

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. 02/2024

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
1.	17/2024	Lecturer (Female) (BS-17), EX- a) Pakistan Studies b) Physics c) Sociology d) Urdu F.G Colleges, Federal Directorate of Education, Islamabad, Ministry of Federal Education and Professional Training.	Second Class or Grade 'C' Master's degree or equivalent qualification 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 Note: ▪ In Language Subject i.e Urdu , English part for 20 marks will not be included. There will be 70% subject Test and 30% Professional Test.	For (A) Pakistan Studies Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II (Masters Level) • Ideology of Pakistan • Pakistan Movement 1857-1947 • Current Issues of Pakistan (National Security, Economic Challenges, Pakistan's War on Terror) • Geography of Pakistan • Latest Constitutional Amendments, Part-III • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Knowledge of Bloom's Taxonomy For (B) Physics Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II (Masters Level) • Mechanics • Heat and Thermodynamics, • Waves and Optics, • Electrostatic, • Electricity and Magnetism, • Modern and Quantum Physics, • Nuclear Physics, • Basic Solid State Physics, Part-III • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Knowledge of Bloom's Taxonomy

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
					<p>For (C) Sociology</p> <p>Part-I Vocabulary, Grammar Usage, Sentence Structuring</p> <p>Part-II (Masters Level)</p> <ul style="list-style-type: none"> • Meaning, Characteristics and Elements of Culture • Society: Meaning and Characteristics • Social Contract Theory & Organismic Theory • Sociological Theories (Ibn-i-Khaldun, Spencer, Max Weber, Karl Marx) • Methods of Sociological Research, • Social Institutions: Nature, Genesis & Function • Mechanism of Social Control: Formal & Informal • Social and Cultural Change & Social Policy: Processes & Effects • Social Problems in Pakistan <p>Part-III</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology, • Classroom Management and Discipline, • Testing and Evaluation, • Knowledge of Bloom's Taxonomy <p>For (D) Urdu</p> <p>Part-I (Master's Level) (70 Marks)</p> <div data-bbox="1630 901 2152 1305" style="border: 1px solid black; padding: 5px; text-align: center;"> <p>اردو ذخیرہ الفاظ ☆</p> <p>اردو جملے کا ڈھانچہ ☆</p> <p>اردو قواعد کا استعمال ☆</p> <p>غالبیات ☆</p> <p>اقبالیات ☆</p> <p>مدرسہ حالی ☆</p> <p>میر تقی میر کی شاعری ☆</p> <p>ظہر و مزاج - مشتاق احمد یوشی کی نظر میں ☆</p> </div> <p>Part-II (30 Marks)</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology, • Classroom Management and Discipline, • Testing and Evaluation, • Knowledge of Bloom's Taxonomy

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
2.	18/2024	Lecturer (Computer Science) (BS-17), Federal College of Education, Ministry of Federal Education and Professional Training.	Second Class or Grade 'C' Master's degree in the relevant subject with M.Ed.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Subject Test = 50 marks Part-III Professional Test = 30 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II (Masters Level) • Computer Hardware/Software, • Data Communication & Networking, • C/C++ Language, • Visual Basic, • Operating System Unix/Linux • Windows 10/11 • Oracle/PLSQL, • System Analysis & Design. • Web Programming, Part-III • Teaching Techniques and Methodology, • Classroom Management and Discipline, • Testing and Evaluation, • Knowledge of Bloom's Taxonomy
3.	20/2024	Assistant Signal / Telecommunication Engineer (BS-17), Signal & Telecommunication Department of Pakistan Railways, Ministry of Railways.	Bachelor of Engineering Degree in Electrical / Electronics / Telecommunication.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II • Electric current and Ohm's Law • Batteries • Electrostatics • Semiconductors • Transistors • Amplifiers • Diodes and Power Supplies • Telephony • Antenna and Wave Propagation • Microwaves • Radar Systems • Satellite Communication

