

FEDERAL PUBLIC SERVICE COMMISSION
(Curriculum & Research Wing)

Schemes and Syllabi for Screening/Professional Tests as well as Descriptive Examination
Relating to Posts Advertised under Consolidated Advertisement No. 05/2018

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
1.	36/2018	Physical Education Teacher (Female) (BS-16 plus 25% special pay), Education Department, Gilgit Baltistan, Ministry of Kashmir Affairs and Gilgit Baltistan.	i. Second Class or Grade 'C' Bachelor's Degree in Health & Physical Education or equivalent qualification from a university recognized by the HEC. ii. Two (2) years post qualification experience in the field of Health and Physical Education.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Subject Test = 50 marks Part-III Professional Test = 30 marks	Part-I Grammar Usage, Sentence Structuring. Part-II <ul style="list-style-type: none"> • Philosophical basis of Physical Education, • Definition and scope of Physical Education, • Basis of Human Physiology • Definition and type of Games and Sports • History, Rules and Techniques of Games: <ul style="list-style-type: none"> a) Racket(Badminton, Table Tennis) b) Ball (Volley Ball) c) Field (Hockey, Cricket) Part-III <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation
2.	67/2018	Assistant Private Secretary (BS-16), A. English B. Urdu Ministry of Science & Technology.	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.	For (A) English <ul style="list-style-type: none"> • Typing Test with minimum Speed of 50 W.P.M 35 Marks • Shorthand Test with minimum Speed of 100 W.P.M 35 Marks • Computer Literacy Test: <ul style="list-style-type: none"> i Microsoft Word (Typing, Formatting) 10 Marks ii Microsoft Excel (Typing, Graph, Calculations) 10 Marks iii Microsoft Power Point (Typing, Formatting, Inserting Objects) 10 Marks For (B) Urdu <ul style="list-style-type: none"> • Typing Test in Urdu with minimum Speed of 50 W.P.M 35 Marks • Shorthand Test in Urdu with minimum Speed of 100 W.P.M 35 Marks • Computer Literacy Test: <ul style="list-style-type: none"> i Inpage (Typing, Formatting) 10 Marks ii Microsoft Excel (Typing, Graph, Calculations) 10 Marks iii Microsoft Power Point (Typing, Formatting, Inserting Objects) 10 Marks 	

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
3.	69/2018	Trained Graduate Teacher (Male) (BS-16), F.G. English Medium Schools, Directorate of Federal Government Educational Institutions (Cantts/ Garrisons), Ministry of Defence.	Second Class or Grade 'C' B.Sc. with Computer Science, Mathematics & Physics or Statistics with B.Ed. from a University recognized by HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Subject Test = 40 marks Part-III Professional Test=40 marks	Part-I Grammar Usage, Sentence Structuring Part-II (Bachelor's Level) <ul style="list-style-type: none"> • Computer Architecture, • Operating System concepts, • Windows XP, Windows 7& 8, • System Analysis & Design, • Artificial Intelligence, • Security and Ethical issues • Data Structures, • Algebra • Mechanics • Ordinary Differential Equations • Matrices, Determinants and Linear Equations Part-III <ul style="list-style-type: none"> • Educational Psychology, • Class Room Management and Discipline, • Instructional Planning and Teaching Strategies, • Students Evaluation and Examination System, • Educational Guidance and Counselling.
4.	77/2018	Procurement Officer (BS-17), Pakistan Mint Lahore, Finance Division.	i. Second Class or Grade 'C' Master's Degree from a university recognized by the HEC. ii. Two (2) years post qualification experience in the field of purchase/ procurement	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"> • System of Financial Control and Budgeting • Public Procurement Rules, 2004 • Elements of Financial Administration, • General Financial Rules (GFR) Vol I & II • Basic Arithmetic • Basic IT Knowledge
5.	78/2018	Assistant Director (BS-17) National Documentation Wing, Cabinet Division.	i. Second Class or Grade 'C' Master's Degree in History/ Political Science/ Public Administration. ii. Two (2) years post qualification experience of teaching/research in the field of History/ Political Science/ Public Administration.	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"> • Definition and significance /sources of Historical Research • History of Freedom Movement (1857-1947) • Emerging political concepts and terminologies: Globalization, Governance, Terrorism, Political exclusion and inclusion • Concept and scope of Public Administration • Essentials of Research Methodology • Essentials of Report Writing

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
6.	89/2018	Inspector Inland Revenue (BS-16), Revenue Division, Federal Board of Revenue.	Second Class or Grade 'C' Bachelor's Degree with Economics/Business Administration/ Commerce/ Statistics/ Law from a university recognized by HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test = 80 marks	Part-I Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Functions of Federal Board of Revenue. • Fiscal Policy of Pakistan • Tax Administration/Reforms in Pakistan • Sales Tax Act 1990 as amended upto July 2017 • Federal Excise Act 2005 as amended upto July 2017 • Income Tax Ordinance 2001 as amended upto June 2017 (Chapter-III & Part IV of Chapter-X only)
7.	91/2018	Physical Education Teacher (Male) , (BS-16 plus 25% special pay), Education Department, Gilgit Baltistan, Ministry of Kashmir Affairs and Gilgit Baltistan.	i. Second Class or Grade 'C' Bachelor's degree in Health & Physical Education recognized by the HEC. ii. Two (2) years post qualification experience in field of Health and Physical Education.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Subject Test = 50 marks Part-III Professional Test = 30 marks	Part-I Grammar Usage, Sentence Structuring. Part-II <ul style="list-style-type: none"> • Philosophical basis of Physical Education, • Definition and scope of Physical Education, • Basis of Human Physiology • Definition and type of Games and Sports • History, Rules and Techniques of Games: <ul style="list-style-type: none"> a) Racket(Badminton, Table Tennis) b) Ball (Volley Ball) c) Field (Hockey, Cricket) Part-III <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation
8.	92/2018	Assistant Private Secretary (BS-16), Special Courts/ Tribunals, Ministry of Law & Justice.	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 • Computer Literacy Test: <ul style="list-style-type: none"> i Microsoft Word (Typing, Formatting) ii Microsoft Excel (Typing, Graph, Calculations) iii Microsoft Power Point (Typing, Formatting, Inserting Objects) 	35 Marks 35 Marks 10 Marks 10 Marks 10 Marks
9.	93/2018	Medical Officer (BS-17), Federal Government Polyclinic, Capital Administration and Development Division.	MBBS or equivalent qualification recognized by Pakistan Medical and 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 courses of MBBS Degree Program. • 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	Topics of Syllabi
10.	95/2018	Assistant Programmer (BS-17) , Military Engineer Services, Ministry of Defence (Defence Division).	Master's Degree in Computer Science. OR Bachelor's Degree in Civil Engineering with diploma or approved course in Computer Science with three (3) years post qualification experience in Computer Programming.	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"> • Program Logic, • Visual Basic, C++, Java, JQUERY, Unix/Red Hat Linux Operating System, • Computer Networks and Internet, • Development of Basic Algorithms, • Designing Solution & Testing, • Data types, • Multiple Browsers, • Search Engine Optimization, • Hyper Text Markup Language (HTML), • Web Development
11.	99/2018	Civilian Medical Practitioner Grade-III (CMP) (BS-17) , OS Directorate, GHQ, Ministry of Defence.	MBBS or equivalent qualification recognized by the PMDC.	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 courses of MBBS Degree Program. • Health Policy of the Government • Care vs Cure for Health Management
12.	100/2018	Junior Civilian Security Officer (JCSO) (BS-16) , OS Directorate, GHQ, Ministry of Defence.	Retd. JCO or equivalent of the Armed Forces. OR i. Second Class or Grade 'C' Bachelor's Degree or equivalent qualification from a University recognized by the HEC. ii. Two (2) years post qualification experience as Security Supervisor.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II General Intelligence & Professional Test = 80 marks	Part-I Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Basic Arithmetic. • Current Affairs. • Pakistan Affairs & Islamic Studies • Everyday/General Science • Security Measures to maintain law & order Note : (Equal weightage for each topic at Part-II)

