

FEDERAL PUBLIC SERVICE COMMISSION
(Curriculum & Research Wing)

Scheme and Syllabi for Screening/Professional Tests as well as Descriptive Examination
Relating to Posts Advertised Vide Consolidated Advertisement No. 11/2015

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Main Topics
1.	127/2015	Official Reporter (Urdu) (BS-17), National Assembly Secretariat, Islamabad	i) Second Class or Grade 'C' Bachelor's degree from HEC recognized University. ii) Urdu Shorthand Speed 120 W.P.M iii) Urdu Typing Speed 50 W.P.M iv) Proficiency in relevant Computer Software	<ul style="list-style-type: none"> • Urdu Typing Test with minimum Speed of 50 W.P.M • Urdu Shorthand Test with minimum Speed of 120 W.P.M 	50 Marks 50 Marks
2.	129/2015	Zoologist (BS-17), Zoological Survey of Pakistan, Ministry of Climate Change	i. Second Class or Grade 'C' Master's Degree in Zoology or equivalent from a recognized University. ii. Two (2) years post qualification experience of research in Systematic Zoology or field surveys.	Objective Type Test (MCQ) <u>Part-I</u> English = 20 marks <u>Part-II</u> Professional Test=80 marks	<u>Part-I</u> Vocabulary, Grammar Usage, Sentence Structuring <u>Part-II</u> <ul style="list-style-type: none"> • Eco System, • Classification of Fish, Reptiles, Mammals, • Classification of Molluscan, Echinoderm, • Species Detailed Account, • Theories of Evolution, • Mammalian Hormonal System, • Membrane System, • Mammalian Gametogenesis and Fertilization, • Multiple Alleles. • Mendel's law of inheritance, • Reproduction and Development, • Research Techniques • Report Writing

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Main Topics
3.	137/2015	Assistant Draftsman (BS-17), National Assembly Secretariat, Islamabad	i) Second Class or Grade 'C' LLB from HEC recognized University. ii) Three (3) years post qualification experience in Judicial/ Legal/ Legislative drafting in Govt Organizations/ Semi-Govt Organizations/ Autonomous Bodies. OR An Advocate having Three (3) years practice with training or experience in Judicial/ Legal/Legislative drafting	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Techniques of Legislative Drafting • Effect of repeal in enactment • Prospective and Retrospective Legislation • Domain of Criminal Law and Criminal Procedure • Techniques of sub-ordinate Legislation • Legislative procedure of an Ordinance • Importance of language and use of words in Legislative Drafting • Legislative process for FATA and PATA • Main parts of a Bill • Procedure of converting a Bill into Law • Drafting of Statutes and Statutory Rules
4.	138/2015	Programmer (BS-17), National Assembly Secretariat, Islamabad	i) Second Class or Grade 'C' MCS/ M.Sc. in Computer Science/ IT/ Information Security/ Software Engineering or any other equivalent Degree from HEC recognized University. ii) Three (3) years relevant post qualification experience rendered in Public/ Private Sector.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Programming in PHP, Ajax and Java Script • Designing, Analyzing, Maintenance & Testing of Software • Coding, Debugging, Testing and Documenting of Application Programme • Installation and Testing Software Package • Software Development Process, • Software Architecture, • Software Maintenance & Optimization
5.	148/2015	Security Officer (BS-17), Pakistan Meteorological Department, Cabinet Secretariat (Aviation Division)	Released or Retired Captain/ Major or equivalent of the Armed Forces. OR i) Second Class or Grade 'C' Bachelor's Degree from a university recognized by the HEC. ii) Five years post qualification experience of Security in Govt. / Semi-Govt. / reputable Organization.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Basic Arithmetic. • Basic Security Measures. • Current Affairs related to Pakistan's Security Environment. • Security, Threats and Prevention Measures Against Breach of Security. • Fire Prevention and Fire Fighting Measures.

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Main Topics
6.	150/2015	Electronic Engineer (BS-17), Pakistan Meteorological Department, Cabinet Secretariat (Aviation Division)	B.E./ B.Sc. Engineering in Mechanical/ Electrical /Electronics/ Instruments from a university recognized by HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Power Electronics. • Digital Electronics. • Operational Amplifiers. • Electronic Instrumentations. • Logic Design & Switching Theory. • Circuit Theory, Electric Current and Ohm's law • Batteries • Electrostatics • Magnetic Circuits • Electrical Engineering Materials • Instruments and Measurements • DC Generators. • Transformers. • Transmission and Distribution Cables. • High Voltage Engineering • Rectifiers and Convectors.
7.	152/2015	Nautical Instructor (BS-17), Pakistan Marine Academy Karachi, Ministry of Ports and Shipping.	i) Second Mate (Foreign Going)/ Mate Home Trader/ Sub-Lieut (S.D)/ Hony. Sub-Lieut (S.D). ii) Two (2) years experience as Instructor in a training Establishment for Sailors or equal number of Sea Service in the Rank.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test = 80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Teaching GP-III Trainees • Conduct of Short Mandatory Courses like First Aid, Survival at Sea, Fire Fighting, etc. • Navigation and handling of Boats • Planning and Development alongwith practical instructions in General Seamanship.

