

**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. 02/2017**

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
1.	19/2017	Assistant Private Secretary (BS-16), Textile Commissioner's Organization, Karachi, Ministry of Textile Industry	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"> <li>• Typing Test with minimum Speed of 50 W.P.M</li> <li>• Shorthand Test with minimum Speed of 100 W.P.M</li> </ul>	<p style="text-align: right;"><b>50 Marks</b> <b>50 Marks</b></p>
2.	21/2017	Official Reporter (English), (BS-17), National Assembly Secretariat	i. 2 <sup>nd</sup> Class or Grade 'C' Bachelor Degree from HEC recognized University ii. English Shorthand Speed 120 W.P.M iii. English Typing Speed 50 W.P.M iv. Proficiency in relevant Computer Software	<ul style="list-style-type: none"> <li>• Typing Test with minimum Speed of 50 W.P.M</li> <li>• Shorthand Test with minimum Speed of 120 W.P.M</li> </ul>	<p style="text-align: right;"><b>50 Marks</b> <b>50 Marks</b></p>
3.	31/2017	Computer Instructor (BS-17), Staff Welfare Organization, Establishment Division.	Second Class or Grade 'C' Master's degree in Computer Science or Information technology or Software Engineering	Objective Type Test (MCQ) <b>Part-I</b> English = 20 marks <b>Part-II</b> Professional Test = 80 marks	<p><b>Part-I</b> Vocabulary, Grammar Usage, Sentence Structuring.</p> <p><b>Part-II</b></p> <ul style="list-style-type: none"> <li>• Computer Hardware &amp; Software, ,</li> <li>• Data Communication &amp; Networking,</li> <li>• C/C++ Language,</li> <li>• Visual Basic,</li> <li>• Relational Database Management System (RDBMS),</li> <li>• Operating System Unix/Linux</li> <li>• Oracle/PLSQL,</li> <li>• Teaching Techniques and Strategies</li> <li>• Examination &amp; Evaluation of Students.</li> </ul>
4.	33/2017	Assistant Meteorologist (BS-16), Pakistan Meteorological Department, Cabinet Secretariat (Aviation Division).	Second Class or Grade 'C' B.Sc. Degree in Physics/ Mathematics/ Space Science/ Geology/ Meteorology/ Environment from a University recognized by the HEC.	Objective Type Test (MCQ) <b>Part-I</b> English =20 marks <b>Part-II</b> Professional Test = 80 marks	<p><b>Part-I</b> Grammar Usage, Sentence Structuring.</p> <p><b>Part-II</b></p> <ul style="list-style-type: none"> <li>• Meteorology</li> <li>• Climatology</li> <li>• Basics of Physics</li> <li>• Environmental Studies</li> <li>• Basic Mathematics</li> <li>• Basic Geology</li> </ul>

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi																		
5.	36/2017	Assistant Executive Engineer (Mechanical) (BS-17), MES, Ministry of Defence.	Bachelor's Degree in Mechanical Engineering from a recognized University.	Objective Type Test (MCQ) <b>Part-I</b> English = 20 marks <b>Part-II</b> Professional Test = 80 marks	<b>Part-I</b> Vocabulary, Grammar Usage, Sentence Structuring <b>Part-II</b> <ul style="list-style-type: none"> <li>Industrial Materials</li> <li>Machine Design and Drawing</li> <li>Mechanics of Machines</li> <li>Production Management &amp; Quality Control</li> <li>Workshop Practice</li> <li>Hydraulic Machines</li> <li>Mechanics and Strength of Materials</li> <li>Manufacturing processes like Casting, Forging, Machining, Rolling, Extrusion, Welding and Drilling</li> </ul>																		
6.	39/2017	Lecturer (Male) (BS-17), A). Urdu B). English C). Health & Physical Education Directorate of Federal Government Educational Institutions (Cantts/ Garrisons), Ministry of Defence.	Second Class or Grade 'C' Master's Degree or equivalent qualification in the relevant subject.	Objective Type Test (MCQ) <b>Part-I</b> English = 20 marks <b>Part-II</b> Subject Test = 50 marks <b>Part-III</b> Professional Test = 30 marks <b>Note:</b> <ul style="list-style-type: none"> <li>In Language Subjects (i.e <b>Urdu and English</b>), English part for 20 marks will not be included. There will be 70% subject Test and 30% Professional Test.</li> <li>In the subject of Health &amp; Physical Education, there will be English (20 marks), Subject Test (50 marks) and Professional Test (30 marks)</li> </ul>	<b>A. For Urdu</b> <b>Part-I (Master's Level) (70 Marks)</b> <table style="width: 100%; border: none;"> <tr><td style="text-align: right;">اردو ذخیرہ الفاظ</td><td style="text-align: center;">☆</td></tr> <tr><td style="text-align: right;">اردو جملے کا ڈھانچہ</td><td style="text-align: center;">☆</td></tr> <tr><td style="text-align: right;">اردو قواعد کا استعمال</td><td style="text-align: center;">☆</td></tr> <tr><td style="text-align: right;">لسانیات</td><td style="text-align: center;">☆</td></tr> <tr><td style="text-align: right;">انیسویں اور بیسویں صدی کا اردو ادب اور اس کا تنقیدی جائزہ</td><td style="text-align: center;">☆</td></tr> <tr><td style="text-align: right;">اردو ادب کی نثری اصناف کا تحقیقی جائزہ</td><td style="text-align: center;">☆</td></tr> <tr><td style="text-align: right;">اردو ادب کی شعری اصناف کا تحقیقی جائزہ</td><td style="text-align: center;">☆</td></tr> <tr><td style="text-align: right;">غالبیات</td><td style="text-align: center;">☆</td></tr> <tr><td style="text-align: right;">اقبالیات</td><td style="text-align: center;">☆</td></tr> </table> <b>Part-II (30 Marks)</b> <ul style="list-style-type: none"> <li>Teaching Techniques and Methodology,</li> <li>Classroom Management and Discipline,</li> <li>Testing and Evaluation,</li> <li>Development of Education in Pakistan.</li> </ul> <b>B. For English</b> <b>Part-I (Master's Level) (70 Marks)</b> <ul style="list-style-type: none"> <li>English Literature 16<sup>th</sup> to 20<sup>th</sup> Century.</li> <li>Vocabulary</li> <li>Structuring of sentences.</li> <li>Linguistics.</li> <li>English Language Teaching.</li> <li>Grammar.</li> <li>Syntax.</li> <li>Diction.</li> </ul> <b>Part-II (30 Marks)</b> <ul style="list-style-type: none"> <li>Teaching Techniques and Methodology,</li> <li>Classroom Management and Discipline,</li> <li>Testing and Evaluation,</li> <li>Development of Education in Pakistan.</li> </ul>	اردو ذخیرہ الفاظ	☆	اردو جملے کا ڈھانچہ	☆	اردو قواعد کا استعمال	☆	لسانیات	☆	انیسویں اور بیسویں صدی کا اردو ادب اور اس کا تنقیدی جائزہ	☆	اردو ادب کی نثری اصناف کا تحقیقی جائزہ	☆	اردو ادب کی شعری اصناف کا تحقیقی جائزہ	☆	غالبیات	☆	اقبالیات	☆
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اردو جملے کا ڈھانچہ	☆																						
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S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
					<p><b>C. For Health and Physical Education</b></p> <p><b>Part-I</b> Vocabulary, Grammar usage, Sentence Structuring.</p> <p><b>Part-II (Masters Level)</b></p> <ul style="list-style-type: none"> <li>• Philosophy of Physical Education,</li> <li>• Curriculum of Physical Education,</li> <li>• Psychology of Physical Education,</li> <li>• Measurement &amp; Evaluation,</li> <li>• Rules of all games,</li> <li>• Rules of all Athletic events,</li> <li>• Recreation,</li> <li>• Audio Visual aid,</li> <li>• Athletic Injuries,</li> <li>• Handicap Sports Organization.</li> </ul> <p><b>Part-III</b></p> <ul style="list-style-type: none"> <li>• Teaching Techniques and Methodology</li> <li>• Classroom Management and Discipline</li> <li>• Testing and Evaluation</li> <li>• Development of Education in Pakistan</li> </ul>
7.	42/2017	Programmer (BS-17), Institute of Optronics, Ministry of Defence Production.	<p>Second Class or Grade 'C' Master's Degree in Computer Science/ Information Technology or equivalent qualification from a University recognized by the HEC.</p> <p style="text-align: center;"><b>OR</b></p> <p>Second Class or Grade 'C' Bachelor's degree in Computer Science/BIT (04 years duration) or equivalent qualification from a University recognized by the HEC.</p>	<p>Objective Type Test (MCQ)</p> <p><b>Part-I</b> English = 20 marks</p> <p><b>Part-II</b> Professional Test = 80 marks</p>	<p><b>Part-I</b> Vocabulary, Grammar Usage, Sentence Structuring.</p> <p><b>Part-II</b></p> <ul style="list-style-type: none"> <li>• Operating Systems and Importance of DOS</li> <li>• Detailed Description of High Level and Low Level Languages and its Importance/Utilities.</li> <li>• Classification of Software and its Advantages</li> <li>• Application of Logic Gates and Combination Circuit</li> <li>• Inventory Control Data Base Programming and its Techniques.</li> <li>• Advantages of Visual C++ and Basic</li> <li>• Computer Simulation Techniques for Research &amp; Development Work</li> <li>• Algorithm and its Advantages</li> <li>• Web Designing and File Management System</li> <li>• Computer Networking and its Rule &amp; Advantages.</li> </ul>