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
13.	101/2018	Junior Scientific Officer (JSO) (BS-16), OS Directorate, GHQ, Ministry of Defence.	Second Class B. Tech (Textile/Mechanical) or equivalent qualification from a University recognized by the HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Subject Test = 80 marks Note: Separate papers for candidates of Mechanical and Textile as there is no commonality in these disciplines. Moreover, job description of the post is entirely different from the educational qualification required for the post.	Part-I Sentence Structuring, Grammar Usage Part-II (For B. Tech. Textile candidates) • General textile technology, • Spinning, Weaving, • Dyeing and finishing, • Testing and quality control, • Business management and industrial economics, • Industrial management and human relations. Part-II (For B. Tech. Mechanical candidates) • Heat Transfer • Thermodynamics • Industrial Materials • Mechanics of Machines • Workshop Technology • Hydraulic Machines
14.	103/2018	Assistant Secretary (BS-16), National Industrial Relations Commission (NIRC), Ministry of Overseas Pakistanis & Human Resource Development.	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.	• Typing Test with minimum Speed of 50 W.P.M • Shorthand Test with minimum Speed of 100 W.P.M • Computer Literacy Test: i Microsoft Word (Typing, Formatting) ii Microsoft Excel (Typing, Graph, Calculations) iii Microsoft Power Point (Typing, Formatting, Inserting Objects)	35 Marks 35 Marks 10 Marks 10 Marks 10 Marks
15.	104/2018	Medical Officer (Female) (BS-17 plus 25% special pay), Health Department, Gilgit Baltistan, Ministry of Kashmir Affairs and Gilgit Baltistan.	MBBS or equivalent qualification from a recognized University/ College by PMDC.	Objective Type Test (MCQ) Part-I English =20 marks Part-II Professional Test =80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II • Core courses of MBBS Degree Program. • Health Policy of the Government • Care vs Cure for Health Management
16.	110/2018	Assistant Secretary (BS-16), Federal Public Service Commission.	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.	• Typing Test with minimum Speed of 50 W.P.M • Shorthand Test with minimum Speed of 100 W.P.M • Computer Literacy Test: i Microsoft Word (Typing, Formatting) ii Microsoft Excel (Typing, Graph, Calculations) iii Microsoft Power Point (Typing, Formatting, Inserting Objects)	35 Marks 35 Marks 10 Marks 10 Marks 10 Marks

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
17.	113/2018	Assistant Secretary (BS-16), Finance Division. Private	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 • Computer Literacy Test: <ul style="list-style-type: none"> i Microsoft Word (Typing, Formatting) ii Microsoft Excel (Typing, Graph, Calculations) iii Microsoft Power Point (Typing, Formatting, Inserting Objects) 	35 Marks 35 Marks 10 Marks 10 Marks 10 Marks
18.	119/2018	Assistant Director (BS-17), National Highways & Motorways Police, Ministry of Communications.	Second Class or Grade 'C' Master's degree in Economics/ Business Administration/ Commerce/ Public Administration.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structure. Part-II <ul style="list-style-type: none"> • Civil Servants Act, 1973 and Rules made there-under • Rules of Business, 1973 • Secretariat Instructions and Office Procedure. • System of Financial Control and Budgeting, • Public Procurement Regulatory Authority (PPRA) Rules, 2004 • Basic Arithmetic, • Basic knowledge of Computer/IT.
19.	121/2018	Accounts Officer (BS-17), National Highways & Motorways Police, Ministry of Communications.	i. Second Class or Grade 'C' Bachelor's degree. ii. Qualified as SAS/ AAT (PIPFA)/ Professional Examination of Institute of Cost and Management Accountants of Pakistan (ICMAP)/ Foundation Examination of Institute of Chartered Accountants of Pakistan. OR Second Class or Grade 'C' Master's degree in Commerce/ Business Administration with Accounting as one of the subjects.	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"> • Accounting Principles & Procedures, • Scrutiny of Records for Audit Purposes • Journal, Ledger & Cash Book, • Preparation of Annual Budget, • Financial Planning and Cost Accounting • Heads of Accounts, Re-appropriation of Funds and Supplementary Grants • Settlement of Audit Objections. • Public Procurement Rules, 2004 • Basic IT Knowledge

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
20.	123/2018	Computer Operator (BS-16), National Highways & Motorways Police, Ministry of Communications.	Second Class or Grade 'C' Bachelor's Degree in Computer Science.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Grammar Usage, Sentence Structuring Part-II • Program logic, • Visual Basic, C++, Java, Unix/Red Hat Linux Operating System, • Computer Networks and Internet, • Computer Graphics and Algorithms • Development of Basic Algorithms,
21.	124/2018	Accountant (BS-16), National Highways & Motorways Police, Ministry of Communications.	Second Class or Grade 'C' Bachelor's Degree in Commerce. OR Qualified as SAS/ AAT (PIPFPA); or Professional Examination of Institute of Cost and Management Accountants of Pakistan (ICMAP)/ Foundation Examination of Institute of Chartered Accountants of Pakistan.	Objective Type Test (MCQ) Part-I English =20 marks Part-II Professional Test =80 marks	Part-I Grammar Usage, Sentence Structuring Part-II • Accounting Principles & Procedures, • Scrutiny of Records for Audit Purposes • Journal, Ledger & Cash Book, • Preparation of Annual Budget, • Financial Planning and Cost Accounting • Heads of Accounts, Re-appropriation of Funds and Supplementary Grants • Settlement of Audit Objections. • Public Procurement Rules, 2004 • Basic IT Knowledge
22.	126/2018	Assistant Private Secretary (BS-16) National Highways & Motorways Police, Ministry of Communications.	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.	• Typing Test with minimum Speed of 50 W.P.M • Shorthand Test with minimum Speed of 100 W.P.M • Computer Literacy Test: i Microsoft Word (Typing, Formatting) ii Microsoft Excel (Typing, Graph, Calculations) iii Microsoft Power Point (Typing, Formatting, Inserting Objects)	35 Marks 35 Marks 10 Marks 10 Marks 10 Marks
23.	128/2016	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.	• Typing Test with minimum Speed of 50 W.P.M • Shorthand Test with minimum Speed of 100 W.P.M • Computer Literacy Test: i Microsoft Word (Typing, Formatting) ii Microsoft Excel (Typing, Graph, Calculations) iii Microsoft Power Point (Typing, Formatting, Inserting Objects)	35 Marks 35 Marks 10 Marks 10 Marks 10 Marks

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
24.	129/2018	Assistant Secretary (BS-16), Board of Investment, Prime Minister's Office.	<p>i. Second Class or Grade 'C' Bachelor's degree from a University recognized by HEC.</p> <p>ii. Minimum shorthand speed: 100 w.p.m. and typing speed: 50 w.p.m.</p> <p>iii. Must be computer literate.</p>	<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 • Computer Literacy Test: <ul style="list-style-type: none"> i Microsoft Word (Typing, Formatting) ii Microsoft Excel (Typing, Graph, Calculations) iii Microsoft Power Point (Typing, Formatting, Inserting Objects) 	<p>35 Marks</p> <p>35 Marks</p> <p>10 Marks</p> <p>10 Marks</p> <p>10 Marks</p>
25.	139/2018	Medical Officer (BS-17), Airports Security Force, Cabinet Secretariat, (Aviation Division).	MBBS.	<p>Objective Type Test (MCQ)</p> <p>Part-I</p> <p>English =20 marks</p> <p>Part-II</p> <p>Professional Test =80 marks</p>	<p>Part-I</p> <p>Vocabulary, Grammar Usage, Sentence Structuring</p> <p>Part-II</p> <ul style="list-style-type: none"> • Core courses of MBBS Degree Program. • Health Policy of the Government • Care vs Cure for Health Management
26.	147/2018	Dietitian (BS-17), Pakistan Air Force, (Defence Division), Ministry of Defence.	Second Class or Grade 'C' Master's Degree in Nutrition or equivalent from a recognized University by the HEC.	<p>Objective Type Test (MCQ)</p> <p>Part-I</p> <p>English = 20 marks</p> <p>Part-II</p> <p>Professional Test=80 marks</p>	<p>Part-I</p> <p>Vocabulary, Grammar Usage, Sentence Structuring.</p> <p>Part-II</p> <ul style="list-style-type: none"> • Fundamentals of Food & Nutrition • Nutrition and Disease • Advance Dietetics • Therapeutic Nutrition/Diets • Maternal Nutrition • Infant and Child Nutrition • Adolescent and Geriatric Nutrition • Nutrition Problems of Developing Countries

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
27.	150/2018	Inspector Customs/ Intelligence Officer (BS-16), Revenue Division, Federal Board of Revenue.	i. Second Class or Grade 'C' Bachelor's Degree from a recognized university with Economics, Commerce, Statistics, Accounting, Computer Science, Law, Pharmacy, Chemistry or Physics as one of the subjects or B.Sc Engineering in any specialty. ii. <u>MINIMUM HEIGHT:</u> (a) <u>FOR MALE:</u> 5'-6" (b) <u>FOR FEMALE:</u> 5'-2". iii. <u>MINIMUM CHEST MEASUREMENT:</u> 32"-33.5" iv. Computer literacy up to the level of MS Word, MS Power Point and MS Excel.	Objective Type Test (MCQ) <u>Part-I</u> English = 20 marks <u>Part-II</u> General Intelligence=80 marks	<u>Part-I</u> Grammar Usage, Sentence Structuring <u>Part-II</u> <ul style="list-style-type: none"> • Basic Arithmetic. • Current Affairs. • Pakistan Affairs & Islamic Studies • Everyday/General Science • Basic Computer Operation in MS Office Note : (Equal weightage for each topic at Part-II)

Schemes and Syllabi for Written Examination (Descriptive) for All Posts in BS-18 & BS-19 included in Consolidated Advertisement No. 05/2018

PAPER-I: ENGLISH

Max Marks: 100

Time Allowed: 3 Hours

- (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 sentences 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**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-87A/2018-R
Particulars of post	Associate Professor (Female) (Physics) (BS-19), F.G. Colleges, Directorate of Federal Government Educational Institutions (FGEI) (Cantts/ Garrisons), Ministry of Defence.
Minimum Qualification & Experience:	Ph.D. Degree in the relevant subject with eight (8) years post qualification teaching and administrative experience at College/ University level. OR M. Phil Degree in the relevant subject with ten (10) years post qualification teaching and administrative experience at College/ University level. OR Second Class or Grade 'C' Master's Degree in the relevant subject with twelve (12) years post qualification teaching and administrative experience at College/ University level.