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Main Topics
8.	153/2015	Administrative Officer (BS-17), Pakistan Meteorological Department, Cabinet Secretariat (Aviation Division)	i) Second Class or Grade 'C' Master's Degree from a university recognized by HEC. ii) Two years post qualification experience in Admin./ Establishment/ Recruitment of Personnel/ Budget and Accounts	Objective Type Test (MCQ) <u>Part-I</u> English = 20 marks <u>Part-II</u> Professional Test=80 marks	<u>Part-I</u> Vocabulary, Grammar Usage, Sentence Structuring <u>Part-II</u> <ul style="list-style-type: none"> • Institutional Management, • Financial Management, • General Financial Rules (I & II) • Rules of Business as amended • Secretariat Instructions & Office Procedure • Civil Servants Act, 1973 and Rules made thereunder • Civil Servant (Appointment, Promotion & Transfer), Rules 1973 • Government Servant (Efficiency & Discipline) Rules, 1973 • Revised Leave Rules, 1980 • System of Financial Control and Budgeting 2006 • Public Procurement Regulatory Authority (PPRA) Rules, 2004 • Proceeding the Legal Cases of the Department
9.	154/2015	Research & Audio Visual Officer (BS-17), Management Services Wing, Establishment Division.	i. Second Class or Grade 'C' Bachelor's degree in Design/ Fine Arts. ii. Five (5) years post qualification experience of work in handling of office Machines/ Equipment. (Experience in Printing press would be an additional qualification).	Objective Type Test (MCQ) <u>Part-I</u> English = 20 marks <u>Part-II</u> Professional Test=80 marks	<u>Part-I</u> Vocabulary, Grammar Usage, Sentence Structuring. <u>Part-II</u> <ul style="list-style-type: none"> • Repair & maintenance of Computers, photocopiers and audio visual equipments • Procedure for purchase of Computers, photocopiers and audio visual equipments • Advance Technological Development for Operations of Computers, photocopiers and audio visual equipments • Techniques for fixation of audio visual equipments • Working of Printing Press. • Public Procurement Rules, 2004

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Main Topics
10.	156/2015	Occupational Therapist (BS-17), Directorate General of Special Education, Capital Administration and Development Division.	i) Second Class or Grade 'C' Bachelor's Degree in Occupational Therapy ii) Three (3) years post qualification experience in the relevant field.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Concept of Occupational Therapy and its functions • Common Neurological Disorders • Role of Occupational Therapy while dealing with the patient with Neurological Conditions • Adopted devices and their functions • Role of Occupational Therapy in Rehabilitation of Cerebral Palsied Children • Role of Occupational Therapy in Activities of Daily Living • Occupational Therapy as Supportive Measures • Occupational Therapy for Blind and Visually Impaired • Occupational Therapy in Geriatrics • Occupational Therapy for Children and Adolescents with Psychological Disorders.
11.	157/2015	Physiotherapist (BS-17), Directorate General of Special Education, Capital Administration & Development Division.	B.Sc. in Physiotherapy.	Objective Type Test (MCQ) Part-I English =20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Anatomy • Biochemistry • Community Medicine & Sociology • Electrotherapy & Actinotherapy • Kinesiology • Medical Physics • Physiotherapy Skills & Techniques • Therapeutic Exercises & Techniques
12.	158/2015	Civilian Medical Practitioner (CMP), (BS-17), Ordnance Corps, Ministry of Defence.	MBBS or equivalent qualification recognized by the Pakistan Medical & Dental Council.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar usage, Sentence Structuring. Part-II <ul style="list-style-type: none"> • Core Subjects of MBBS Programme • Health Policy of the Government. • Care Vs Cure for Health Management