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
8.	46/2017	Lecturer (Computer Science) (Female) (BS-17), Federal Government Colleges for Women, Federal Directorate of Education, Islamabad, Capital Administration and Development Division.	Second Class or Grade 'C' Master's degree in Computer Science or equivalent.	Objective Type Test (MCQ) <b>Part-I</b> English = 20 marks <b>Part-II</b> Subject Test = 50 marks <b>Part-III</b> Professional Test = 30 marks	<b>Part-I</b> Vocabulary, Grammar Usage, Sentence Structuring <b>Part-II (Masters Level)</b> <ul style="list-style-type: none"> <li>• Computer Hardware/Software,</li> <li>• Data Communication &amp; Networking,</li> <li>• C/C++ Language,</li> <li>• Visual Basic,</li> <li>• Operating System Unix/Linux</li> <li>• Windows XP, 2000,</li> <li>• Oracle/PLSQL,</li> <li>• System Analysis &amp; Design.</li> <li>• Web Programming,</li> </ul> <b>Part-III</b> <ul style="list-style-type: none"> <li>• Teaching Techniques and Methodology,</li> <li>• Classroom Management and Discipline,</li> <li>• Testing and Evaluation,</li> <li>• Development of Education in Pakistan</li> </ul>
9.	47/2017	Inspector (BS-16), Pakistan Railways Police, Ministry of Railways.	Second Class or Grade 'C' Bachelor's degree from a University recognized by HEC.	Objective Type Test (MCQ) <b>Part-I</b> English = 20 marks <b>Part-II</b> General Intelligence Test = 80 marks	<b>Part-I</b> Grammar Usage, Sentence Structuring. <b>Part-II</b> <ul style="list-style-type: none"> <li>• Basic Arithmetic.</li> <li>• Current Affairs.</li> <li>• Pakistan Affairs &amp; Islamic Studies</li> <li>• Everyday/General Science</li> </ul> <b>Note : (Equal weightage for each topic at Part-II)</b>
10.	55/2017	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 or equivalent qualification from a university recognized by the HEC.	Objective Type Test (MCQ) <b>Part-I</b> English = 20 marks <b>Part-II</b> Subject Test = 50 marks	<b>Part-I</b> Grammar Usage, Sentence Structuring. <b>Part-II</b> <ul style="list-style-type: none"> <li>• Philosophy of Physical Education,</li> <li>• Curriculum of Physical Education,</li> <li>• Psychology of Physical Education,</li> <li>• Measurement &amp; Evaluation,</li> <li>• Rules of all games,</li> <li>• Rules of all Athletic events,</li> <li>• Recreation,</li> <li>• Audio Visual aid,</li> </ul>
11.	56/2017	Physical Education Teacher (Female) (BS-16 Plus 25% Special Pay), Education Department, Gilgit Baltistan, Ministry of Kashmir Affairs and Gilgit Baltistan.	ii. Two (2) years post qualification experience in the field of Health and Physical Education.	<b>Part-III</b> Professional Test = 30 marks	<b>Part-III</b> <ul style="list-style-type: none"> <li>• Teaching Techniques and Methodology</li> <li>• Classroom Management and Discipline</li> <li>• Testing and Evaluation</li> </ul>