Part-I: (Physics)**50 Marks****I. Mechanics**

- Vectors—Dots, Cross and triple products, Gradient, divergence and applications.
- Newtonian laws of motion; calculus based approach to kinematics, forces and dynamics, conservation law of energy; conservation of linear and angular momentum; Gravitation; planetary motion and satellites; Kepler's laws; centripetal forces
- Special theory of relativity. Michelson—Morley experiment and Einstein's postulates; Lorentz transformation; time dilation and length contraction; equivalence of mass and energy.

II. Waves and Oscillation

- Free oscillation with one and two degrees of freedom; forced and damped oscillations and phenomenon of resonance.
- Reflection, Refraction, Interference, Diffraction and Polarization of waves; interferometer and Newton's rings.

III. Heat and Thermodynamics

- Perfect gas and Van der Waals equation; Three Laws of Thermodynamics, internal energy, temperature, entropy. Thermal properties of Simple system production and measurement of low temperatures; Maxwellian distribution of molecular velocities; Brownian motion; Transport phenomena. Classical Maxwell-Boltzmann Statistics and its application.

IV. Electricity and Magnetism

- Gauss' law Electric potential and Poisson and Laplace's equation Dielectric medium and Polarization; Ampere's law; Vector potential; Magnetic properties

of matter; Faraday's law of electromagnetic induction; Maxwell's equations; Poynting theorem and Poynting Vector. Maxwell's equations in integral and differential form.

V. Modern and Quantum Physics

- Operators and quantum states, time dependent and independent Schrodinger equation, angular momentum, wave mechanics, Heisenber's uncertainty relationship and indeterminacy based on commutation properties of operators, Bohr theory and quantum numbers including electron spin; Pauli's exclusion principle; Spectra of simple systems with one or two valence electrons. Lande's g factor and Zeeman effect. Raman effect; Waves and particles and De Broglie's Hypothesis.

VI. Solid State Physics

- Crystal lattice and structure, Bravais lattice, free electron model, Band theory and electron in a periodic potential, Fermi energy and density of states, n and p type semiconductors, physics of the transistor and MOSFET, dielectric properties, magnetic properties and origin of magnetism.

VII. Nuclear Physics

- Structure of Nuclei; Radioactivity, α , β and γ decay. Methods of detection, Phenomenon of fission; reactor and nuclear power, nuclear fusion and its application.

Part-II: (Professional)

50 Marks

I. Development of Curriculum and Instructional Material

- Elements of Curriculum.
- Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives.

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 Supervision

V. Research Methods in Education

- Scientific Method and its Application in Education
- Sampling Techniques:

- Research Instruments: Questionnaire; Interview; Test; Observation; Rating Scale
- Research Proposal and Report Writing

SUGGESTED READINGS

S. No.	Title	Author
1.	Perspectives of Modern Physics.	A. Beiser.
2.	Fundamentals of Physics.	Halliday & Resnick
3.	Introduction to Electromagnetic Fields and Waves.	D. Corson & P. Lorrain.
4.	Heat and Thermodynamics.	D. Zemansky
5.	Introduction to Quantum Mechanics	D. Griffiths
6.	Modern Physics	Serway, Moses, Moyer.
7.	Solid State Physics	C. Kittel
8.	Research in Education	JW Best
9.	Integrating Education Technology into Teaching	Roblyer
10.	Curriculum Development	S. M. Shahid
11.	Educational Measurement and Evaluation	S. M. Shahid
12.	Educational Administration	S. M. Shahid

PAPER-II: PROFESSIONAL**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-87B/2018-R
Particulars of post	Associate Professor (Female) (Chemistry) (BS-19), F.G. Colleges, Directorate of Federal Government Educational Institutions (FGEI) (Cantts/ Garrisons), Ministry of Defence.
Minimum Qualification & Experience:	Ph.D. Degree in the relevant subject with eight (8) years post qualification teaching and administrative experience at College/ University level. OR M. Phil Degree in the relevant subject with ten (10) years post qualification teaching and administrative experience at College/ University level. OR Second Class or Grade 'C' Master's Degree in the relevant subject with twelve (12) years post qualification teaching and administrative experience at College/ University level.

Part-I: (Chemistry)**50 Marks**

- I. Atomic structure.—Quantum theory, Schrodinger equation, Particle in box, hydrogen atom. Hydrogen moleculeion, hydrogen molecule. Theories of hydrogen and metallic bonding.
- II. Electrochemistry.—Ionic equilibria, theory of strong electrolytes; ebye-Huckel theory of activity coefficients, galvanic cells, memberane equilibria and fuel cells. Theories of Acids and Bases, glass electrode, measurement of pH. Electroloysis, overvoltage and corrosion.
- III. Thermodynamics.—First law of thermodynamics, internal energy, enthalphy functions. Thermochemistry, Entropy and second law of Thermodynamics, Free energy and chemical equilibrium.
- IV. Chemistry of Following Elements.—Oxygen, Carbon, Chlorine, Silicon, Nitrogen, Phosphorus.
- V. Inorganic Chemical Industries.—Sulphuric Acid, Fixation of Nitrogen, Chemical Fertilizers, Semi-conductivity devices. Cement, Glass and Ceramics.
- VI. Chemistry of Natural Products.—Elementary study of Carbohydrates. Oils and Fats. Alkaloids and Vitamins.
- VII. Industrial Organic Chemistry.—Organic Polymers. Fermentation processes including preparation of Anti-Biotics. Petro-Chemical Industry.

Part-II: (Professional)**50 Marks**

- I. **Development of Curriculum and Instructional Material**
 - Elements of Curriculum.
 - Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives.
- 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 Supervision

V. Research Methods in Education

- Scientific Method and its Application in Education
- Sampling Techniques:
- Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
- Research Proposal and Report Writing

SUGGESTED READINGS

S. No.	Title	Author
1.	Advanced Inorganic Chemistry 3 rd Ed.	Cotton. F.A. and Wilkinson Groffrey
2.	Inorganic Chemistry, 3 rd Ed. 1983	Hukeavy, James E.
3.	Physical Chemistry 5 th Ed.	Moore, Walter J.
4.	Mechanism & Structure in Organic Chemistry	Gould, Edwards
5.	Organic Chemistry 2 nd Ed.	Morrison, Robert Thornton & Boyd R.N.
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**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-87C/2018-R
Particulars of post	Associate Professor (Female) (Biology) (BS-19), F.G. Colleges, Directorate of Federal Government Educational Institutions (FGEI) (Cantts/ Garrisons), Ministry of Defence.
Minimum Qualification & Experience:	Ph.D. Degree in the relevant subject with eight (8) years post qualification teaching and administrative experience at College/ University level. OR M. Phil Degree in the relevant subject with ten (10) years post qualification teaching and administrative experience at College/ University level. OR Second Class or Grade 'C' Master's Degree in the relevant subject with twelve (12) years post qualification teaching and administrative experience at College/ University level.

Part-I: (Biology)**50 Marks****I. Anatomy and Embryology**

- Primary and secondary tissues. Meristems. Secondary growth in dicot stem. Anatomy of leaf, stem and root.
- Micro and megasporogenesis, pollination mechanism, fertilization, development of Embryo and Endosperm, Seed dispersal.

II. Plant Physiology

- Plant water relations, Osmotic Quantities, component potentials of water and their role in transport, water absorption by roots, transpiration. Role of essential mineral elements and their uptake. Plant hormones. Photoperiodism, Vernalization. Dormancy and Seed germination. Enzymes.
- Photosynthesis: Plant pigments, Light reaction, CO₂ fixation, Mechanism of photophosphorylation.
- Respiration: Glycolysis, Krebs cycle, Mechanism of oxidative phosphorylation.

III. Genetics & Evolution

- Mendelian Genetics, Multiple Alleles, Polygenic inheritance, Gene interaction, Epistasis and pleiotropy, Sex-linked inheritance, Chromosomal aberrations, Mutations, DNA repair.
- Evolution of life, Convergent Evolution, Divergent Evolution, Parallel Evolution and Natural selection

IV. Molecular Biology

- Nucleic acids, DNA as hereditary material, DNA replication, Transcription, Genetic code, Protein synthesis, Genetic engineering and its application, Genetically Modified Organisms (GMO).

