

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. 01/2018

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
1.	04/2018	Charge/ Staff Nurse (Female) (BS-16), Military Hospitals, Ministry of Defence	i Bachelor's Degree in Nursing or equivalent qualification recognized by the Pakistan Nursing Council. ii Registration with Pakistan Nursing Council. OR i Three (3) years Diploma in Nursing ii One (1) year Course/ Certificate in Midwifery. iii Registration with Pakistan Nursing Council.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Basic Medical Sciences • General Nursing • Ward Administration • Hospitality of the Patients • Care vs. Cure for Health Management • Developing Training & Instructional Materials for Nursing Courses.
2.	05/2018	Official Reporter (English) (BS-17), National Assembly Secretariat	i. 2 nd 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"> • Typing Test with minimum Speed of 50 W.P.M • Shorthand Test with minimum Speed of 120 W.P.M 	50 Marks 50 Marks
3.	07/2018	3rd Engineer (Textile) (BS-17), Pakistan Navy, Ministry of Defence	Second Class or Grade 'C' Bachelor's degree in Textile Engineering OR Second Class or Grade 'C' Master's degree in Textile Chemistry	Objective Type Test (MCQ) Part-I English =20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • General Textile Technology, • Spinning & Weaving, • Dyeing and Finishing, • Testing and Quality Control, • Industrial Management and Human Relations.
4.	13/2018	Assistant Meteorologist, (BS-16), Pakistan Meteorological Department,	Second Class or Grade 'C' B.Sc. Degree in Physics/ Mathematics/ Space Science/	Objective Type Test (MCQ) Part-I	Part-I Grammar Usage, Sentence Structuring

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
		Aviation Division, Cabinet Secretariat	Geology/ Meteorology/ Environment from a University recognized by HEC.	English =20 marks <u>Part-II</u> Professional Test=80 marks	<u>Part-II</u> <ul style="list-style-type: none"> • Meteorology • Climatology • Basics of Physics • Environmental Studies • Basic Mathematics • Basic Geology
5.	15/2018	Assistant Director (BS-17) Intelligence Bureau.	<p>A). Second Class or Grade 'C' Master's Degree or equivalent in any subject.</p> <p>B). Second Class or Grade 'C' Master's Degree in Arabic Language.</p> <p>C). Second Class or Grade 'C' Master's Degree in Chinese Language.</p> <p>D). Second Class or Grade 'C' Master's Degree in Dari (Afghan- Persian)/ Persian Language.</p>	<p><u>For Category (A)</u> Objective Type Test (MCQ)</p> <p><u>Part-I</u> English = 20 marks</p> <p><u>Part-II</u> General Ability Test = 80 marks</p> <p><u>For Categories (B, C &D)</u> Subjective Professional Test: 100 Marks</p>	<p><u>For Category (A)</u></p> <p><u>Part-I</u> Vocabulary, Grammar Usage, Sentence Structuring.</p> <p><u>Part-II</u></p> <ul style="list-style-type: none"> • Basic Arithmetic. • Current Affairs. • Pakistan Affairs & Islamic Studies • Everyday/General Science <p>Note : (Equal weightage for each topic at Part-II)</p> <p><u>For Category (B) (Arabic Language)</u></p> <ul style="list-style-type: none"> • Translation of Five paragraphs from Arabic to English 10X5=50 Marks • Translation of Five paragraphs from English to Arabic 10X5=50 Marks <p><u>For Category (C) (Chinese Language)</u></p> <ul style="list-style-type: none"> • Translation of Five paragraphs from Chinese to English 10X5=50 Marks • Translation of Five paragraphs from English to Chinese 10X5=50 Marks <p><u>For Category (D) (Dari/Persian Language)</u></p> <ul style="list-style-type: none"> • Translation of Five paragraphs from Dari (Afghan Persian)/Persian Language to English 10X5=50 Marks • Translation of Five paragraphs from English to Dari (Afghan Persian)/Persian Language 10X5=50 Marks

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
6.	18/2018	Senior Auditor (BS-16) , Pakistan Audit Department, Office of the Auditor General of Pakistan	Second Class or Grade 'C' Bachelor's Degree in Business Administration (Finance/ Accounting)/ Commerce/ Economics/ Statistics/ Mathematics or equivalent from a University recognized by HEC. OR Second Class or Grade 'C' Bachelor's Degree with ICMA one year post graduate Certificate or CA (Foundation) or ACCA (knowledge level qualified)	Objective Type Test (MCQ) <u>Part-I</u> English = 20 marks <u>Part-II</u> Professional Test=80 Marks	<u>Part-I</u> Grammar Usage, Sentence Structuring <u>Part-II</u> <ul style="list-style-type: none"> Accounting Principles & Procedures, Scrutiny of Record for Audit Purposes, Journal, Ledger & Cash Book, Preparation of Annual Budget, Adjustment & Depreciation, Financial Planning & Cost Accounting, Heads of Account, Re-appropriation of Funds and Supplementary Grant, Settlement of Audit Objections Preparation of Pension Documents. Public Procurement Rules, 2004
7.	19/2018	Lecturer (Mathematics) (BS-17) , Pakistan Navy, Ministry of Defence.	Second Class or Grade "C" Master's Degree in Mathematics.	Objective Type Test (MCQ) <u>Part-I</u> English =20 marks <u>Part-II</u> Subject Test = 50 marks <u>Part-III</u> Professional Test=30 marks	<u>Part-I</u> Vocabulary, Grammar Usage, Sentence Structuring <u>Part-II (Masters Level)</u> <ul style="list-style-type: none"> Calculus/Differentiation, Integration, Limits of Continuity Discrete Structures/Discrete Mathematics, Communication Skills for Mathematicians, Computing Tools for Mathematicians, Mathematical Statistics, Mathematical Spaces (Sets, Vector Spaces, Metric Spaces, Topological Spaces, Tensors) Differential Equations. <u>Part-III</u> <ul style="list-style-type: none"> Teaching Techniques and Methodology, Classroom Management and Discipline, Testing and Evaluation, Development of Education in Pakistan.