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
12.	59/2017	Scientific Research Officer (BS-17 Plus 25% Special Pay), Fisheries Department, Gilgit Baltistan, Ministry of Kashmir Affairs and Gilgit Baltistan.	i. Second Class or Grade 'C' Master's degree in Zoology/ Biology from a university recognized by the HEC. ii. Two (2) years post qualification research experience in the field of Fisheries.	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"> <li>• Major natural fisheries resources</li> <li>• Distribution of Fish Fauna of Gilgit-Baltistan</li> <li>• Fish distribution Zones in Gilgit-Baltistan</li> <li>• Major Fish diseases in cultured trout and their treatment</li> <li>• Nutrition and feeds of cultured trout</li> <li>• Brood stock Husbandry/Hatchery Management</li> <li>• Transportation of Live fish seed and brood stock</li> <li>• Major categories of fish aquaculture</li> <li>• Research Methodology</li> <li>• GB Fisheries Act 1975</li> </ul>

## Schemes and Syllabi for Written Examination (Descriptive) for All Posts in BS-18 & BS-19 included in Consolidated Advertisement No. 02/2017

### 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.4-16/2017-R
Particulars of post	Chief Documentation Officer (BS-19), Academy of Educational Planning and Management (AEPAM), Ministry of Federal Education and Professional Training
Minimum Qualification & Experience:	Ph. D in Library Sciences with 08 years post qualification experience in the relevant field. <b>OR</b> M. Phil in Library Sciences with 10 years post qualification experience in the relevant field. <b>OR</b> Second Class or Grade 'C' Master's degree in Library Science with 12 years post qualification experience in the relevant field

**Part-I: 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, Theory of Organization, Principles 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, Capital Budget, 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

**Part-II: (Library/Information Science) 50 Marks****I. Use of Emerging Technologies in Library**

Information and other Library Technologies. Hardware. Software. Operating System. Telecommunications and Networks. Internet and the www, Barcode Technology, Wireless Technology and Virtual Private Network (VPN). Social Networking. Email. Word

Processing. Spreadsheets. Presentation Software. Desktop Publishing. Databases. Library Security Systems. Tele-lifts. Digitization Hardware and Software. Reprographic Technology.

## ii. Organization of Information

Systems for Organization of Information: Environments, Storage and Retrieval Tools, Encoding Standards, Cataloguing Codes, Current Systems. The Information Organization Process: Surrogate/ Metadata Records: Description, Access; Authority Control. Subject Access: Analysis, Verbal Subject Approaches, Classification. Organization and Administration: Arrangement, Management Issues. Problems of Information Organization in Pakistan.

## iii. Basic Reference Sources

Definition. Evaluation Criteria. Bibliographies-- General Bibliographies, Basic Guides To Reference Materials, Library Catalogues; Serials Guides; Indexes and Abstracts; HEC NDL; Dictionaries and Thesauri; Almanacs And Fact Books; Encyclopaedias; Directories; Biographical Sources; Geographical Sources-- Maps, Atlases & Gazetteers; Reference Websites.

## iv. Management of Library and Information Services

Basic Theories and Principles of Administration for Effective Management of Public, Academic, and Special Libraries and Information Centres with emphasis on Planning, Organizing, Staffing, Directing, Coordinating, Reporting, and Budgeting. Administrative Aspects of Public and Technical Services, Facilities, Rules and Regulations, Evaluation, Public Relations, Inter-Agency Cooperation, and Change Management. Library Space Management.

### SUGGESTED READINGS

S. No.	Title	Author
1.	Human Resource Management	H.T. Graham & Roger Bennett
2.	Management	James A.F. Stoner, R. Edward Freeman, Daniel R. Gilbert Jr.
3.	Understanding Computer: Today and Tomorrow	Deborah Morley, Charles Parker
4.	MS Office 365 Handbook: 2013 Edition	Kevin Wilson
5.	Governance	Anne Mette Kjær
6.	The Electronic Library.	Rowley, J. (2001).
7.	Role of ICTs in Library and Information Science	A. Kaliaammal & G. Thamaraiselvi
8.	Discovering computers 2007: A gateway to information.	Shelly, G. B., Cashman, T. J., & Vermaat, M. (2007).
9.	Guide to selecting and cataloging quality WWW resources for the small library.	Coleman, A. (2004).
10.	Jadid Catalogue Sazi	Khurshid, Anis (1993)
11.	Reference and information services: An introduction.	Bopp, R. E., & Smith, L. C. (2001).
12.	Introduction to reference work: Vol. 1,	Katz, W. A. (2002).
13.	Management basics for information professionals.	Evans, G. E., Layzell Ward, P., Rugaas, B., & Evans, G. E. (2007).
14.	The practical library manager.	Massis, B. E. (2003).



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

Case No.	F.4-18/2017-R
Particulars of post	Director (BS-19) Textile Commissioner's Organization, Karachi, Ministry of Textile Industry
Minimum Qualification & Experience:	i. Master's Degree in Textile Technology. ii. Ten years post qualification experience in the field of Textile in a Government/ Semi Government/ Reputable Private Industrial Research/ Trade Organization. <b>OR</b> i. Bachelor's Degree in Textile Technology. ii. Twelve years post qualification experience in the field of Textile in a Government/ Semi Government/ Reputable Private Industrial Research/ Trade Organization.