V. Animal Form and Function

- Protection, Support and Movement: Integumentary system of invertebrates and vertebrates; Animal muscles: the muscular system of invertebrates and vertebrates.
- Digestion and Nutrition: Feeding mechanism, Digestion, Organization and regional function of alimentary canal, Regulation of food intake, Nutritional requirements
- Internal Fluids and Respiration: Internal fluid environment, Composition of blood, Circulation and respiration mechanisms
- Nervous Coordination: Nervous system and Senses: Functional units of nervous system, Synapses junctions between nerves.
- Chemical Coordination: Endocrine System; Vertebrate endocrine glands and types of hormones, Mechanism of hormones action,

Part-II: (Professional)

50 Marks

I. Development of Curriculum and Instructional Material

- Elements of Curriculum.
- Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives.

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

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IV. Educational Administration and Supervision

- The Concept of Administration
- Educational Supervision

V. Research Methods in Education

- Scientific Method and its Application in Education
- Sampling Techniques:
- Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
- Research Proposal and Report Writing

SUGGESTED READINGS

S. No.	Title	Author
1.	Comparative Morphology of the Vascular Plants	Foster, A.S. and E.H. Gifford. 1989
2.	Genetics: A Conceptual Approach. 4 th edition	Pierce, B. A. 2012
3.	Molecular Cell Biology	Lodish,H., A. Berk, S.L. Zipursky, P. Matsudaira, D. Baltimore and J. Darnell 2000
4.	Ilmi Biomolecules, Cell Biology and Genetics.	Cheema, T.A. and Cheema Z.T. 2009
5.	Growth and Differentiation in Plants	Phillips and Wareings
6.	Animal behavior:- An Evolutionary Approach	John Alcock
7.	Biology	Campbell, N.A.
8.	Research in Education	JW Best
9.	Integrating Education Technology into Teaching	Roblyer
10.	Curriculum Development	S. M. Shahid
11.	Educational Measurement and Evaluation	S. M. Shahid
12.	Educational Administration	S. M. Shahid

PAPER-II: PROFESSIONAL**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-87D/2018-R
Particulars of post	Associate Professor (Female) (Mathematics) (BS-19), F.G. Colleges, Directorate of Federal Government Educational Institutions (FGEI) (Cantts/ Garrisons), Ministry of Defence.
Minimum Qualification & Experience:	Ph.D. Degree in the relevant subject with eight (8) years post qualification teaching and administrative experience at College/ University level. OR M. Phil Degree in the relevant subject with ten (10) years post qualification teaching and administrative experience at College/ University level. OR Second Class or Grade 'C' Master's Degree in the relevant subject with twelve (12) years post qualification teaching and administrative experience at College/ University level.

Part-I: (Mathematics)**50 Marks****I. Vector Calculus**

Vector algebra; scalar and vector products of vectors; gradient divergence and curl of a vector; line, surface and volume integrals; Green's, Stokes' and Gauss theorems.

II. Statics

Composition and resolution of forces; parallel forces and couples; equilibrium of a system of coplanar forces; centre of mass of a system of particles and rigid bodies; equilibrium of forces in three dimensions.

III. Dynamics

- Motion in a straight line with constant and variable acceleration; simple harmonic motion; conservative forces and principles of energy.
- Tangential, normal, radial and transverse components of velocity and acceleration; motion under central forces; planetary orbits; Kepler laws;

IV. Ordinary differential equations

- Equations of first order; separable equations, exact equations; first order linear equations; orthogonal trajectories; nonlinear equations reducible to linear equations, Bernoulli and Riccati equations.
- Equations with constant coefficients; homogeneous and inhomogeneous equations; Cauchy-Euler equations; variation of parameters.
- Ordinary and singular points of a differential equation; solution in series; Bessel and Legendre equations; properties of the Bessel functions and Legendre polynomials.

V. Modern Algebra

- Group, subgroups, Lagranges theorem, Cyclic groups, Normal subgroups, Quotient groups. Fundamental theorem of homomorphism. Isomorphism theorems of groups, Inner automorphisms. Conjugate elements, conjugate subgroups. Commutator subgroups.
- Ring, Subrings, Integral domains, Quotient fields, Isomorphism theorems, Field extension and finite fields.
- Vector spaces, Linear independence, Bases, Dimension of a finitely generated space. Linear transformations, Matrices and their algebra. Reduction of matrices to their echelon form. Rank and nullity of a linear transformation.
- Solution of a system of homogeneous and non-homogeneous linear equations. Properties of determinants.

Part-II: (Professional)

50 Marks

I. Development of Curriculum and Instructional Material

- Elements of Curriculum.
- Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives.

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 Supervision

V. Research Methods in Education

- Scientific Method and its Application in Education
- Sampling Techniques:
- Research Instruments: Questionnaire; Interview; Test; Observation; Rating Scale
- Research Proposal and Report Writing

SUGGESTED READINGS

S. No.	Title	Author
1.	An Introduction to Vector Analysis	Khalid Latif,
2.	Introduction to Mechanics	Q.K. Ghori
3.	An Intermediate Course in Theoretical Mechanics	Khalid Latif,
4.	Differential Equations with Boundary Value Problems	D. G. Zill and M. R. Cullen
5.	Elementary Differential Equations	E.D. Rainville, P.E. Bedient and R.E. Bedient
6.	Mathematical Methods	S. M. Yousaf, Abdul Majeed and Muhammad Amin
7.	Topics in Algebra	Herstein, I.N.
8.	Research in Education	JW Best
9.	Integrating Education Technology into Teaching	Roblyer
10.	Curriculum Development	S.M. Shahid
11.	Educational Measurement and Evaluation	S.M. Shahid
12.	Educational Administration	S.M. Shahid

PAPER-II: PROFESSIONAL

Max Marks: 100

Time Allowed: 3 Hours

Case No.	F.4-87E/2018-R
Particulars of post	Associate Professor (Female) (Urdu) (BS-19), F.G. Colleges, Directorate of Federal Government Educational Institutions (FGEI) (Cantts/ Garrisons), Ministry of Defence.
Minimum Qualification & Experience:	Ph.D. Degree in the relevant subject with eight (8) years post qualification teaching and administrative experience at College/ University level. OR M. Phil Degree in the relevant subject with ten (10) years post qualification teaching and administrative experience at College/ University level. OR Second Class or Grade 'C' Master's Degree in the relevant subject with twelve (12) years post qualification teaching and administrative experience at College/ University level.

Part-I: (Urdu)**50 Marks**

- ۱۔ اردو ادب کا مطالعہ
- ۱۔ اُردو زبان و ادب کی اسلامی شناخت
 ۲۔ تیسویں صدی کی ادبی تحریکیں
 ۳۔ پاکستانی ادب کی اصطلاح: تشکیل و روایت اور ارتقاء
- ۲۔ شعری ادب کا تنقیدی مطالعہ
- الف۔ دور قدیم
 ۱۔ میر (غزل - انتخاب میر مولوی عبدالحق)
 ۲۔ غالب (دیوان غالب)
 ۳۔ حالی (مسدس)
 ۴۔ اقبال (طلوع اسلام، مختصر راہ، مسجد قرطبہ)
- ب۔ دور جدید
 ۱۔ فیض (غزل - دست صبا)
 ۲۔ راشد (نظم - ایران میں جنبی)
 ۳۔ مجید امجد (نظم - شب رفت)
 ۴۔ ناصر کاظمی (غزل - برگ نے)
- ۳۔ نثری ادب کا تنقیدی مطالعہ
- الف۔ غیر افسانوی نثر
 ۱۔ شبلی (میرت الہی، جلد اول)
 ۲۔ مولوی عبدالحق (خانکے، چند ہم عصر)
- ب۔ افسانوی نثر
 ۱۔ منٹو (افسانے منٹو کے ہیں افسانے: مرتب ڈاکٹر انوار احمد، ڈاکٹر اے بی اشرف)
 ۲۔ احمد مدیم قاسمی (افسانے، کپاس کے پھول)
 ۳۔ مشتاق احمد یوسفی (ظن و مزاج، آب گم)

۴۔ تلخیص
۵۔ مضمون

Part-II: (Professional)

50 Marks

- I. **Development of Curriculum and Instructional Material**
 - Elements of Curriculum.
 - Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives.
- 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 Supervision
- V. **Research Methods in Education**
 - Scientific Method and its Application in Education
 - Sampling Techniques:
 - Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
 - Research Proposal and Report Writing

SUGGESTED READINGS

- | | |
|----------------------------------|--|
| ڈاکٹر وزیر آغا | ۱۔ تنقید اور جدید اردو تنقید |
| ڈاکٹر انور سدید | ۲۔ اردو ادب کی تحریکیں |
| شیخ محمد اکرام | ۳۔ آء کوٹ |
| شیخ محمد اکرام | ۴۔ روڈ کوٹ |
| شیخ محمد اکرام | ۵۔ موج کوٹ |
| ڈاکٹر روبینہ شہناز | ۶۔ اردو تنقید میں پاکستانی تصورات |
| مرتبین: ڈاکٹر رفیع الدین ہاشمی | ۷۔ قبائلیات کے موساں |
| ڈاکٹر سہیل عمر، ڈاکٹر وحید عشرت | |
| ترتیب نو: ڈاکٹر خواجہ محمد زکریا | ۸۔ تاریخ ادبیات مسلمانان پاکستان و ہند |
| مرتب: ڈاکٹر نواز علی | ۹۔ اردو ادب کے پچاس سال |

S.No.	Title	Author
10.	Research in Education	JW Best
11.	Integrating Education Technology into Teaching	Roblyer
12.	Curriculum Development	S. M. Shahid
13.	Educational Measurement and Evaluation	S. M. Shahid
14.	Educational Administration	S. M. Shahid

PAPER-II: PROFESSIONAL**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-87F/2018-R
Particulars of post	Associate Professor (Female) (Economics) (BS-19), F.G. Colleges, Directorate of Federal Government Educational Institutions (FGEI) (Cantts/ Garrisons), Ministry of Defence.
Minimum Qualification & Experience:	Ph.D. Degree in the relevant subject with eight (8) years post qualification teaching and administrative experience at College/ University level. OR M. Phil Degree in the relevant subject with ten (10) years post qualification teaching and administrative experience at College/ University level. OR Second Class or Grade 'C' Master's Degree in the relevant subject with twelve (12) years post qualification teaching and administrative experience at College/ University level.