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Main Topics
13.	159/2015	Assistant Private Secretary (BS-16), Ministry of States & Frontier Regions.	i. Second Class or Grade 'C' Bachelor's degree from a University recognized by HEC ii. Minimum shorthand speed 100 w.p.m. and typing speed 50 w.p.m. iii. Must be computer literate.	<ul style="list-style-type: none"> • Typing Test with minimum Speed of 50 W.P.M • Shorthand Test with minimum Speed of 100 W.P.M 	50 Marks 50 Marks
14.	164/2015	Assistant Private Secretary (BS-16), Naval Headquarters, Ministry of Defence.	i. Second Class or Grade 'C' Bachelor's degree from a University recognized by HEC ii. Minimum shorthand speed 100 w.p.m. and typing speed 50 w.p.m. iii. Must be computer literate.	<ul style="list-style-type: none"> • Typing Test with minimum Speed of 50 W.P.M • Shorthand Test with minimum Speed of 100 W.P.M 	50 Marks 50 Marks

**Syllabi for Written Examination (Descriptive) for
Professor (BS-20), FM &DC, Cabinet Division,
(Case No. 141/2015)**

Minimum Qualification & Experience:

- i) M.B.B.S or equivalent medical qualifications recognized/registered by the Pakistan Medical & Dental Council (PM & DC)
- ii) PM& DC recognized Level II b or Level III qualifications in the respective basic subjects.

OR

Equivalent PM& DC Level II b or Level III qualifications in the respective specialty approved for teaching by SRC and recognized / registered by PM & DC.

- iii) Three (3) years post qualification teaching experience as Associate Professor in the respective subject.

OR

- iv) A total of at least five (5) research publications published in a medical journal approved by the PM & DC shall be acceptable. Dissertations/Thesis shall not be counted.

Categories:

- A. Anatomy
- B. Physiology
- C. Biochemistry
- D. Forensic Medicine
- E. Community Medicine
- F. Pharmacology.

PAPER: ENGLISH (100 MARKS)

English Essay: Candidates will be required to write an Essay in English from three topics comprising approximately **2000 words**. Candidates are expected to reflect comprehensive and research based knowledge on a selected topic. Candidate's articulation, expression and technical treatment of the style of English Essay writing will be examined.

OR

Case Study: Candidates will be given real situation case studies related to advertised posts/organization concerned and will be expected from the candidates to present (i) identification of issues (ii) evaluation of issues (iii) legal or case related theories (iv) evaluation of case facts if required and (v) possible solution of the case or writing judicial order, if the case so requires.

Syllabi for Written Examination (Descriptive) for all posts in BS-18 & BS-19

PAPER-I: ENGLISH (100 MARKS)

- (i) **English Essay-50 Marks:** Candidates will be required to write an Essay in English comprising **1500 words** from a set of **six given topics**. Candidates are expected to reflect comprehensive and research based knowledge on a selected topic. Candidate's articulation, expression and technical approach to the style of English Essay writing will be examined.
- (ii) **English (Composition and Précis)-50 Marks:**
The examination will test the candidate's abilities to handle Précis Writing, Reading Comprehension, Sentence Structuring, Translation, Grammar and Vocabulary, etc.
- Précis Writing (10 marks):** A selected passage with an orientation of generic understanding and enough flexibility for compression shall be given for précising and suggesting an appropriate title.
- Reading Comprehension (10 marks)**
A selected passage that is rich in substance but not very technical or discipline-specific shall be given, followed by five questions, each carrying 2 marks.
- Grammar and Vocabulary (10 marks):** Correct usage of Tense, Articles, Prepositions, Conjunctions, Punctuation, Phrasal Verbs, Synonyms and Antonyms etc.
- Sentence Correction (5 marks):** Ten sentences shall be given each having a clear structural flaw in terms of grammar or punctuation. The candidates shall be asked to rewrite them with really needed correction only, without marking unnecessary alterations. No two or more sentence should have exactly the same problem, and 2-3 sentences shall be based on correction of punctuation marks.
- Grouping of Words (5 marks):** A random list of ten words of moderate standard (neither very easy nor utterly unfamiliar) shall be given, to be grouped by the candidates in pairs of those having similar or opposite meaning, as may be clearly directed in the question.
- Pairs of Words (5 marks):** Five pairs shall be given of seemingly similar words with different meanings, generally confused in communication, for bringing out the difference in meaning of any five of them by first explaining them in parenthesis and then using them in sentences.
- Translation (5 marks):** Ten short Urdu sentences involving structural composition, significant terms and figurative/idiomatic expressions shall be given, to be accurately translated in English.