**Textile Technology/Engineering: 100 Marks**

- I. **Textile Fibre:** Definition and classifications of textile fibres, Vegetable Fibres, Animal Fibres, Mineral Fibres, Regenerated Fibres and Synthetic Fibres
- II. **Textile Engineering Utilities & Services:** Compressors, Air conditioners, Humidifiers, Industrial lighting, Fire fighting systems, Steam generation systems, Steam transportation systems, Water and energy conservation in textile industry
- III. **Textile Chemical Processing:** Introduction to textile chemical processing, Chemical processing flow chart, Shearing & Singeing Fundamentals, Desizing & Scouring Fundamentals, Bleaching & Mercerizing Fundamentals, Dyeing Fundamentals, Color Science Fundamentals, Printing Fundamentals, Finishing Fundamentals
- IV. **Yarn Production Process:** Roving, Spinning, Auto winding, Yarn conditioning and packaging
- V. **Statistical Methods used in Textile Industry:** Introduction to statistics & probability, Acceptance sampling in textiles, Measures of central tendency, Measures of variation, Analysis of variation (ANOVA), Correlation & Regression, Statistical process control, Process control charts, Pareto charts, Process capability analysis, Design & analysis of experiments

**SUGGESTED READINGS**

S. No.	Title	Author
1.	Handbook of Textile Fibres	J. Gordon Cook
2.	Air-conditioning in Textile Mills	S. P. Patel, ATIRA silver jubilee monographs
3.	Heat Transfer Design Methods	John J. McKetta Jr
4.	Textile Project Management	A. Ormerod
5.	Dyeing of Textile Materials	Jose Cegarra, Textilia
6.	Textile Printing	W.C. Miles
7.	Spun Yarn Technology	Eric Oxtoby
8.	Manual of Cotton Spinning	Gilbert R. Merrill
9.	Statistical Methods for Textile Technologists	T. K.P. Norris, L.H. C. Tippet Murphy
10.	Statistical Methods used in Textile Industry	A. Brearley & D.R. Cox

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

Case No.	F.4-20/2017-R
Particulars of post	Assistant Professor Statistics (Male) (BS-18), Federal Government Educational Institutions (FGEI) (Cantts/Garrisons), M/O Defence
Minimum Qualification & Experience:	Ph.D. Degree in Statistics with one (1) year post qualification teaching experience at College/ University level <b>OR</b> M. Phil Degree in Statistics with three (3) years post qualification teaching experience at College/ University level <b>OR</b> 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.

**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. 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).

**IV. 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.

## V. 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

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

Case No.	F.4-23/2017-R
Particulars of post	Vice Principal/ Headmaster (Male) (BS-18), Federal Govt. Schools, Federal Directorate of Education, Islamabad, Capital Administration and Development Division.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Master's degree with B.Ed./M.Ed. ii. Five (5) years post qualification teaching and professional/administrative experience in a recognized Educational Institution.

**Part-I: 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, Theory of Organization, Principles 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, Capital Budget, 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

**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**

<b>S. No.</b>	<b>Title</b>	<b>Author</b>
1.	Human Resource Management	H.T.Graham & Roger Bennett
2.	Management	James A.F.Stoner, R.Eward Freeman, Daniel R.Gilbert Jr.
3.	Understanding Computer: Today and Tomorrow	Deborah Morley, Charles Parker
4.	MS Office 365 Handbook: 2013 Edition	Kevin Wilson
5.	Research in Education	JW Best
6.	Integrating Education Technology into Teaching	Roblyer
7.	Curriculum Development	S. M. Shahid
8.	Educational Measurement and Evaluation	S. M. Shahid
9.	Educational Administration	S. M. Shahid

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

Case No.	F.4-26/2017-R
Particulars of post	Assistant Professor (Pakistan Studies) (BS-18), Federal College of Education, Islamabad, Capital Administration and Development Division.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Master's degree in Pakistan Studies. ii. Five (5) years post qualification teaching/ administrative experience at College/ University level.

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

- I. Ideology of Pakistan: Muslim rule in the Sub-Continent, its downfall and efforts for Renaissance. Movements for reforms-- Shaikh Ahmad Sarhindi, Shah Waliullah, Sayyid Ahmad Shaheed, Aligarh 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. Land and people of Pakistan-- Geography, Society, Natural resources, Agriculture, Industry and education with reference to characteristics, trends and problems.
- III. Nuclear Program of Pakistan, its Safety and Security; International Concerns
- IV. Regional Economic Cooperation (SAARC,ECO,SCO) and the Role of Pakistan
- V. Economic Challenges in Pakistan
- VI. Changing Security Dynamics for Pakistan: Challenges to National Security of Pakistan
- VII. Pakistan and US War on Terror
- VIII. Foreign Policy of Pakistan Post 9/11
- IX. Hydro Politics ; Water Issues in Domestic and Regional Context
- X. Pakistan's Energy Problems and their Effects
- XI. Kashmir Issue
- XII. The Prevailing Social Problems of Pakistan and the Strategies to deal with them i.e. Poverty, Education, Health and Sanitation.

**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.	The Future of Pakistan.	Cohen Stephen P. et al. Washington: Brookings Institute Press, 2011.
2.	Frontline Pakistan: The Struggle with Militant Islam.	Hussian, Zahid. New York: I.B.Tauris, 2007.
3.	Modern South Asia: History, Culture, Political Economy.	Jalal, Aisha and Bose, Sugata., New York: Routledge, 1998.
4.	Democracy and Authoritarianism in South Asia.	Jalal, Aisha, Cambridge: Cambridge University Press, 1995.
5.	Back to Pakistan: A Fifty Year Journey.	Mass, Leslie Noyes. Plymouth: Rowman & Littlefield Publishers, 2011.
6.	Kashmir in Conflict: India, Pakistan and the Unending War.	Schofield, Victoria. New York: I.B.Tauria, 2003.
7.	Making Sense of Pakistan.	Shaikh, Farzana. New York: Columbia University Press, 2009.
8.	A Brief History of Pakistan.	Wynbrandt, James. New York: Infobase Publishing, 2009.
9.	Pakistan's Energy Sector: From Crisis to Crisis-Breaking the Chain	Zaid Alahdad
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: 100Time Allowed: 3 Hours

Case No.	F.4-28/2017-R
Particulars of post	Associate Professor/Vice Principal (Botany) (Female) (BS-19), Islamabad Model Colleges for Girls, Federal Directorate of Education Islamabad, Capital Administration and Development Division
Minimum Qualification & Experience:	Ph.D. Degree in Botany with eight (8) years post qualification teaching and administrative experience at College/ University level. <b>OR</b> M. Phil Degree in Botany with ten (10) years post qualification teaching and administrative experience at College/ University level. <b>OR</b> Second Class or Grade 'C' Master's Degree in Botany with twelve (12) years post qualification teaching and administrative experience at College/ University level.