Part-I: (Economics)**50 Marks****I. Micro Economics**

Consumer behaviour, Determination of market demand and supply i.e. concept of elasticity of Demand & Supply, Static, Comparative Static Analysis, Distinction between partial and general equilibrium analysis (basic level) theory of the Firm, Producer's equilibrium, Pricing factors of production

II. Macro Economics

Basic Economic Concepts, National Income Accounting, Consumption Function, Multiplier, Accelerator, Component of Aggregate Demand, Labour Demand and Supply, Un-Employment, Determination of equilibrium level of income and output (at least with reference to two or three school of thought), Inflation.

III. Public Financing

Government expenditure, Sources of Government Revenue, Privatization, Taxes and non-taxes, Incidence of different taxes, Public Debt, Objectives, methods of repayment, Deficit financing, General Equilibrium Analysis, Welfare Economics, Fiscal Policy.

IV. Role of Foreign Trade and Aid in Economic Development

Trends in Pakistan's Balance of Payments, Terms of Trade, Changes in direction of trade, Trends in Pakistan's major exports and imports, Causes of significant changes in the trends, the role of migration and remittances in Pakistan's economy, costs and benefits of Foreign Aid, Role of Foreign Investment.

V. Major Issues in Pakistan Economy

Energy crisis, Corruption, Bad governance, External debt accumulation and dependency, Unemployment, Income inequality, Inflation, Fiscal and trade deficits, Balance of payment issues, Shortage of irrigation water.

Part-II: (Professional)**50 Marks**

- I. Development of Curriculum and Instructional Material**
 - Elements of Curriculum.
 - Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives.
- II. Process of Teaching and Teaching Strategies**
 - Process of Classroom Communication
 - Factors affecting Classroom Communication
 - Barriers to Classroom Communications
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 - Concept of Classroom Assessment and Evaluation
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- IV. Educational Administration and Supervision**
 - The Concept of Administration
 - Educational Supervision
- V. Research Methods in Education**
 - Scientific Method and its Application in Education
 - Sampling Techniques:
 - Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
 - Research Proposal and Report Writing

SUGGESTED READINGS

S. No.	Title	Author
1.	A Text-book of Economics Theory	Stonier & Hague
2.	Government Finance—An Economic Analysis	Due John, F.
3.	Microeconomic	Ferguson, C.E. & Gould, J.P., Nicholson, Mankiw
4.	Macroeconomics	Rudigar Dorubush and Stanley Fisher Blanchard
5.	Foreign Aid Theory and Practice in Southern Asia	Wolf, Jr. DC
6.	History of International Trade	Findlay, R and O' Rourke, K
7.	Research in Education	JW Best
8.	Integrating Education Technology into Teaching	Roblyer
9.	Curriculum Development	S. M. Shahid
10.	Educational Measurement and Evaluation	S. M. Shahid
11.	Educational Administration	S. M. Shahid

PAPER-II: PROFESSIONAL**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-87G/2018-R
Particulars of post	Associate Professor (Female) (Pak Studies) (BS-19), F.G. Colleges, Directorate of Federal Government Educational Institutions (FGEI) (Cantts/ Garrisons), Ministry of Defence.
Minimum Qualification & Experience:	Ph.D. Degree in the relevant subject with eight (8) years post qualification teaching and administrative experience at College/ University level. OR M. Phil Degree in the relevant subject with ten (10) years post qualification teaching and administrative experience at College/ University level. OR Second Class or Grade 'C' Master's Degree in the relevant subject with twelve (12) years post qualification teaching and administrative experience at College/ University level.

Part-I: (Pakistan Studies)**50 Marks**

- I. Ideology of Pakistan-----definition and elucidation, historical aspects: Muslim rule in the Sub-Continent, its downfall and efforts for Renaissance. Movements for reforms-- Shaikh Ahmad Sarhindi, Shah Waliullah, Sayyid Ahmad Shaheed, Aligarh, Deoband, Nadwah, and other educational institutions-----Sindh Madrassah and Islamia College Peshawar. Ideology of Pakistan in the light of Speeches and statements of Allama Iqbal and Quaid- i Azam Muhammad Ali Jinnah.
- II. Changing Security Dynamics for Pakistan: Challenges to National Security of Pakistan
- III. Pakistan War on Terror
- IV. Foreign Policy of Pakistan Post 9/11
- V. Evolution of Democratic System in Pakistan
- VI. Hydro Politics ; Water Issues in Domestic and Regional Context
- VII. Pakistan's Energy Problems and their Effects
- VIII. Pakistan's Relations with Neighbours
- IX. Pakistan and India Relations Since 1947
- X. Kashmir Issue
- XI. The war in Afghanistan since 1979 and its impact on, and challenges to Pakistan, in the Post 2014 era.
- XII. The Prevailing Social Problems of Pakistan and the Strategies to Deal with Them, Poverty, Education, Health and Sanitation.

Part-II: (Professional)**50 Marks**

- I. Development of Curriculum and Instructional Material**
 - Elements of Curriculum.
 - Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives,
- II. Process of Teaching and Teaching Strategies**
 - Process of Classroom Communication
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 - Concept of Classroom Assessment and Evaluation
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- V. Research Methods in Education**
 - Scientific Method and its Application in Education
 - Sampling Techniques:
 - Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
 - Research Proposal and Report Writing

SUGGESTED READINGS

S. No.	Title	Author
1.	Federalism and Ethnic Conflict Regulation in India and Pakistan.	Adeney, Katharine. , New York: Palgrave Macmillan, 2007.
2.	Labor, Democratization and Development in India and Pakistan.	Candland, Christopher, New York: Routledge, 2007.
3.	Frontline Pakistan: The Struggle with Militant Islam.	Hussian, Zahid. New York: I.B.Tauris, 2007.
4.	Modern South Asia: History, Culture, Political Economy.	Jalal, Aisha and Bose, Sugata., New York: Routledge, 1998.
5.	Back to Pakistan: A Fifty Year Journey.	Mass, Leslie Noyes. Plymouth: Rowman & Littlefield Publishers, 2011.
6.	Pakistan: Manifest Destiny.	Qureshi, Atiff. London: Epic Press, 2009.
7.	Pakistan, America, and the Future of Global Jihad.	Riedel, Bruce. Deadly Embrace: Washington: Brookings Institute Press, 2011.
8.	Kashmir in Conflict: India, Pakistan and the Unending War.	Schofield, Victoria. New York: I.B.Tauria, 2003.
9.	A Brief History of Pakistan.	Wynbrandt, James. New York: Infobase Publishing, 2009.

S. No.	Title	Author
10.	Pakistan's Energy Sector: From Crisis to Crisis-Breaking the Chain	Zaid Alahdad
11.	Research in Education	JW Best
12.	Integrating Education Technology into Teaching	Roblyer
13.	Curriculum Development	S. M. Shahid
14.	Educational Measurement and Evaluation	S. M. Shahid
15.	Educational Administration	S. M. Shahid

PAPER-II: PROFESSIONAL**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-87H/2018-R
Particulars of post	Associate Professor (Female) (Islamiyat) (BS-19), F.G. Colleges, Directorate of Federal Government Educational Institutions (FGEI) (Cantts/ Garrisons), Ministry of Defence.
Minimum Qualification & Experience:	Ph.D. Degree in the relevant subject with eight (8) years post qualification teaching and administrative experience at College/ University level. OR M. Phil Degree in the relevant subject with ten (10) years post qualification teaching and administrative experience at College/ University level. OR Second Class or Grade 'C' Master's Degree in the relevant subject with twelve (12) years post qualification teaching and administrative experience at College/ University level.