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
8.	20/2018	Assistant Manager Personnel and Administration Department (BS-16), Pakistan Navy, Ministry of Defence	i. Second Class or Grade 'C' Bachelor's Degree with Business Administration ii. Three (3) years post qualification experience in Establishment matters.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 Marks	Part-I Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> Principles of Management Human Resource Planning, Recruitment & Selection, Civil Servants Act, 1973 and Rules made thereunder Rules of Business, 1973 Basic IT knowledge. Basic Arithmetic, System of Financial Control and Budgeting, 2006 Public Procurement Rules, 2004
9.	22/2018	Lecturer (Female) (BS-17) A. Geography B. Physics Federal Government Colleges for Women, Federal Directorate of Education Islamabad, Capital Administration and Development Division.	Second Class or Grade 'C' Master's Degree or equivalent in the relevant subject.	Objective Type Test (MCQ) Part-I English =20 marks Part-II Subject Test = 50 marks Part-III Professional Test=30 marks	For (A) (Geography) Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II (Masters Level) <ul style="list-style-type: none"> Regional Geography, Geography of Pakistan, Economic Geography, Climatology/Metrology, Oceanography, Environmental Geography, GIS Techniques, Geomorphology Part-III <ul style="list-style-type: none"> Teaching Techniques and Methodology, Classroom Management and Discipline, Testing and Evaluation, Development of Education in Pakistan.

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
					<p><u>For (B) Physics</u></p> <p><u>Part-I</u> Vocabulary, Grammar Usage, Sentence Structuring</p> <p><u>Part-II (Masters Level)</u></p> <ul style="list-style-type: none"> • Mechanics • Heat and Thermodynamics, • Waves and Optics, • Electrostatic, • Electricity and Magnetism, • Modern and Quantum Physics, • Nuclear Physics, • Basic Solid State Physics, <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Development of Education in Pakistan

Schemes and Syllabi for Written Examination (Descriptive) for All Posts in BS-18 & BS-19 included in Consolidated Advertisement No. 01/2018

PAPER-I: ENGLISH

Max Marks: 100

Time Allowed: 3 Hours

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

SUGGESTED READINGS

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

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

Case No.	F.4-03/2018-R
Particulars of post	Radiologist (BS-18), Armed Forces Institute Of Rehabilitation Medicine, Ministry of Defence.
Minimum Qualification & Experience:	i. MBBS with FCPS in Radiology from CPSP. ii. Five (5) years post FCPS experience as Radiologist in a Government Organization.

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

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

Case No.	F.4-06/2018-R
Particulars of post	Pathologist (BS-18), Armed Forces Institute of Rehabilitation Medicine, Ministry of Defence.
Minimum Qualification & Experience:	i. MBBS with FCPS from CPSP. ii. Five (5) years post FCPS experience in Govt. Organization as Pathologist.

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

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

Case No.	F.4-09/2018-R
Particulars of post	Associate Professor/Vice Principal (Mathematics) (Male) (BS-19), Islamabad Model Colleges for Boys, Federal Directorate of Education Islamabad, Capital Administration & Development Division.
Minimum Qualification & Experience:	<p>Ph.D. Degree in the relevant subject with eight (8) years post qualification teaching and administrative experience at College/ University level</p> <p style="text-align: center;">OR</p> <p>M. Phil Degree in the relevant subject with ten (10) years post qualification teaching and administrative experience at College/ University level</p> <p style="text-align: center;">OR</p> <p>Second Class or Grade 'C' Master's Degree in the relevant subject with twelve (12) years post qualification teaching and administrative experience at College/ University level.</p>

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. Fourier series and partial differential equations

- Trigonometric Fourier series; sine and cosine series; Bessel inequality; summation of infinite series; convergence of the Fourier series.
- Partial differential equations of first order; classification of partial differential equations of second order; boundary value problems; solution by the method of separation of variables; problems associated with Laplace equation, wave equation and the heat equation in Cartesian coordinates.

VI. Numerical Methods

- Solution of nonlinear equations by bisection, secant and Newton-Raphson methods; the fixed- point iterative method; order of convergence of a method.
- Solution of a system of linear equations; diagonally dominant systems; the Jacobi and Gauss-Seidel methods.
- Numerical solution of an ordinary differential equation; Euler and modified Euler methods; Runge- Kutta methods.

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

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

V. Research Methods in Education

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

SUGGESTED READINGS

S.No.	Title	Author
1.	An Introduction to Vector Analysis	Khalid Latif,
2.	Introduction to Mechanics	Q.K. Ghorl
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.	Elements of Numerical Analysis	F. Ahmad and M.A Rana
7.	Mathematical Methods	S. M. Yousaf, Abdul Majeed and Muhammad Amin
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.4-10/2018-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. OR M. Phil in Library Sciences with 10 years post qualification experience in the relevant field. OR 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. Kaliammal & 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.4-24/2018-R
Particulars of post	Associate Anaesthetist (BS-18), Federal General Hospital, Chak Shahzad Islamabad, Capital Administration and Development Division.
Minimum Qualification & Experience:	i. MBBS degree recognized by PM&DC. ii. Postgraduate higher diploma in the relevant field recognized by PM&DC with 3 years post graduate experience. OR Postgraduate lower diploma in the relevant field recognized by PM&DC with 5 years post graduate experience.

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