhtalfiqadeemwajadeedtareeqonke bare meinmalumat. (e.g. ECG, Echocardiography, Cardiac imaging, Catheterization etc.)

Amraze Dam
Faqruddam, Abyazuddam, Thalasaemia, FasadeKhoon, NazafuddamMizaji, AmrazeInjimaduddam.thrombocytopenia

Immunological Disorders
Haemopoetic system
Lymph nodes and disease due to atmospheric pollution

AmrazeNizameHazm, BaulwaTanasulwaIstahala
(Diseases of Digestive &Uro-genital systems and Metabolism)
Approach towards a patient with Gastrointestinal Disease

AmrazFam (Diseases of Mouth)
Amraz Mari (Diseases of Oesophagus)
Amraz Maedah (Diseases of Stomach)
- Zofemedah
- Sue mizajemedahWarmemedah
- Qarho-e-medah-o-asna-e-ashari (Peptic Ulcer Disease)
- Kasrat-o-qillat-e-hamoozat-e-maedi
- Sartaan-e-medah (Carcinoma of Stomach).
- Tukhma
- Sue-e-hazm

AmrazAmaa (Diseases of Intestines):
- Zarb-o-khilfa (Malabsorption Syndrome).
- Disorders of Absorption
- Ishaal (Diarrhoea).
- Zalaqul-ama.
- Qoolanj-e-ama (Intestinal colic).
- Baraz-ud-dam (Melena).
- Warm-e-qaulon (Inflammatory Bowel Disease).
- Warm-e-qaulonqarhi. (Ulcerative colitis)
- Diqq-e-ama (Intestinal Tuberculosis).
- Iltehaab-e-miqad (Proctitis).
- Acute Appendicitis and Peritonitis
- Irritable Bowel Syndrome,
- Intestinal Obstruction
- Common Diseases of Colon and Anorectum

Diseases of Liver and Biliary Tract:
- Zofekabid.
- Su-e-mizaj-e-kabid.
- Warm-e-kabid (Hepatitis).
- Dubelatulkabid (Liver abscess).
- Yerqaan. (Hyperbilirubinemia)
- Alcoholic liver Disease
- Talaiuf-e-kabid (Cirrhosis of liver)
- Hepatic Failure
- Carcinoma of liver.
- Iスタスqa (Ascitis).
- Izmulkabid (Hepatomegaly).
- Hisatulmirara (Cholylihiasis)
- Warm e mirara (Cholecystitis).
- Other Biliary Diseases

AmrazTihal (Diseases of Pancreas):
- Warm-e-banqaraas (Pancreatitis).
All modern diagnostic procedures related to Digestive system.
Amraz-e-Nizam-e-Baule-o-TanassulwaIstahala (diseases of urinary and reproductive system and metabolism)

**Diseases of Urinary System:**

**Diseases of Kidney:**
- Sū-e-mizaj-e-kuliya
- Zofe kuliya
- Warm-e-kuliya (Glomerulonephritis)
- MutafarriqueAmraz-e-kuliya
- Diqulkuliya. (Renal Tuberculosis)
- Saqootulkuliya (Renal paranchymal Disease, Acute and Chronic Renal Failure).
- Nephrotic Syndrome
- Warm-e-Hauzulkuliya (Pyelo-nephritis).
- Hisatulkuliya (Renal calculi).
- Hydronephrosis.
- Incontinence of urine.
- Baulud dam (Haematuria).
- Renal lesions in diabetes.
- Urinary Tract Diseases
- All modern diagnostic procedures related to Uro-genital system

**Diseases of Reproductive System:**
- Zofebaah
- Surrat-e-inzal.
- Kasrat-e-Ehtalaam
- Aurmutaliqueamraz
- Salpingitis
- Oophoritis
- Per vaginal Bleeding Disorders (Menorrhagia, Metrorrhagia etc.)
- Proctitis
- Sterility

**Diseases of Metabolism:** Common metabolic disorders and diseases\%

**AmrazeMutaddiyah, Hummiyat, JildwaMafasil**
(Infectious diseases, Fevers and Diseases of Skin & Joints and Autoimmune disorders)

**AmrazeMutaddiyah (Infectious diseases)**
- Mana’at and Tadiya
- Importance of Mana’at in the treatment of infectious diseases
- Classification of Infectious Diseases
- Micro-organism and host interaction
- Nosocomial Infections
- Bacterial Diseases
- Viral Diseases
Fungal Diseases
Protozoal Diseases
Helminthic Diseases
HIV and associated disorders

Hummiyat (Fevers)
Tareef-e-Humma
Ufoonat
AamUsooleIlaj

Amraaze-Jild (Skin Diseases)
Applied anatomy of Skin
Functions and classification of skin
Examination of Skin and an approach to diagnosing skin diseases
Principles of therapy
Disorders of pigmentation
Disorders of nails
Diseases of Hair
Different Skin Diseases
Skin Infections and Infestations Skin in systemic diseases
Management of skin diseases cosmetology

Amraz-e-Mafasil (Rheumatology)
Clinical examination of musculoskeletal system
Applied anatomy, physiology and Investigations
Major manifestations of musculoskeletal diseases
Niqris (Gout)
WajaulMafasil (Arthralgia)
Warme-Mafasil (Arthritis)
TahajjurMufasil (Fixation of Joint)
Irqun-Nisa (Sciatica)
WajawulZahar (Backache)
WajawulKhasra (Low Backache)
WajawulQutn (Lumbago)
Osteoporosis
Ankylosingspondylosis

Principles of Management of musculoskeletal disorders