**Part-I: (Botany)****50 Marks****I. 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, CO<sub>2</sub> fixation, Mechanism of photophosphorylation.
- Respiration: Glycolysis, Krebs cycle, Mechanism of oxidative phosphorylation.

**II. Ecology**

- Influence of climatic, edaphic and biotic factors on plant growth. Vegetation sampling techniques. Concepts of ecosystems and their productivity, ecological energetics, Pyramids (of numbers, biomass and energy), trophic levels, food chains and food webs. Biogeochemical cycles (Hydrological and Nitrogen). Succession.
- Causes and reclamation of soil salinity and water logging in Pakistan. Soil erosion, its control and soil conservation methods. Deforestation. Biodiversity conservation. Pollution.

**III. Cytology**

- Cell cycle, cellular morphology, chemistry of cell wall and cell membrane, cell to cell communication, plant tissue and cell culture, cell senescence and cell death.
- Ultra-structure of various cell organelles: Mitochondria, Golgi bodies, Endoplasmic reticulum, Plastids, Ribosomes, Glyoxysomes, Vacuoles, Nucleus.

**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).

**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 Communication
- 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.	Plant Taxonomy and Biosystematics	Stac, C. A. 1980
2.	Plant Physiology	Taiz, L.& E. Zeiger 2006
3.	Molecular Cell Biology	Lodish,H., A. Berk, S.L. Zipursky, P. Matsudaira
4.	Morphology of Plants	Malik, T. A. 2006
5.	Fundamentals of Ecology	Odum, E.P. and Barrett, G.W. 2004
6.	Growth and Differentiation in Plants	Phillips and Wareings
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: 100Time Allowed: 3 Hours

Case No.	F.4-32/2017-R
Particulars of post	Associate Professor (Mathematics) (BS-19), Federal College of Education, Capital Administration and Development Division
Minimum Qualification & Experience:	Second Class or Grade 'C' Master's Degree in Mathematics with twelve (12) years post qualification teaching/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.
- 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 Communication
- 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**

<b>S. No.</b>	<b>Title</b>	<b>Author</b>
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.4-34/2017-R
Particulars of post	Associate Professor, Islamic Studies (Female) (BS-19), F.G. Colleges, Directorate of Federal Government Educational Institutions (FGEI) (Cantts/ Garrisons), Ministry of Defence
Minimum Qualification & Experience:	Ph.D. Degree in Islamic Studies with eight (8) years post qualification teaching and administrative experience at College/ University level. <b>OR</b> M. Phil Degree in Islamic Studies with ten (10) years post qualification teaching and administrative experience at College/ University level. <b>OR</b> Second Class or Grade 'C' Master's Degree in Islamic Studies with twelve (12) years post qualification teaching and administrative experience at College/ University level.

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

- Salient features of Islamic;
  - Social System
  - Political System
  - Economic System
  - Judicial System
  - Administrative System

**II. Study of Seerah**

Need and importance of the study of Seerah Prophet Mohammad (PBAH) as:

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

**III. Islamic Civilization and Culture:**

- Meanings and the vital elements of Islamic Civilization and Culture
- Distinctions of Islamic Civilization;
  - Tauheed
  - Risalat
  - Spiritualism
  - Dignity of Man
  - Equality
  - Social Justice
  - Moral values
  - Tolerance
  - Rule of Law

**IV. Islam and World**

- Muslim World and the Contemporary Challenges
- Role of Islam in the modern world.

**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 Communication
- 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**

<b>S. No.</b>	<b>Title</b>	<b>Author</b>
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.4-35/2017-R
Particulars of post	Assistant Professor (Male) (Political Science) (BS-18) F.G. Colleges, Directorate of Federal Government Educational Institutions (Cantts/ Garrisons), Ministry of Defence
Minimum Qualification & Experience:	Ph.D. Degree in the relevant subject with one year (1) post qualification teaching experience at College/ University level. <b>OR</b> M. Phil Degree in the relevant subject with three (3) years post qualification teaching experience at College/ University level. <b>OR</b> Second Class or Grade 'C' Master's Degree in the relevant subject with five (5) year post qualification teaching experience at College/ University level.

**Part-I: (Political Science)****50 Marks****I. Political Concept (Western and Islamic):**

Sovereignty, Justice, Law, Liberty, Freedom, Equality, Rights and Duties, Human Rights, Political authority and Power.

**II. Political Participation:**

Political Change and Revolution, Elections, Electoral System, Public Opinion, Propaganda, Political Parties, Pressure Groups and Lobbies.

**III. Political Institutions and Role of Government:**

Legislature, Executive, Judiciary, Political Elites, Civil-Military and Bureaucracy.

**IV. Forms of Government:**

Monarchy, Democratic, Dictatorship, Totalitarian/Authoritarian, Unitary, Federal, Confederation, Presidential and Parliamentary

**V. Government and Politics in Pakistan:**

Constitution making from 1947 -1956, A comparative and critical analysis of 1956, 1962, 1973 Constitutions of Pakistan, Constitutional Amendments up-to-date, Federal structure in Pakistan, and Central-Provincial relations after 18<sup>th</sup> amendment in the Constitution.

**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 Communication
- 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**

<b>S. No.</b>	<b>Title</b>	<b>Author</b>
1.	Political Thought in Medieval Islam	Erwin I.J. Rosenthal
2.	Modern Islamic Political Thought	Hamid Enayat,
3.	International Politics: A Framework for Analysis	Holsti, K.J.
4.	21 <sup>st</sup> Century Political Science: A Reference Handbook	John T.Ishiyama, Marijke Breuning,
5.	Political Thought from Plato to Present	Judd Herman,
6.	Government and Politics in Pakistan	Mushtaq Ahmad
7.	Islami Riyasat	Syed Abul Aala Maudoodi
8.	Contemporary Political Philosophy: An Introduction	Will Kymlicka
9.	Research in Education	JW Best
10.	Integrating Education Technology into Teaching	Roblyer
11.	Curriculum Development	S. M. Shahid
12.	Educational Measurement and Evaluation	S. M. Shahid
13.	Educational Administration	S. M. Shahid

**PAPER-II: PROFESSIONAL**

Max Marks: 100

Time Allowed: 3 Hours

Case No.	F.4-37/2017-R
Particulars of post	Vice Principal/Headmistress (Female) (BS-18), F.G. Schools, Federal Directorate of Education, Islamabad, Capital Administration & Development Division.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Master's degree with B.Ed./M.Ed. ii. Five (5) years post qualification teaching and professional/administrative experience in a recognized Educational Institution.