Part-I: (Islamiyat)**50 Marks****I. Islam: the Code of Life**

- Salient features of Islamic;
- Social System
- Political System
- Economic System
- Judicial System
- administrative System
- Responsibilities of civil servants

II. Study of Seerah

Need and importance of the study of Seerah Prophet Mohummad (PBAH) as;

- The Role Model
- Merciful for the universe.
- Preacher
- Diplomat
- Teacher and Educationalist
- Revolutionary Leader

III. Islamic Civilization and Culture:

- Meanings and the vital elements
- The role of civilisation in the development of the human personality and communities
- Distinctions of Islamic Civilization;
 - Tauheed
 - Spiritualism
 - Dignity of Man
 - Equality
 - Social Justice
 - Moral values
 - Tolerance
 - Rule of Law

IV. Islam and World

- Impact of Islamic Civilization on the West and vice-versa.
- Muslim World and the Contemporary Challenges
- Interaction between East and West.
- The role of Islam in the modern world.

Part-II: (Professional)**50 Marks****I. Development of Curriculum and Instructional Material**

- Elements of Curriculum.
- Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives.

II. Process of Teaching and Teaching Strategies

- Process of Classroom Communication
- Factors affecting Classroom Communication
- Barriers to Classroom Communications
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- The Concept of Administration
- Educational Supervision

V. Research Methods in Education

- Scientific Method and its Application in Education
- Sampling Techniques:
- Research Instruments: Questionnaire; Interview; Test; Observation; Rating Scale
- Research Proposal and Report Writing

SUGGESTED READINGS

S. No.	Title	Author
1.	Islam: its meaning and Message	Khurshid Ahmad
2.	Islam: The Misunderstood Religion	Muhammad Qutub
3.	Towards Understanding Islam	Abul Aala Moudoodi
4.	Ideals and Realities of Islam	Hussain Nasr,
5.	A brief Survey of Muslim Science and Culture	Muhammad Abdur –Rahman
6.	Quranic Sciences	Afzalur Rahman
7.	Research in Education	JW Best
8.	Integrating Education Technology into Teaching	Roblyer
9.	Curriculum Development	S.M. Shahid
10.	Educational Measurement and Evaluation	S.M. Shahid
11.	Educational Administration	S.M. Shahid

PAPER-II: PROFESSIONAL**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-96/2018-R
Particulars of post	Senior Speech Therapist (BS-18), Armed Forces Institute of Rehabilitation Medicine, Ministry of Defence.
Minimum Qualification & Experience:	i. Master in Speech and Language therapy from a University recognized by HEC. ii. Five (5) years post qualification experience in Speech Therapy.

Professional: 100 Marks

- I. **APHASIA** ; Assessment protocol Informal and with Formal Standardize international tools i.e BDAE, BASA,CLQT . therapeutics approaches / technique
- II. **DYSARTHRIA**; Types of dysarthria's , their assessment and therapeutics approaches
- III. **APRAXIA**; Types of apraxia, their Formal & Informal assessment/ evaluation protocols and therapeutics approaches/ techniques
- IV. **ARTICULATION**; Types of articulation and phonation problems, their Formal & Informal assessment/ evaluation protocols and therapeutics approaches/ techniques
- V. **STAMMERING**; Types of stuttering /stammering problems, their Formal & Informal assessment/evaluation severity labeling protocols, therapeutics approaches/ techniques. Fluency shaping and modification therapy with beginning, intermediate & advance stuttrer.
- VI. **VOICE**; Types of voice problems, their qualitative/ perceptual and quantitative/ objective assessment, evaluation of pitch/frequency, loudness/intensity and quality tools i.e. Speech Lab, Glottal Enterprises & Sono-speech alongwith therapeutics approaches/ techniques
- VII. **HEARING IMPAIRMENT**; types and severity of hearing disorders, their Formal & Informal assessment/evaluation methods i.e. PTA, BERA ASSR, Auto acoustic emission. Therapeutics approaches/ techniques i.e. Audio-Visual, signs language , total communication approaches qualities of hearing aids and role of speech therapist in before and after cochlear implant .
- VIII. **BEHAVIOR DISORDERS**; Autism Spectrum Disorder, Attention Deficit Hyperactivity Disorder & Asperger. Types and severity of disorders, their Formal & Informal assessment/ evaluation protocols i.e. CARS.

SUGGESTED READINGS

S. No.	Title	Author
1.	Stuttering and integration approaches & treatments	Barry Guitar
2.	Manual of aphasia & aphasia therapy	Nancy Helm –Estabrooks & Martin L. Albert
3.	The Voice Diagnostic protocols	Shaheen N Awan
4.	Oral Placement Therapy	Sara Rosenfeld - Johnsons

PAPER-II: PROFESSIONAL**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-97/2018-R
Particulars of post	Senior Prosthetics & Orthotist (BS-18) , Armed Forces Institute of Rehabilitation Medicine, Ministry of Defence.
Minimum Qualification & Experience:	<ul style="list-style-type: none"> i. B.S in Orthopedic Technology from a University recognized by HEC. ii. Five (5) years post qualification experience as Prosthetics and Orthotist in Govt. Organization. The candidate must have experience in CAD/CAM technology and pressure measurement systems. .

Professional: 100 Marks**I. Advanced Orthotics and Prosthetics**

- Spinal orthotics
- CAD/CAM Orthotics/Prosthetics
- Lower limb orthotics

II. Lower Limb Prosthesis

- Lower limb prosthetics
- Sports Prosthetics
- Advance Socket Designing
- Hydraulic Knees

III. Upper Limb Prosthesis

- Anatomy of muscles
- Upper Limb prosthesis
- Upper Limb Myoelectric prosthesis

IV. Pressure Measurement

- Internal socket Pressure measurement
- Pressure measurement with different knees and feet

V. Legal Aspect of Sports Prosthetics

- Ban on flex foot cheetah in IAAF and ADA
- Oscar Pistorius

SUGGESTED READINGS

S. No.	Title	Author
1.	Physical Medicines and Rehabilitation fourth edition	Randall L. Braddom
2.	Powered Upper Limb Prosthesis	Ashok Muzamdar
3.	Biomechanics of Lower Limb Prosthetics	Mark R Pitkin
4.	Marquette sports law review volume 19	

PAPER-II: PROFESSIONAL**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-98/2018-R
Particulars of post	Pathologist (BS-18), Armed Forces Institute of Rehabilitation Medicine, Ministry of Defence.
Minimum Qualification & Experience:	<ul style="list-style-type: none"> i. MBBS with FCPS from CPSP. ii. Five (5) years post FCPS experience in Government Organization as Pathologist.

Part-I: (Qualification Based)**50 Marks**Core courses of **MBBS Degree****Part-II: (Professional)****50 Marks**Core courses of FCPS with reference to **Pathology**.

PAPER-II: PROFESSIONAL**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-102/2018-R
Particulars of post	Director (BS-19), Geological Survey of Pakistan, Ministry of Energy (Petroleum Division).
Minimum Qualification & Experience:	<ul style="list-style-type: none"> i. Second Class or Grade 'C' M.Sc. degree in Geology or equivalent qualification from a University recognized by the HEC. ii. Post qualification Research experience of twelve (12) years in the field of Geology including three (3) years experience to plan, organize, conduct and supervise geological field programme for geological surveys. iii. Must have published five (5) research papers in the fields of Geology.

Geology: 100 Marks**I. Stratigraphy and Palaeontology**

Principles of stratigraphy; laws of superposition and faunal succession. Geological time scale with divisions. Classification and nomenclature of stratigraphic units: lithostratigraphic units, biostratigraphic units and chronostratigraphic units.

Introduction to fossils and their significance; modes of fossilization, Study of morphology, range and broad classification of major invertebrate phyla; Introduction to micro fossils; Introduction to Paleobotany; Introduction and classification of major vertebrates; Introduction to micropaleontology

II. Mineralogy

Classification of minerals; Study of internal structure; polymorphism and isomorphism; paragenesis; Physical and optical properties of the common silicate and non-silicate mineral groups; Introduction to crystallography; elements of symmetry, study; normal classes of crystallographic systems.

III. Structural Geology and Tectonics

Stress-strain concepts; factors which control the mechanical behavior of materials; Folds, Faults, Joints, Foliation: terminology, classification and relationship with bedding; Lineation, Unconformity.

Plate tectonics theory; Geological evidences for continental drift; Sea-floor spreading; Oceanic ridges; Continental rifts; Intra-oceanic islands; Hot spot and Mantle plumes; Wilson Cycle; Tectonic framework of Pakistan.

IV. Sequence Stratigraphy

Introduction, history, concept and significance of sequence stratigraphy; Data sources: seismic reflections, outcrops, well logs, core and seismic facies; Sea level changes, their causes and effects; Accommodation, eustatic and relative sea curve; Hierarchy of sequence stratigraphic elements; Types of sequences and systems tracts.