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
4.	21/2024	Assistant Network Administrator (BS-16), Federal Public Service Commission.	Second Class or Grade 'C' Bachelor's degree in Computer Science or Information Technology or equivalent qualification from a University recognized by the HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Grammar usage, Sentence Structuring. Part-II <ul style="list-style-type: none"> • Types of networks (LAN, WAN, Internet, Intranet etc.) • Network Topologies, • Network Management • Communication Protocols • OSI model • Operating Systems (Windows, Linux) • Transmission Mediums, Direction and Modes • Network Devices (Switch, Routers, and Modem), • Network security issues (Viruses, Firewall and unauthorized access),
5.	22/2024	Lady Welfare Officer (BS-16), Naval Headquarters, Ministry of Defence.	i. Second Class or Grade 'C' Bachelor's degree with Sociology / Social Work / Anthropology. ii. Two (2) years post qualification experience in Social Welfare 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"> • Community Organization and Development, • Social Research & Statistics, • Organizational Behaviour and Human Resources, • Social Welfare Policy and Administration, • Methods of Counselling & Guidance Services • Project Preparation and Financial Planning • Monitoring Methodology, Evaluation, Cost-benefit Analysis and Implementation
6.	23/2024	Trained Graduate Teacher (Female) (BS-16), a) Biology b) Chemistry c) Computer Science d) English e) Islamiyat f) Mathematics g) Pakistan Studies h) Physics i) Urdu Federal Government Educational Institution, (C/G) Directorate, Ministry of Defence.	Second Class or Grade 'C' Bachelor's degree in the relevant subject with B.Ed. from a University recognized by HEC. .	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Subject Test = 40 marks Part-III Professional Test=40 marks Note: In Language Subject other than English i.e Urdu , English part for 20 marks will not be included. There will be 70% subject Test and 30% Professional Test.	For (A) Biology Part-I Grammar Usage, Sentence Structuring Part-II (Bachelor's Level) <ul style="list-style-type: none"> • Theories of Evolution, • Nucleic Acids, • Cell Division, • Mendelian laws of inheritance, • Diagnostic Characteristics of all the phyla or invertebrates and chordates, Part-III <ul style="list-style-type: none"> • Educational Psychology, • Class Room Management and Discipline, • Instructional Planning and Teaching Strategies, • Students Evaluation and Examination System, • Educational Guidance and Counselling. • Knowledge of Bloom's Taxonomy

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
					<p><u>For (B) Chemistry</u></p> <p><u>Part-I</u> Grammar Usage, Sentence Structuring</p> <p><u>Part-II (Bachelor's Level)</u></p> <ul style="list-style-type: none"> • Nature, Properties & States of Matter, • Chemical Kinetics & Radioactivity, • Inorganic Chemistry, • Thermodynamics, • Chemical Equilibrium, • Electrochemistry, <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Educational Psychology, • Class Room Management and Discipline, • Instructional Planning and Teaching Strategies, • Students Evaluation and Examination System, • Educational Guidance and Counselling. • Knowledge of Bloom's Taxonomy <hr/> <p><u>For (C) Computer Science</u></p> <p><u>Part-I</u> Grammar Usage, Sentence Structuring</p> <p><u>Part-II (Bachelor's Level)</u></p> <ul style="list-style-type: none"> • Computer Hardware/Software, • Data Communication & Networking, • C/C++ Language, • Visual Basic, • Operating System Unix/Linux • Windows 10/11 • Oracle/PLSQL, • System Analysis & Design. • Web Programming, <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Educational Psychology, • Class Room Management and Discipline, • Instructional Planning and Teaching Strategies, • Students Evaluation and Examination System, • Educational Guidance and Counselling. • Knowledge of Bloom's Taxonomy