**Part-I: 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, Theory of Organization, Principles 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, Capital Budget, 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

**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 Communication
- 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**

<b>S. No.</b>	<b>Title</b>	<b>Author</b>
1.	Human Resource Management	H.T.Graham & Roger Bennett
2.	Management	James A.F.Stoner, R.Eward Freeman, Daniel R.Gilbert Jr.
3.	Understanding Computer: Today and Tomorrow	Deborah Morley, Charles Parker
4.	MS Office 365 Handbook: 2013 Edition	Kevin Wilson
5.	Research in Education	JW Best
6.	Integrating Education Technology into Teaching	Roblyer
7.	Curriculum Development	S. M. Shahid
8.	Educational Measurement and Evaluation	S. M. Shahid
9.	Educational Administration	S. M. Shahid

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

Case No.	F.4-38/2017-R
Particulars of post	Assistant Professor <b>Commerce</b> , Male (BS-18), Islamabad Model Colleges, Capital Administration & Development Division
Minimum Qualification & Experience:	Ph.D. Degree in Commerce with one year (1) post qualification teaching experience at College/ University level. <b>OR</b> M. Phil Degree in Commerce with three (3) years post qualification teaching experience at College/ University level. <b>OR</b> Second Class or Grade 'C' Master's Degree in Commerce with five (5) year post qualification teaching experience at College/ University level.

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

- I. **Introduction to Business Finance:** Nature and Scope of a Business Entity, Contemporary Challenges posed to a Business, Common Legal Forms of a Business Entity, Meaning, Nature and Scope of Finance and Financial Management, Common Modes (Types) of Business Finance – Short- Medium- and Long-term Financing,
- II. **Auditing:** Nature and Purpose of Auditing, Audit Planning and Control, Audit Procedures and Techniques, Audit Evidence and Documentation,
- III. **Role and Responsibilities of an Auditor:** Auditor's professional and legal Rights, Responsibilities & Duties, and Liabilities, Auditor's Opinion and Report and their classification (Types), as specified under the Companies Ordinance 1984 and in the handbook of IFAC.
- IV. **Cost Accounting:** Concepts and Scope of Cost Accounting, Cost Classification and Flows, Material Costing and Control, Labour Costing and Control, Factory Overhead Costing and Control, Types of Costing Systems
- V. **Managerial Economics:** The Nature and Scope of Managerial Economics, Optimization Techniques and new Management Tools, Demand Theory, Demand Estimation, Demand Forecasting, Production and Cost Analysis, Cost Theory and Estimation, Linear Programming, Risk Analysis
- VI. **Financial Management:** Elements of Financial Administration, Performance and Programmed Budgeting, Capital Budget, Principles of Budgeting, Auditing and Accounting.

**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 Communication
- 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**

<b>S. No.</b>	<b>Title</b>	<b>Author</b>
1.	Fundamentals of Accounting Principles	Wild. Larson. Chiappetta
2.	Principles of Accounting, and Advanced Accounting	Sohail Afzal
3.	Cost Accounting	Nisar ur Din.
4.	Advanced Auditing	Prof. Dr. Khuaja Amjad Saeed
5.	Managerial Economics	Micheal Baye
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: 100Time Allowed: 3 Hours

Case No.	F.4-40-A/2017-R
Particulars of post	Assistant Professor ( <b>Mass Communication</b> ) (Female) (BS-18), Islamabad Model Colleges for Girls, Federal Directorate of Education Islamabad, Capital Administration and Development Division
Minimum Qualification & Experience:	Ph.D. Degree in the relevant subject with one (1) year post qualification teaching experience at College/ University level. <b>OR</b> M. Phil Degree in the relevant subject with three (3) years post qualification teaching experience at College/ University level. <b>OR</b> Second Class or Grade 'C' Master's Degree in the relevant subject with five (5) years post qualification teaching experience at College/ University level.

**Part-I: (Mass Communication)****50 Marks****I. Basic models in Mass Communication: -**

Lasswell's Model (1948), Shannon-Weaver model (1948), Osgood,s model (1954), Schramm's model (1954), Newcomb's symmetry theory (1953), Westley-McLean's model (1976), Gerbner model (1956)

**II. Mass Communication Theories**

Normative theories of the press: Schramm's four theories and criticism on these theories, Media as agents of power,

**III. Media and Society**

Mass media and social change, Media as a social system: The balance between interrelation and interdependence, Media freedom and its role for democracy, The functional approach to mass media: four social functions of the media, Media as an awareness agent, Mass media and social representation

**IV. Mass Media in Pakistan:**

Media system in Pakistan: historical, chronological, and analytical review, The system of journalism and the media system, Government-press relations, The new 24/7 television: uses and abuses, The question of freedom and responsibility

**V. Media Laws and Ethics:**

Development of media regulations from British colonial era to independent Pakistan, Libel, Defamation and relevant portions of PPC, PPO, RPPPO, PEMRA: establishment, development, and operational mechanisms, Press Council of Pakistan (PCP), Citizens Media Commission: need, present status, and reasons for inactivity, Press Code of Ethics, Inability of the media to develop a code of ethics as an institution, The media's quest for freedom and its inability to self regulate.