V. Mineral and Energy Resources

Introduction of geological exploration/prospecting. Brief description of hydrocarbons, coal, gemstones, copper, lead, zinc, iron, gold, chromite, manganese, salt, gypsum, bauxite, sulphur, barite, fluorite, clays, phosphorite, building and dimension stones, industrial rocks and minerals, radioactive minerals and rocks with special reference to economic mineral deposits in Pakistan.

Origin, occurrence, and depositional environments of coal; coal Constitution and kinds of coals.Coal rank, grade and calorific value. Coal deposits of Pakistan with reference to Thar Coal. Geothermal energy resources of Pakistan.

VI. Engineering and Environmental Geology

Rock and soil mechanics and its application in civil engineering; Rock mass characteristics; Geotechnical studies of rocks and soils; Geological factors and strength of rocks; Study of geological factors in relation to the construction of buildings and foundations, roads, highways, tunnels, dams and bridges; Application of geophysical methods for site investigation; Construction materials; Mass movement, their causes and prevention.

VII. Economic and Applied Geology

Metallic and Non-metallic mineral resources of Pakistan. Mineral-based industries. Overview of Recodec Copper. Radioactive minerals and their occurrences in Pakistan. Gemstones of Pakistan

Geology of Reservoirs, Dams .Highways and Tunnels. Major natural hazards and their Impact on the environment with special reference to Pakistan.

SUGGESTED READINGS

S. No.	Title	Author
1.	Principles of Paleontology	Raup, D.M. & Stanley, S.M
2.	Principles of Sedimentology and Stratigraphy	Boggs, S
3.	Mineralogy	Perkins, D
4.	Plate Tectonics – Geodynamics	Moore, E.M. & Twiss, R.J
5.	Structural Geology	Twiss, R.J. & Moore, E.M.,
6.	Sequence Stratigraphy	Emery, D. & Myers, K.J.,
7.	Geology of Pakistan	Bender, F.K. & Raza, H.A.,
8.	Environmental Geology	Montgomery, C.W.,
9.	Economic Geology: Principles and Practice	Walter L. Pohl
10.	Energy Resources	Brown and Skipsy
11.	Pakistan Energy Yearbook 2012	Ministry of Petroleum and Natural Resources Hydrocarbon Development Institute of Pakistan. Islamabad

PAPER-II: PROFESSIONAL**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-105/2018-R
Particulars of post	Senior Drilling Engineer (BS-18), Geological Survey of Pakistan, Ministry of Energy (Petroleum Division).
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 (5) 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	Kalpakkjian
7.	Elements of Mining,	R.S. Lewis
8.	Introductory Mining Engineering	H.L. Hartman.

PAPER-II: PROFESSIONAL**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-108/2018-R
Particulars of post	Deputy Director (BS-18 plus 25% special pay), Women Development Department, Gilgit Baltistan, Ministry of Kashmir Affairs and Gilgit Baltistan.
Minimum Qualification & Experience:	<ul style="list-style-type: none"> i. Second Class or Grade 'C' Master's degree in Sociology/ Anthropology/ Social Work/ Women Studies/ Gender Studies from a university recognized by HEC. ii. Five (5) years post qualification experience in administration and women focused developmental activities in Public/ well reputed private Organization at level of BS-17 or equivalent.

Part-I: 50 Marks

(Public Administration & Office Management)

- I. **Public Administration:** Nature and scope, Role of Public Administration in a modern Welfare State;
- II. **Administrative Leadership:** Approaches to the study of Leadership, Forms of Leadership, Leadership qualities;
- III. **Administrative Accountability:** Internal and External Controls; Executive Control, Legislative Control, Judicial Control, Ombudsman, Public Opinion and Pressure Groups; Problems of Administrative Accountability in Pakistan;
- IV. **Planning:** Types of Plans, Planning Process; Principles of Planning, Planning Machinery in Pakistan;
- V. The Protection against Harassment of Women at Workplace Act, 2010
- VI. Prevention of Anti-Women Practices Act, 2011
- VII. Civil Servant Act 1973 and Rules made thereunder;
- VIII. PPRA Ordinance and Rules 2004.

Part-II: 50 Marks

(Human Resource, Financial Management, Quality Management and Information Technology)

I. Human Resource and Financial Management

Definition, Significance and Scope of Human Resource Management; Organization—Types of Organization, Organization of the Federal and Provincial Governments, Public Sector Enterprises; Approaches to Human Resource Management. Personnel Administration—Tools of Personnel Management: Selection, Training, Promotion, Compensation, Discipline; Communication, Communication Channels and Principles of Public Relations; Human Behaviour and Organizations Administration.—Elements of Financial Administration, Performance Programmed Budgeting, Principles of Budgeting, Auditing and Accounting.

II. Basic Concept of Quality Management

ISO-9000, ISO-13000, other certifications regarding quality measurement; management, management for Results, Setting Performance Goals and Targets; Job Analysis: Job Description, Job Specification, Performance Evaluation;

III. Information Technology and MS Office

Fundamentals of Computer: CPU, Memory Devices, Types of Computers, Characteristics of Computer and related material; Application Software: Microsoft Word, Microsoft Power Point, Microsoft Excel; Search Engines, Web Design, Email, Internet Surfing, Social Networking (Facebook, Twitter, etc); General Introduction to Virus and Antivirus utilities; Programming Languages

SUGGESTED READINGS

S. No.	Title	Author
1.	An Introduction to the Public Administration	E.N. Cladden
2.	Bureaucracy: Modern Society	Pebr, M.Blau.
3.	Public Administration for a Welfare State	Paul Ableby
4.	The Bureaucracy of Pakistan	Charles F. Kennedy
5.	Human Resource Management	H.T.Graham & Roger Bennett
6.	Management	James A.F.Stoner, R.Eward Freeman, Daniel R.Gilbert Jr.
7.	Understanding Computer: Today and Tomorrow	Deborah Morley, Charles Parker
8.	MS Office 365 Handbook: 2013 Edition	Kevin Wilson

PAPER-II: PROFESSIONAL**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-109/2018-R
Particulars of post	Assistant Draftsman (BS-18) , Ministry of Law and Justice.
Minimum Qualification & Experience:	<ul style="list-style-type: none"> i. Second Class or Grade 'C' Bachelor's Degree in Law or equivalent qualification, from a University recognized by HEC. ii. Five (5) years post qualification experience of work in drafting statutes and statutory rules, notifications, legislations and other legal instruments, and vetting of legal documents.

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**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-111/2018-R
Particulars of post	Associate Professor/Vice Principal (Geography) (Female) (BS-19) , F.G. Colleges, Federal Directorate of Education, Capital Administration and Development Division.
Minimum Qualification & Experience:	Ph.D. Degree in Geography with eight (8) years post qualification teaching and administrative experience at College/ University level. OR M.Phil Degree in Geography with ten (10) years post qualification teaching and administrative experience at College/ University level. OR Second Class or Grade 'C' Master's Degree in Geography with twelve (12) years post qualification teaching and administrative experience at College/ University level.

Part-I: (Geography)**50 Marks****Physical Geography**

- I. Factors controlling landform development; endogenic and exogenic forces; plate tectonics; mountain building; earthquakes; landforms associated with fluvial, arid, glacial, coastal and Karst cycle; groundwater.
- II. Elements and Factors of climate, Heat budget of the earth; Hydrological cycle; Types of condensation and precipitation.
- III. Ocean floor deposits, their characteristics and classification, Ocean circulation, Waves, currents and tides, their nature, causes and effects.
- IV. Factors of climate and Environmental change. Transformation of nature by man; environmental degradation and conservation; Nature and Types of pollution. Problems caused by pollution, Global Warming, Global Environment Patterns, Environmental Hazards and Risk Management.

Human Geography

- V. Geographic patterns of culture, Ethnicities and Nationalities, Ethnic Conflicts, Ethnic Diversity in the World, Factors of Ethnic Cleansing, Development Indicators, Economic Indicators, Social Indicators, Health Indicators, Development through Trade.
- VI. Factors effecting Agriculture, Food Security, Renewable Resources, Recycling Resources, Sustainable resources.
- VII. Over and under Population threats and their consequences, Patterns and Problems within urban areas.
- VIII. State as a Politico-Territorial Phenomenon, Physical-environmental impacts, Global patterns in health and diseases.

Part-II: (Professional)**50 Marks****I. Development of Curriculum and Instructional Material**

- Elements of Curriculum.
- Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives.