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
					<p><u>For (D) English</u></p> <p><u>Part-I</u> Grammar Usage, Sentence Structuring</p> <p><u>Part-II (Bachelor's Level)</u></p> <ul style="list-style-type: none"> • English Literature 16th to 20th Century. • Linguistics. • English Language Teaching. • Syntax. • Diction. <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Educational Psychology, • Class Room Management and Discipline, • Instructional Planning and Teaching Strategies, • Students Evaluation and Examination System, • Educational Guidance and Counselling. • Knowledge of Bloom's Taxonomy <p><u>For (E) Islamiyat</u></p> <p><u>Part-I</u> Grammar Usage, Sentence Structuring</p> <p><u>Part-II (Bachelor's Level)</u></p> <p style="text-align: center;">☆ قرآن کا مرکزی خیال / اجزا</p> <p style="text-align: center;">☆ حدیث: حدیث کے مستند اور صحیح ہونے کا معیار</p> <p style="text-align: center;">☆ سیرت النبی ﷺ</p> <p style="text-align: center;">☆ فقہ: جامعیت، اختلاف رائے اور عصر حاضر کے تقاضوں کے مطابق مذہب کی تشریح -</p> <p style="text-align: center;">☆ تاریخ اسلام خلفائے راشدین تک -</p> <hr/> <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Educational Psychology, • Class Room Management and Discipline, • Instructional Planning and Teaching Strategies, • Students Evaluation and Examination System, • Educational Guidance and Counselling. • Knowledge of Bloom's Taxonomy

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
					<p><u>For (F) Mathematics</u></p> <p><u>Part-I</u> Grammar Usage, Sentence Structuring</p> <p><u>Part-II (Bachelor's Level)</u></p> <ul style="list-style-type: none"> • 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, <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Educational Psychology, • Class Room Management and Discipline, • Instructional Planning and Teaching Strategies, • Students Evaluation and Examination System, • Educational Guidance and Counselling. • Knowledge of Bloom's Taxonomy <p><u>For (G) Pakistan Studies</u></p> <p><u>Part-I</u> Grammar Usage, Sentence Structuring</p> <p><u>Part-II (Bachelor's Level)</u></p> <ul style="list-style-type: none"> • Ideology of Pakistan • Pakistan Movement 1857-1947 • Current Issues of Pakistan (challenges to National Security, Economic Challenges, Pakistan's War on Terror) • Geography of Pakistan <ul style="list-style-type: none"> ✓ Land and People of Pakistan ✓ Natural Resources of Pakistan, • Latest Constitutional Amendments, <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Educational Psychology, • Class Room Management and Discipline, • Instructional Planning and Teaching Strategies, • Students Evaluation and Examination System, • Educational Guidance and Counselling. • Knowledge of Bloom's Taxonomy

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
					<p>For (H) Physics</p> <p>Part-I Grammar Usage, Sentence Structuring</p> <p>Part-II (Bachelor's Level)</p> <ul style="list-style-type: none"> • Heat and Thermodynamics, • Waves and Optics, • Electricity and Magnetism, • Atomic and Modern Physics, • Basic Solid State Physics, • Mechanics <p>Part-III</p> <ul style="list-style-type: none"> • Educational Psychology, • Class Room Management and Discipline, • Instructional Planning and Teaching Strategies, • Students Evaluation and Examination System, • Educational Guidance and Counselling. • Knowledge of Bloom's Taxonomy
					<p>For (I) Urdu</p> <p>Part-I (Bachelor's Level) (70 Marks)</p> <ul style="list-style-type: none"> • اردو ذبیحہ الفاظ • اردو جملے کا ڈھانچہ • اردو قواعد کا ایسے عمال • لسانیات • اہلیات • طنز و مزاح <p>Part-II (30 Marks)</p> <ul style="list-style-type: none"> • Educational Psychology, • Class Room Management and Discipline, • Instructional Planning and Teaching Strategies, • Students Evaluation and Examination System, • Educational Guidance and Counselling. • Knowledge of Bloom's Taxonomy
7.	24/2024	Drawing Mistress (BS-16) , F.G Schools, Federal Government Educational Institution (C/G), Directorate, Ministry of Defence.	Second Class or Grade 'C' Bachelor's degree with one (1) year diploma in Fine Art / Drawing or equivalent qualification from a University recognized by HEC. OR Bachelor's degree in Fine Arts from a University recognized by HEC.	Objective Type Test (MCQ) Part-I English =20 marks Part-II Professional Test=80 marks	Part-I Grammar Usage, Sentence Structuring Part-II
					<ul style="list-style-type: none"> • Drawing & Design Theory • Linear Perspective • Elements & Principles of Image Making • Painting: Basic elements of Art, concepts, media and formats. • Printmaking: Basic elements of art and design principles, concepts, media, and formats.