**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 Communication
- 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**

<b>S. No.</b>	<b>Title</b>	<b>Author</b>
1.	Communication Models for The Study of Mass Communication, 2 <sup>nd</sup> Ed	McQuail, Dennis & Windhal, Swen, Longman, 1982.
2.	Communication Theories: Origins, Methods and Uses in the Mass Media 5 <sup>th</sup> Ed	Werner J. Severin, James W. Tankard Jr. Longman, 1997.
3.	Ethics in Journalism: A Reader on Their Perception in the Third World	Kunczik, Michael (Ed.). FES 1999.
4.	Media And Society into the 21 <sup>st</sup> Century: A Historical Introduction	Blackwell publishing Ltd, USA.
5.	“Media Now: Communication Media in the Information Age”	Wads Worth/Thompson Learning, Belmont, CA
6.	News Media and Journalism in Pakistan	Khan, Altaf. LAP Lambert Academic Publishing. June 2011.
7.	News Media and Journalism in Pakistan and Germany (Ed.)	Khan, Altaf. Peshawar, 2003.
8.	Political Communication in Asia,	Routledge, NY.
9.	Principles of Editing	McGraw-Hill 1996
10.	The Hand Book of New Media	London: Sage
11.	Telecommunications Policy in Pakistan”	Telematics and Informatics
12.	“Model Freedom of Information Act”, 2001	Consumer rights Protection Commission of Pakistan
13.	Research in Education	JW Best
14.	Integrating Education Technology into Teaching	Roblyer
15.	Curriculum Development	S.M. Shahid
16.	Educational Measurement and Evaluation	S.M. Shahid
17.	Educational Administration	S.M. Shahid



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

Case No.	F.4-40-B/2017-R
Particulars of post	Assistant Professor ( <b>History</b> ) (Female) (BS-18), Islamabad Model Colleges for Girls, Federal Directorate of Education Islamabad, Capital Administration and Development Division
Minimum Qualification & Experience:	Ph.D. Degree in the relevant subject with one (1) year post qualification teaching experience at College/ University level. <b>OR</b> M. Phil Degree in the relevant subject with three (3) years post qualification teaching experience at College/ University level. <b>OR</b> Second Class or Grade 'C' Master's Degree in the relevant subject with five (5) years post qualification teaching experience at College/ University level.

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

- I. **Muslim Rule and Heritage in India (712-1857):** Political History Arrival, foundation and consolidation of Muslim rule in India, important rulers of the Slave Dynasty and the Mughals. The Spirit and legacy of Muslim civilization, Art, Architecture and literature, Public Administration under Muslim Rules. Industry, trade and commerce under the Muslim patronage, Financial Administration.
- II. **British Rule in India: 1857-1947:** British Imperialism, origin and growth of the East India Company, Causes and effects of downfall of the Mughal Empire in India, War of Independence in 1857: Causes and effects.
- III. **Muslim Struggle for Independence:** Role of Shah Wali Ullah, Syed Ahmad Shaheed and Sir Syed Ahmed Khan towards regeneration of the Muslim of South Asia, All India Muslim League, Partition of Bengal, Simla Deputation, Lucknow pact; Khilafat movement. Nehru Report, Quaid-i- Azam's Fourteen Points.
- IV. **Pakistan Movement:** Allama Iqbal's Allahabad Address 1930, and Round Table Conference. The Congress Rule in the provinces-1937-1939, Lahore Resolution 1940, various Missions and Plans for the partition of the South Asia. Founders of Pakistan: Quaid-i-Azam, Mohsin-ul-Mulk, Syed Amir Ali, Ali Brothers. Sir Agha Khan, Ch. Khaliq uz Zaman, Chaudhry Rahmat Ali, etc.
- V. **Foreign Policy of Pakistan (1947-2015)**

**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 Communication
- 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.	India's Struggle for Independence	Chandre Bipin, 1989
2.	Wavell and the Days of the Raj: Britain's Penultimate Viceroy in India,	Chawla, Muhammad Iqbal, 2011
3.	The Charismatic Leader: Jinnah and the Creation of Pakistan	Hayat, Sikandar, 2007
4.	Muslim Civilization of Indo-Pakistan.	Ikram, Shaikh Muhammad, 1966
5.	A History of Muslim Philosophy	Sharif, M.M.
6.	The History of Islamic Peoples	Brockelmann, Carl (ed)
7.	Constitutional and Political History of Pakistan	Khan, Hamid, 2005
8.	The Military and Politics in Pakistan 1947-86	Rizvi Hassan Askari
9.	Research in Education	JW Best
10.	Integrating Education Technology into Teaching	Roblyer
11.	Curriculum Development	S.M. Shahid
12.	Educational Measurement and Evaluation	S.M. Shahid
13.	Educational Administration	S.M. Shahid

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

Case No.	F.4-40-C/2017-R
Particulars of post	Assistant Professor ( <b>Applied Psychology</b> ) (Female) (BS-18), Islamabad Model Colleges for Girls, Federal Directorate of Education Islamabad, Capital Administration and Development Division
Minimum Qualification & Experience:	Ph.D. Degree in the relevant subject with one (1) year post qualification teaching experience at College/ University level. <b>OR</b> M. Phil Degree in the relevant subject with three (3) years post qualification teaching experience at College/ University level. <b>OR</b> Second Class or Grade 'C' Master's Degree in the relevant subject with five (5) years post qualification teaching experience at College/ University level.

**Part-I: (Applied Psychology)****50 Marks**

- I. **Nature and Scope of Psychology:** Definition and scope, Psychology as a Science, Schools, Perspectives, and Models of Psychology, Recent Trends
- II. **Psychological Assessment:** Attributes of Psychological Measures, Validity, Reliability, Item Analysis, Norms, Modern Test Theory, Selection and Training, Educational and Clinical Assessment, Ethical Standards and Legal Issues
- III. **Personality:** Determinants of Personality, Factors in Development of Personality, Theoretical Perspectives, Traits and Types, Personality Assessment and Techniques, Cross-Cultural Issues.
- IV. **Intelligence:** Theories of Intelligence, Types of intelligence (IQ, EQ), Assessing Intelligence
- V. **Developmental Psychology:** Physical, Cognitive, Social and Emotional development in Childhood, Adolescence, Adulthood and Old Age
- VI. **Organizational/Industrial Psychology:** Leadership styles, Decision making, Work motivation, Organizational Culture, Stress and Conflict at Work and its Management, Organizational Socialization, Job related Attitude, Sexual Harassment, Glass Ceiling, Human Computer interaction.