SUGGESTED READINGS

Sr. No.	Title	Author
1.	English Grammar in Use	Raymond Murphy (Cambridge University Press)
2.	Practical English Usage	M. Swan (Oxford University Press)
3.	The Little, Brown Handbook	H. Ramsey Flower & Jane Aaron (The Little, Brown & Co; Harper Collins)
4.	A University English Grammar	R. Quirk & S. Greenbaum (ELBS; Longmans)
5.	Write Better, Speak Better	Readers Digest Association
6.	Modern English in Action	Henry Christ (D.C. Heath & Co.)
7.	Exploring the World of English	Syed Saadat Ali Shah

PAPER-II: PROFESSIONAL (100 MARKS)

Deputy Secretary (Legislation) (BS-19),

National Assembly Secretariat

(Case No. 131/2015)

Minimum Qualification & Experience:

- i) LLM/LLB from HEC recognized University.
- ii) An advocate of the High Court having seven (7) years practice or an Advocate who has been dealing with service cases during the said period.

Law: 100 Marks

I. Definition and Scope:

Definition of Constitutional Law, Basic Constitutional Concepts (Constitutional Conventions, Rule of Law, Due Process), Constitutional Structures (Parliamentary, Presidential, Separation of Powers), Judiciary (Independence of Judicial Review, Theories of Constitutional Interpretation) Fundamental Human and Political Rights and Civil Liberties (freedom of speech, association, assembly, movement and Right to Counsel, life, property, religion, privacy, self incrimination, double jeopardy).

II. Principles of Constitutional Law:

Principles of Constitutional with special reference to United Kingdom, United States of America, France, Russia, China, Pakistan, India and Turkey.

III. Constitutional History of Pakistan:

Law of Pakistan, Salient feature of the Government of India Act, 1935, Indian Independence Act 1947, Objectives Resolution 1949, Constitutions of 1956, 1962 and 1973 Constitution, Abrogation of the Constitutions and the Martial Laws, Legal Framework Order, 1970, The PCO of 1981, The RCO of 1985, The LFO-2002, Amendments in the 1973 Constitution.

IV. Relation between International Law and State Law:

Article 38 of the Statute of International Court of Justice, Primary Sources of International Law, Subsidiary Sources of International Law, International Soft Law

V. State in General and Recognition:

Personality and Statehood in International Law, The Subjects of International Law, Recognition of State and Government in International Law, Recognition of State and Government in National Law.

VI. The Settlement of International Disputes:

Negotiation, Mediation and Good Offices, Inquiry, Settlement by the United Nations, Conciliation, Arbitration, The International Court of Justice.

VII. Islamic Family Law:

Marriage, Dower, Divorce, Separation by Repudiation (Talaq), Separation by Mutual Agreement (Khula), Judicial Separation (Faskh), Post-Divorce Maintenance, Child Custody, Succession

VIII. Islamic International Law**IX. The Federation of Pakistan, President and its Roles as Head:**

Conditions of President's office and Term of his office, President's powers, Removal or impeachment of President, Chairman or Speaker to act as, or perform functions of President, Duties of the PM in relation to the President under 18th Amendment.

X. National Assembly:

National Assembly, Duration of National Assembly, Speaker and Deputy Speaker of National Assembly, Summoning and prorogation of Parliament, Voting in Assembly and quorum, Address by President, Dissolution of National Assembly

XI. The Senate:

Chariman and Deputy Chariman, Qualification and Disqualification for Membership of the Senate, Vacation of seats in the Senate, Privileges of the Members

XII. Legislative Procedure:

Rules of procedure, Courts not to inquire into proceedings of Parliament, Introduction and Passing of Bills including Money Bills, Procedure at joint sitting, Procedure with respect to Money Bills, President's assent to Bills

SUGGESTED READINGS

S.No.	Title	Author
1.	Comparative Constitutional Law	Hamid Khan & M.W. Rana
2.	Constitution of Pakistan 1973	Shabbar Raza Rizvi
3.	Introduction to the Study of the Law of the Constitution	Dicey
4.	Constitutional & Political History of Pakistan	Hamid Khan, Advocate
5.	Constitutional Documents of Pakistan	Safdar Mahmood
6.	International Law	Malcolm N. Shaw
7.	Principles of Public International Law	Lan Brownlie
8.	International Law	Dr. S.K. Kapoor
9.	Introduction to International Law	J.G. Starke, QC
10.	Family Law in Islam	Dr. Mohammad Tahir Mansuri

PAPER-II: PROFESSIONAL (100 MARKS)

**Draftsman (BS-19),
National Assembly Secretariat
(Case No. 132/2015)**

Minimum Qualification & Experience:

- i) Second Class or Grade 'C' LLB from HEC recognized University.
 ii) At least ten (10) years post qualification experience in Judicial/ Legal/Legislative drafting in Govt Organizations/ Semi-Govt. Organizations / Autonomous Bodies.
 OR
 An Advocate having seven (7) years practice with training or experience in Judicial/ Legal/ Legislative drafting.