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 Supervision

V. Research Methods in Education

- Scientific Method and its Application in Education
- Sampling Techniques:
- Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
- Research Proposal and Report Writing

SUGGESTED READINGS

S. No.	Title	Author
1.	Introducing Physical Geography	Alan Strahler.
2.	Geosystems: An Introduction to Physical Geography	Robert W. Christopherson
3.	Elements of physical geography.	Strahler, A. N.
4.	Environmental Geography: Science Landuse and Earth System	William M. Marsh.
5.	Political Geography: The Spatiality of Politics.	Dikshit, R. D.
6.	Human Geography Landscape of Human Activities.	Getis, Fellman.
7.	An Introduction to Agricultural Geography.	Grigg, D.
8.	Geographies of Global Change.	Johnston, R. J.
9.	Contemporary Human Geography.	Rubenstein James M.
10.	Research in Education	JW Best
11.	Integrating Education Technology into Teaching	Roblyer
12.	Curriculum Development	S. M. Shahid
13.	Educational Measurement and Evaluation	S. M. Shahid
14.	Educational Administration	S. M. Shahid

PAPER-II: PROFESSIONAL**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-112/2018-R
Particulars of post	Deputy Director/ Senior Meteorologist (BS-18), Pakistan Meteorological Department, Cabinet Secretariat (Aviation Division).
Minimum Qualification & Experience:	<p>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 one (1) year post qualification experience in BPS-17.</p> <p style="text-align: center;">OR</p> <p>M.Phil in one of the above subjects from a university recognized by HEC with three (3) years post qualification experience in BPS-17 in the field of Meteorology.</p> <p style="text-align: center;">OR</p> <p>i. Second Class or Grade 'C' Master's Degree in one of the above subjects from a university recognized by HEC with five (5) years post qualification experience in BPS-17 in the field of Meteorology.</p> <p>ii. Graduation with Physics or Mathematics from a university recognized by HEC.</p>

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**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-117/2018-R
Particulars of post	Associate Radiologist (BS-18), Federal General Hospital, Chak Shahzad, Islamabad, Capital Administration and Development Division.
Minimum Qualification & Experience:	<ul style="list-style-type: none"> i. MBBS recognized by PM&DC. ii. Postgraduate higher diploma in the relevant field recognized by PM&DC with 3 years post graduate experience. OR Post-graduate lower diploma in the relevant field recognized by PM&DC with 5 years post graduate experience.

Part-I: (Qualification Based)**50 Marks**Core courses of **MBBS Degree****Part-II: (Professional)****50 Marks**Core courses of Post Graduate Lower Diploma in **Radiology**.

PAPER-II: PROFESSIONAL**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-118/2018-R
Particulars of post	Deputy Director (BS-18), National Highways & Motorways Police, Ministry of Communications.
Minimum Qualification & Experience:	Second Class or Grade 'C' Master's degree in Business Administration/ Public Administration/ Economics/ Commerce with five (5) years post qualification experience in Finance/ Accounts/ Personnel Administration.

Part-I: 50 Marks

(Public Administration & Office Management)

- I. **Public Administration:** Nature and scope, Role of Public Administration in a modern Welfare State;
- II. **Bureaucracy:** Concept of Bureaucracy, Theories of Bureaucracy, Ecology of Bureaucracy; Bureaucracy of Pakistan as a Change Agent;
- III. **Administrative Leadership:** Approaches to the study of Leadership, Forms of Leadership, Leadership qualities;
- IV. **Administrative Accountability:** Internal and External Controls; Executive Control, Legislative Control, Judicial Control, Ombudsman, Public Opinion and Pressure Groups; Problems of Administrative Accountability in Pakistan;
- V. **Planning:** Types of Plans, Planning Process; Principles of Planning, Planning Machinery in Pakistan;
- VI. **Controlling and Co-Ordination:** Forms of Controls, Control Mechanism, the process of Control, Principles of Controlling; Principles of Coordination; Machinery for Coordination; Problems of Coordination in Public Administration in Pakistan.
- VII. Civil Servant Act 1973 and Rules made thereunder;
- VIII. PPRA Ordinance 2002 and Rules 2004.

Part-II: 50 Marks

(Human Resource, Financial Management, Quality Management and Information Technology)

I. Human Resource and Financial Management

Definition, Significance and Scope of Human Resource Management; Organization—Types of Organization, Organization of the Federal and Provincial Governments, Public Sector Enterprises; Approaches to Human Resource Management. Personnel Administration—Tools of Personnel Management: Selection, Training, Promotion, Compensation, Discipline; Communication, Communication Channels and Principles of Public Relations; Human Behaviour and Organizations Administration.—Elements of Financial Administration, Performance Programmed Budgeting, Principles of Budgeting, Auditing and Accounting.

II. Basic Concept of Quality Management

ISO-9000, ISO-13000, other certifications regarding quality measurement; management, management for Results, Setting Performance Goals and Targets; Job Analysis: Job Description, Job Specification, Performance Evaluation;

III. Information Technology and MS Office

Fundamentals of Computer: CPU, Memory Devices, Types of Computers, Characteristics of Computer and related material; Application Software: Microsoft Word, Microsoft Power Point, Microsoft Excel; Search Engines, Web Design, Email, Internet Surfing, Social Networking (Facebook, Twitter, etc); General Introduction to Virus and Antivirus utilities; Programming Languages

SUGGESTED READINGS

S. No.	Title	Author
1.	An Introduction to the Public Administration	E.N. Cladden
2.	Bureaucracy: Modern Society	Pebr, M.Blau.
3.	Public Administration for a Welfare State	Paul Ableby
4.	The Bureaucracy of Pakistan	Charles F. Kennedy
5.	Human Resource Management	H.T.Graham & Roger Bennett
6.	Management	James A.F.Stoner, R.Eward Freeman, Daniel R.Gilbert Jr.
7.	Understanding Computer: Today and Tomorrow	Deborah Morley, Charles Parker
8.	MS Office 365 Handbook: 2013 Edition	Kevin Wilson

PAPER-II: PROFESSIONAL**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-138/2018-R
Particulars of post	Assistant Chief (BS-18), Health Section, Ministry of Planning, Development and Reform.
Minimum Qualification & Experience:	<ul style="list-style-type: none"> i. Second Class or Grade 'C' Master's degree or equivalent qualification in Health Planning, Nutrition Planning. OR M.B.B.S. or equivalent. ii. Three (3) years post qualification experience of work and/ or research relating to medicine, surgery or public health or in planning and development in these fields.

Part-I: (Research and Planning)**50 Marks****i. Communication Skills, Technical Writing and Presentation Skills**

Paragraph writing, Essay writing, CV and job application, Translation skills, Study skills, Academic skills, Essay writing, Academic writing, Technical Report writing, Progress report writing, Presentation skills

ii. Planning and Managementa) Project Management

Project Management. Processes Integration Management, Project Plan Development, Project Plan Execution and Overall Change Control.

b) Scope Management

Initiation, Scope Planning, Scope Definition, Scope Verification and Scope Change Control.

c) Time Management

Activity Definition, Activity Sequencing, Activity Duration Estimation, Schedule Development and Schedule Control.

d) Cost Management

Quality Planning, Staff Acquisition and Team Development.

e) Communications Management

Communications Planning, Information Distribution, Performance Reporting and Administrative Closure.

f) Risk Management

Risk Identification, Risk Quantification, Risk Response Development and Risk Response Control.

g) Lab Work

Computing Project Management Software, PERT, Gantt Chart/ Network, CPM, etc.

h) Statistical Techniques

All statistical techniques related to Planning & Research

Part-II: (Public Health)**50 Marks****i. Meaning and Significance of Health Education**

- a. Definition and scope of Health Education
- b. Relationship of Health Education with Physical Education

- c. Importance of Health Education in Community
- ii. **Community Health**
 - a. Concepts in Community Health
 - b. Health & Welfare
 - c. Health & Development
 - d. Infectious diseases, Epidemiology
 - e. Disease Transmission
 - f. Immunity
 - g. Disease prevention and control
 - h. Disinfection
 - i. Symptoms, causes and prevention of most common communicable diseases
 - j. Epidemiology of non-communicable diseases and condition
- iii. **Environment and Human Health**
 - a. Toxic pollutants and their effect on health
 - b. Mechanisms of action of drugs producing toxic effects of drugs on human body
 - c. Carcinogenic agents
 - d. Chemicals in food
 - e. Biological effects of Radiation
 - f. Sources of pollution: Air, Water, Noise

SUGGESTED READINGS

S. No.	Title	Author
1.	Practical English Grammar	A.J. Thomson and A.V. Martinet.
2.	Writing. Intermediate	Marie-Christine Boutin, Suzanne Brinand and Françoise Grellet.
3.	Writing. Upper-Intermediate	Rob Nolasco.
4.	Reading. Advanced	Brian Tomlinson and Rod Ellis.
5.	Study Skills	Riachard Yorky
6.	Writing. Advanced	Ron White.
7.	College Writing Skills	John Langan.
8.	Patterns of College Writing	Laurie G. Kirsznner and Stephen R. Mandell.
9.	The Mercury Reader. A Custom Publication.	Janice Neulib; Kathleen Shine Cain; Stephen Ruffus and Maurice Scharton.
10.	Project Management Body of Knowledge,	Project Management Institute (PMI) standards committee
11.	Software Project Management	S.A. Kelkar, A Concise Study, Prentice Hall of India.
12.	Global Climatic Change,.	Houghton and R A,
13.	Health Factors for College Students.	Maude Lee & Heredge E T.
14.	Synopsis of Hygiene and Public Health.	Dr Jabalpur K S Shah
15.	Community Health.	Anderson and Mortengreen
16.	Environmental Health,	Willgoose