**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 Communication
- 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.	Applied Industrial/Organizational Psychology	Aamodt, M.
2.	Introduction to Psychology	Atkinson R. C., & Smith, E. E
3.	Introduction to Psychology: Gateways to Mind and Behavior	Coon, D., & Mitterer, J.
4.	Development Across the Life Span	Feldman, R.
5.	Foundation of Psychology	Hayes, N
6.	Organizational Psychology	Singh, P.
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: 100Time Allowed: 3 Hours

Case No.	F.4-41/2017-R
Particulars of post	Assistant Professor <b>Chemistry</b> (Male) (BS-18), Islamabad Model Colleges for Boys, Federal Directorate of Education Islamabad, Capital Administration and Development Division
Minimum Qualification & Experience:	Ph.D. Degree in the relevant subject with one (1) year post qualification teaching experience at College/ University level. <b>OR</b> M. Phil Degree in the relevant subject with three (3) years post qualification teaching experience at College/ University level. <b>OR</b> Second Class or Grade 'C' Master's Degree in the relevant subject with five (5) years post qualification teaching 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. Electrolysis, 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.
- 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 Communication
- 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.	Advanced Inorganic Chemistry 3 <sup>rd</sup> Ed.	Cotton. F.A. and Wilkinson Groffrey
2.	Inorganic Chemistry, 3 <sup>rd</sup> Ed. 1983	Hukeavy, James E.
3.	Physical Chemistry 5 <sup>th</sup> Ed.	Moore, Walter J.
4.	Mechanism & Structure in Organic Chemistry	Gould, Edwards
5.	Organic Chemistry 2 <sup>nd</sup> 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: 100Time Allowed: 3 Hours

Case No.	F.4-48/2017-R
Particulars of post	Assistant Engineering Adviser (Civil)/ Senior Engineer (Floods)/ Deputy Director (Supervision & Monitoring) (BS-18), Office of the Chief Engineering Adviser/ Chairman Federal Flood Commission, Ministry of Water and Power
Minimum Qualification & Experience:	<p>i. Bachelor's Degree in Civil Engineering or an equivalent qualification from a recognized University/ Institution.</p> <p>ii. Five years post qualification experience in Planning, Design or construction or operation of Dams, Irrigation System or Hydraulic Works including use of construction equipment in BS-16 and above or equivalent in a Government/ Semi-Government/ reputable private organization.</p>

**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. Transportation Engineering:**

Introduction, highway administration, scheme preparation, traffic appraisal, environmental appraisal, highway geometry, drainage, lighting, signing, communications and safety, roads and traffic in urban areas, highway maintenance, low cost roads in developing countries.

**III. Environmental Engineering:**

Environmental impacts on water resources projects, transportation engineering projects, waste water treatment and management, water supply and distribution.

**IV. Fundamentals of Hydraulic Engineering:**

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

**V. Project Management:**

Time lines, milestones, resources allocation, dependency, Gant Charts,

**VI. Inventory Management:**

FIFO models, LIFO models, Identification Schemes, Inventory management systems.

**VII. Quality Management Systems:**

QA modles. Deming, Juran Crosby, Quality circles, management responsibility, quality planning, purchasing, design process and design validation, quality audit, corrective and preventive measures.

**SUGGESTED READINGS**

<b>S. No.</b>	<b>Title</b>	<b>Author</b>
1.	Properties of Concrete	A.M. Neville.
2.	Plain and reinforced concrete	Nilson.
3.	Strength of material	Andrew Pytel and Singer.
4.	Transportation Engineering, Planning and design	Paul Wright.
5.	Civil Engineer's Reference Book	LS Blake
6.	Surveying and Levelling	T.P Kanetaker.
7.	Public Health Engineering	STEEL.
8.	Fluid mechanics with engineering applications	Finnemore/ Franzini.
9.	Handbook of Engineering Management	Dennis Lock.
10.	Total Quality Management	Dale H. Besterfield, Carol Besterfield-Michna, Glen H. Besterfield, Mary Gesterfield-Sacre



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

Case No.	F.4-53/2017-R
Particulars of post	Principal/ Headmaster/ Senior Teacher/ Instructor ( <b>Male</b> ) (BS-18 plus 25% special pay), Education Department, Gilgit Baltistan, Ministry of Kashmir Affairs and Gilgit Baltistan.
Minimum Qualification & Experience:	<p>i. Second Class or Grade 'C' Master's degree with B.Ed. (Hons)/ B.Ed ./M.Ed. or equivalent qualification from a university recognized by the HEC.</p> <p>ii. Five (5) years post qualification teaching experience including at least two (2) years of administrative experience in recognized educational Institutions.</p>

**Part-I: 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, Theory of Organization, Principles 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, Capital Budget, 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

**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 Communication
- 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**

<b>S. No.</b>	<b>Title</b>	<b>Author</b>
1.	Human Resource Management	H.T.Graham & Roger Bennett
2.	Management	James A.F.Stoner, R.Eward Freeman, Daniel R.Gilbert Jr.
3.	Understanding Computer: Today and Tomorrow	Deborah Morley, Charles Parker
4.	MS Office 365 Handbook: 2013 Edition	Kevin Wilson
5.	Research in Education	JW Best
6.	Integrating Education Technology into Teaching	Roblyer
7.	Curriculum Development	S. M. Shahid
8.	Educational Measurement and Evaluation	S. M. Shahid
9.	Educational Administration	S. M. Shahid

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

Case No.	F.4-54/2017-R
Particulars of post	Principal/ Headmaster/ Senior Teacher/ Instructor ( <b>Female</b> ) (BS-18 plus 25% special pay), Education Department, Gilgit Baltistan, Ministry of Kashmir Affairs and Gilgit Baltistan.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Master's degree with B.Ed. (Hons)/ B.Ed ./M.Ed. or equivalent qualification from a university recognized by the HEC. ii. Five (5) years post qualification teaching experience including at least two (2) years of administrative experience in recognized educational Institutions.

**Part-I: 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, Theory of Organization, Principles 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, Capital Budget, 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

**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 Communication
- 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**

<b>S. No.</b>	<b>Title</b>	<b>Author</b>
1.	Human Resource Management	H.T.Graham & Roger Bennett
2.	Management	James A.F.Stoner, R.Eward Freeman, Daniel R.Gilbert Jr.
3.	Understanding Computer: Today and Tomorrow	Deborah Morley, Charles Parker
4.	MS Office 365 Handbook: 2013 Edition	Kevin Wilson
5.	Research in Education	JW Best
6.	Integrating Education Technology into Teaching	Roblyer
7.	Curriculum Development	S. M. Shahid
8.	Educational Measurement and Evaluation	S. M. Shahid
9.	Educational Administration	S. M. Shahid