Law: 100 Marks**I. Definitions of Crime****II. All Provisions of:**

- i. Concept of arbitration, arbitration with or without intervention of court and in civil suits.
 ii. Establishment of Civil Courts with their Original & Appellate Jurisdiction.
 iii. The Code of Civil Procedure, 1908
 iv. Pakistan Panel Code, 1860
 v. Qanun-e-Shahdat Order, 1984
 vi. Criminal Procedure Code, 1898

SUGGESTED READINGS

S.No.	Title	Author
1.	Pakistan Panel Code, 1860	M. Mahmood
2.	Criminal Procedure Code, 1898	Shaukat Mahmood
3.	Law of Evidence	Justice (R) Khalid ur Rahman Khan as adapted from Principles and Digest of the Law of Evidence by M. Monir
4.	Qanun-e-Shahdat Order, 1984	
5.	The Code of Civil Procedure, 1908	Aamir Raza A. Khan
6.	The Arbitration Laws in Pakistan	M. Mahmood
7.	Civil Courts Ordinance, 1962	Nisar Ahmad Nisar

PAPER-II: PROFESSIONAL (100 MARKS)

**Deputy Draftsman (BS-18),
National Assembly Secretariat
(Case No. 134/2015)**

Minimum Qualification & Experience:

- i) Second Class or Grade 'C' LLB from HEC recognized University.
- ii) Five (5) years post qualification experience in Judicial/ Legal/Legislative drafting in Govt Organizations/ Semi-Govt. Organizations / Autonomous Bodies.

OR

An Advocate having five (5) years practice with training or experience in Judicial/ Legal/ Legislative drafting.

Law: 100 Marks**I. Definitions of Crime****II. All Provisions of:**

- i. Concept of arbitration, arbitration with or without intervention of court and in civil suits.
- ii. Establishment of Civil Courts with their Original & Appellate Jurisdiction.
- iii. The Code of Civil Procedure, 1908
- iv. Pakistan Panel Code, 1860
- v. Qanun-e-Shahdat Order, 1984
- vi. Criminal Procedure Code, 1898

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S.No.	Title	Author
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2.	Criminal Procedure Code, 1898	Shaukat Mahmood
3.	Law of Evidence	Justice (R) Khalid ur Rahman Khan as adapted from Principles and Digest of the Law of Evidence by M. Monir
4.	Qanun-e-Shahdat Order, 1984	
5.	The Code of Civil Procedure, 1908	Aamir Raza A. Khan
6.	The Arbitration Laws in Pakistan	M. Mahmood
7.	Civil Courts Ordinance, 1962	Nisar Ahmad Nisar

PAPER-II: PROFESSIONAL (100 MARKS)

**Deputy Director (I.R) (BS-18),
National Assembly Secretariat
(Case No. 135/2015)**

Minimum Qualification & Experience:

- i) Second Class or Grade 'C' Master's Degree in International Relations/ Globalization and World Economy from HEC recognized University.
- ii) Five (5) years relevant post qualification experience in Public/ Private Sector.

International Relations: 100 Marks

I. Introduction

- The Definition and Scope of International Relations.
- The Nation-State System
- Evolution of International Society

II. Theories and Approaches

- The Classical Approaches-Realism and Idealism
- The Scientific Revolution-Behavioural Approach, System Approach,
- Neo-realism, Neo-liberalism.
- Post-modernism, Critical Theory, Feminism, Constructivism

III. International Political Economy.

- Theories in IPE: Mercantilism, Economic Liberalism, and Neo- Marxism
- Theories of Imperialism, Dependence and Interdependence discourse

IV. International Political Institution

- United Nations
- International Monetary Fund (IMF)
- World Bank
- International Court of Justice

V. International and Regional Organizations

- League of Nations, United Nations, Regional Organizations, EU, ASEAN, NAFTA, SAARC, SCO, OIC, ECO, WTO.
- Reforms in the United Nations, World Bank and the IMF

VI. South Asia

- Peace-making and Peace-Building in South Asia: Analytical overview of peace processes between/among the states of South Asia especially between India and Pakistan.
- India and Pakistan: Overview of agreements and accords, Indus Water Treaty; Composite Dialogue; Sir Creek & Siachen border, Visa and People to people contact; Trade; and Role of civil society
- Afghanistan: Cold war theatre; Soviet Invasion and Mujahedeen; Geneva Accord; Post Cold War situation---Rise of Taliban, AL-Qeada & 9/11; Operation Enduring Freedom; The Bonn Process- Withdrawal

VII. Weapons of Mass Destruction

- Proliferation of Nuclear Weapons
- Nuclear Weapon States- Programs and Postures: Indian-Pakistan Nuclear Doctrines
- Nuclear Non –Proliferation Regime: International Atomic Energy Agency, Nuclear Non- Proliferation Treaty; Nuclear Supplier Group;
- Challenges of Non-Proliferation, Cooperation for Nuclear Energy
- The Missile Defence Systems and their impact on global strategic environment

VIII. Contemporary Issues

- Kashmir Issue
- Palestine Issue

SUGGESTED READINGS

S.No.	Title	Author
1.	World Politics: Trend and Transformation, Ninth Edition	Charles W. Kegley JR. and Eugene R Wittkopf
2.	The Globalization of World Politics: An Introduction to International Relations	John Baylis and Stev Smith,
3.	Theories of International Relations	Scott Burchill and Andrew Linklater
4.	Arms Control: The New Guide to Negotiations and Agreements	Jozef Goldblat
5.	Pakistan's Foreign Policy : An Historical Analysis	S.M. Burke
6.	International Relations: Politics and Economy in the 21st Century	William Nester
7.	Nuclear Risk Reduction Measures and Restraint Regime in South Asia	Zafar Nawaz Jaspal
8.	The India- Pakistan Military Standoff; Crisis and Escalation in South Asia (United States	Zachary S. Davis,

For Category-C (Forensic Medicine)

Part-I: (Qualification Based) 50 Marks

Core courses of **MBBS Degree**

Part-II: (Professional) 50 Marks

Core courses of Level II b qualification in **Forensic Medicine.**

For Category-D (Pharmacology)

Part-I: (Qualification Based) 50 Marks

Core courses of **MBBS Degree**

Part-II: (Professional) 50 Marks

Core courses of Level II b qualification in **Pharmacology.**

PAPER-II: PROFESSIONAL (100 MARKS)

**Director/Principal Meteorologist (BS-19), Pakistan Meteorological Department,
Cabinet Secretariat (Aviation Division)**

(Case No. 149/2015)

Minimum Qualification & Experience: Ph.D. in Meteorology/Seismology/Hydro-Meteorology/ Hydrology/ Geophysics/ Geology/ Geography/ Physical Chemistry/ Physics/ Mathematics/ Environment/ Space Science/Agriculture Meteorology/Computer Science or equivalent in the field of Meteorology from a university recognized by HEC with 08 years post qualification experience in BS-17 and above.

OR

M.Phil in one of the above subjects from a university recognized by HEC with 10 years post qualification experience in BS-17 and above in the field of Meteorology

OR

- i. Second Class or Grade 'C' Master's Degree in one of the above subjects or equivalent in the field of Meteorology from a university recognized by HEC with 12 years post qualification experience in BS-17 and above.
- ii. Graduation with Physics or Mathematics from a university recognized by HEC

Meteorology: 100 Marks

The Composition and Structure of Earth's Atmosphere, Hydrostatic Equation and its Applications, The Clausius-Clapeyron Equation, The Poisson's Equation, Adiabatic Processes, Parcel Concepts, Stability in the Atmosphere, Moisture in the Atmosphere, The Tephigram, Skew-T Log-P Diagram, Solar and Terrestrial Radiation, The Greenhouse Effect, Energy Balance at the Earth's Surface, Net Radiation, Free and Forced Convection, Temperature Inversions.

Cloud Formation, Cloud Classification, Precipitation Processes, Forms of Precipitation, Thunderstorms, Tornadoes, Hurricanes, Tropical Cyclones, Cyclones and Anti-Cyclones, Pressure Gradient Force, Coriolis Force, Friction, Geostrophic Wind, Gradient Wind, Thermal Wind, Land-Sea and Mountain- Valley Breezes, Chinook and Katabatic Winds, Jet Streams, Air Masses, Weather Fronts, Meteorological Satellites, Interpretation of Weather Satellite Imagery, Automatic Weather Stations, Weather Maps, Weather Symbols, Weather Forecasting,

The Earth's Atmosphere, Stratospheric Ozone Depletion, Energy and Radiation, Sun Angle and Seasons, Solar Radiation in the Atmosphere, Radiation Balances, Energy and Temperature, Daily Temperature Variations, Global Temperature Controls, Atmospheric Optics, Atmospheric Humidity, Cooling Processes, Condensation, Lifting Mechanisms, Static Stability, Inversions, Cloud Droplets Atmospheric Pressure, Horizontal Flow Aloft, Rotating Motion, Surface Flows, Tropical Hadley Circulation, General Circulation, Thermal Winds, Thermally Direct Circulations, Down slope Winds, Polar Front Theory, Surface and Upper Air Weather Charts, Radar Meteorology,

Winter and Summer Rain Process, Monsoon, Floods and Drought, Meteorological Instruments (Thermometer, Barometer, Anemometer, Wing Vane, Radiometer, Sunshine Recorder etc.), Fog Formation, Impact of Fog on Crop Production.

SUGGESTED READINGS

Sr. No.	Title	Author
1.	An Introduction to Atmospheric Physics	Andrews D G
2.	An Introduction to Atmospheric Thermodynamics	Tsonis A A
3.	Meteorology Today	Donald A C
4.	Essentials of Meteorology	Macintosh D H & Thom S A
5.	Atmosphere weather and climate	Barry R
6.	Climate change causes effects and solutions by Atmospheric change	John T H
7.	Monsoon	Bin Wang

PAPER-II: PROFESSIONAL (100 MARKS)
Assistant Professor Statistics (Male) (BS-18),
Federal Government Educational Institutions (Cantts/Garrisons), M/O Defence.
 (Case No. 161/2015)

MINIMUM QUALIFICATION/ EXPERIENCE: Ph.D. Degree in Statistics with one (1) year post qualification teaching experience at College/ University level **OR** M. Phil Degree in Statistics with three (3) years post qualification teaching experience at College/ University level **OR** Second Class or Grade 'C' Master's Degree in Statistics with five (5) years post qualification teaching experience at College/ University level.

Part-I: (Statistics)

50 Marks

I. Descriptive Statistics

Definition, Importance and scope of Statistics, Descriptive and Inferential Statistics, Presentation of the Data, Tables, Graphs and Charts: Stem-and leaf diagram, Box and Whisker Plots. Measures of Central Tendency/location, Measures of Dispersion/Variability: Measures of Skewness and Kurtosis.

II. Basic Probability

Basic Probability Concepts, Additive and Multiplicative laws of Probability, Joint and Marginal Probabilities, Conditional Probability and Statistical Independence, Bayes' rule. Concept of a Random Variable, Mathematical Expectations, Discrete and Continuous Random Variables, Probability Distribution, Mean and Variance of a discrete random variables.

III. Probability Distributions

Discrete and Continuous Probability Distributions. Properties & applications of Binomial, Poisson, Hyper-geometric Distributions. Normal Distribution and its properties, Standard Normal Curve, Normal approximation to Binomial and Poisson distribution.

IV. Regression Analysis & Correlation Analysis

Concepts of Regression and Correlation and their application, Simple and Multiple Linear Regression (upto three variables), Estimation of the Parameters, Method of least square, Inference regarding regression parameters

Correlation, Correlation Coefficient, Properties of Correlation Coefficient, Inference regarding correlation coefficient, Partial Correlation and Multiple Correlation (upto three variables).

V. Sampling & Sampling Distributions

Population and Sample, Advantages of Sampling, Sampling Design, Probability & Non-Probability Sampling techniques. Brief Concepts of Simple Random, Stratified, Systematic, Cluster, Multiple and Multistage Sampling. Purposive, Quota Sampling, Convenience & Accidental Sampling.

Sampling with and without replacement, Application of Central Limit Theorem in Sampling, Sampling Distribution of Mean, difference between two Means, Proportion, difference between two Proportion and Variance.

VI. Statistical Inferences

Estimation: Point Estimation, Properties of a good Estimator. Interval Estimation. Interval Estimation of Population mean. Large and small sample confidence intervals for Population Mean.

Hypothesis Testing: Types of errors. Hypothesis Testing for Population Mean. Inferences for Two Population Means. Inferences for the Mean of Two Normal Populations using Independent Samples (variances are assumed Equal). Inference for Two Populations Mean using Paired Samples. Inferences for Population Proportions. Confidence Intervals and hypothesis Testing for Population Proportion. Inferences for Two Populations Proportions using Independent Samples, Estimation of sample size

Analysis of categorized data. Goodness of fit tests. Contingency tables. Test of independence in contingency tables.

Part-II: (Professional)

50 Marks

I. Development of Curriculum and Instructional Material

- Elements of Curriculum.
- Relationship of Education and Curriculum
- Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives, Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials.

II. Process of Teaching and Teaching Strategies

- Process of Classroom Communication
- Factors affecting Classroom Communication
- Barriers to Classroom Communications
- Use of Instructional Materials and Media

III. Educational Assessment and Evaluation

- Concept of Classroom Assessment and Evaluation
- Distinction between Assessment, Evaluation and Measurement
- Approaches to Evaluation: Formative Evaluation; Summative Evaluation
- Types of Test: Essay Type; Objective Type: Multiple Choice, True-False Items, Matching Type; Principles of Construction of these Test
- Characteristics of a Good Test: Validity, Reliability, Objectivity, Usability

IV. Educational Administration and Supervision

- The Concept of Administration
- Educational Planning and Organization in Pakistan
- Approaches to Educational Administration: Democratic; Authoritarian; Laissez-faire
- Educational Supervision

V. Research Methods in Education

- Scientific Method and its Application in Education
- Sampling Techniques:
- Research Instruments: Questionnaire; Interview; Test; Observation; Rating Scale
- Type of Research: Basic/Applied Research; Historical Research; Descriptive Research; Correlation Research; Causal-Comparative Research; Experimental Research; Action Research; Qualitative and Quantitative Research
- Research Proposal and Report Writing

SUGGESTED READINGS

S. No.	Title	Author
1.	Principles and Procedures of Statistics	Steel, R and Torrie, J.H.
2.	Introduction to Statistical Theory, Part-I & II	Chaudhry, S.M. and Kamal, S.
3.	Introduction to Probability Theory and Statistical Inference, 3rd Edition.	Larson, H.J.
4.	Fundamentals of Modern Statistical Methods	Wilcox, R.
5.	Statistical Methods	Aggarwal, Y.P.
6.	Research in Education	JW Best
7.	Integrating Education Technology into Teaching	Roblyer
8.	Curriculum Development	S. M. Shahid
9.	Educational Measurement and Evaluation	S. M. Shahid
10.	Educational Administration	S. M. Shahid

PAPER-II: PROFESSIONAL (100 MARKS)
Senior Drilling Engineer (BS-18), Geological Survey of Pakistan,
Ministry of Petroleum and Natural Resources
(Case No. 165/2015)

Minimum Qualification & Experience:

- i) Second Class or Grade 'C' B.E/ B.Sc. degree in Mechanical/ Mining/ Civil Engineering or equivalent from a University recognized by the HEC.
- ii) Five years post qualification experience of drilling including one year experience in diamond core drilling.

Engineering: 100 Marks

I. Civil Engineering Fundamentals:

Structures; stress, strain, shearing force and bending moment concepts, beams, columns, footing. Simply supported and Cantilever beams, Pulleys and gears.

II. Fundamentals of Hydraulic Engineering:

Properties of fluid mechanics, pressure measuring devices, flow measuring devices, losses in pipelines, open channels, barrages and dams.

III. Mechanical Engineering Fundamentals

Mechanics and Strength of Materials: Concept of Stress and Strain, bending, torsion, geometric properties of areas, principal stresses, Tensile testing, Stress- Strain curve, Difference between Engineering and True Stress & Strain, Shear Stress & Strain, Concept of elastic and plastic deformation, Yield & ultimate Tensile strengths, Elongation, Toughness and Resilience, Ductility and Malleability, Hardness Testing, Brinell and Rock well Hardness test, bending moment,

Fluid Mechanics: Properties and basics of fluid mechanics, loss of head, power transformation by fluids, pumps, turbines. Fluid static's, Fluid dynamics, Types of flow: Turbulent and Laminar, Reynold's number.

Manufacturing: Different manufacturing processes like Casting, Forging, Machining, Rolling, Extrusion, Wire-drawing, welding, Turning (lathe), Milling, Shaping, Gear cutting, Drilling, Fitting.

IV. Mining Engineering Fundamentals:

An introduction to the field of mining engineering and its economic importance, brief review and production of minerals in Pakistan.

Prospecting and exploration, Development and exploitation, Drilling and boring, Explosive and blasting, Mine supports, Material handling, Mine Ventilation, Mine water and its disposal, Importance of safety aspects in mining, Mineral beneficiation, Mine sampling and valuation.

SUGGESTED READINGS

S. No.	Title	Author
1.	Civil Engineer's Reference Book	LS Blake
2.	Surveying and Leveling	T.P Kanetaker.
3.	Fluid mechanics with engineering applications	Finnemore/ Franzini.
4.	Fluid Mechanics	Lewitt
5.	Engineering Mechanics (Statics)	J.L. Merriems.
6.	Manufacturing Processes for Engineering Materials	Kalpakjian
7.	Elements of Mining,	R.S. Lewis
8.	Introductory Mining Engineering	H.L. Hartman.