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8.	27/2024	Junior Civilian Security Officer (JCSO) (BS-16), O.S. Directorate, GHQ. Ministry of Defence.	Retired JCO or equivalent of the Armed Forces. OR i. Second Class or Grade 'C' Bachelor's degree or equivalent qualification from a University recognized by HEC. ii. Two (2) years post qualification experience as Security Supervisor.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II General Intelligence/ Professional Test = 80 marks	Part-I Grammar usage, Sentence Structuring. Part-II <ul style="list-style-type: none"> • Basic Arithmetic <ul style="list-style-type: none"> – Algebra – Ratios – Percentages – Arithmetic Means • Current Affairs. <ul style="list-style-type: none"> – Developments at National and International Levels in the last 5 years • Modern Law Enforcement • Modern Crime Prevention System • Security Measures to Maintain Law & Order
9.	28/2024	Junior Ordnance Management Officer (JOMO) (BS-16), O.S. Directorate, GHQ. Ministry of Defence.	i. Second Class or Grade 'C' Bachelor's degree or equivalent from a University recognized by HEC. ii. Two (2) years post qualification experience in Store Management.	Objective Type Test (MCQ) Part-I English =20 marks Part-II Mathematics & Accounting=20 marks Part-III General Intelligence/ Professional Test=60 marks	Part-I Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Basic Arithmetic <ul style="list-style-type: none"> – Ratios – Percentages – Arithmetic Means • Basic Accounting Part-III <ul style="list-style-type: none"> • Current Affairs. <ul style="list-style-type: none"> – Issues/Challenges at National and International Level during the last 5 year • Knowledge of I.T • Inventory Tracking & Auditing • Controlling, verifying & Reporting Stock • Inventory & Supply Chain in a Warehouse.

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10.	29/2024	<p>Lecturer (Male) (BS-17),</p> <p>a) Botany b) Business Administration c) Chemistry d) Economics e) English f) Information technology g) Mathematics h) Psychology i) Statistics j) Urdu</p> <p>Federal Government Educational Institutions (FGEI) Directorate, (Cantts / Garrisons), Colleges, Ministry of Defence.</p>	<p>Second Class or Grade 'C' Master's degree or equivalent qualification in the relevant subject.</p>	<p>Objective Type Test (MCQ)</p> <p>Part-I English = 20 marks</p> <p>Part-II Subject Test = 50 marks</p> <p>Part-III Professional Test = 30 marks</p> <p>Note: In Language Subject other than English i.e Urdu, English part for 20 marks will not be included. There will be 70% subject Test and 30% Professional Test.</p>	<p>For (A) Botany</p> <p>Part-I Vocabulary, Grammar Usage, Sentence Structuring.</p> <p>Part-II (Masters Level)</p> <ul style="list-style-type: none"> • Algae, • Fungi, • Bryophytes • Pteridophytes • Gymnosperms, • Angiosperms, • Plant Physiology, • Ecology, • Cytology, • Genetics, <p>Part-III</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology, • Classroom Management and Discipline, • Testing and Evaluation, • Knowledge of Bloom's Taxonomy <hr/> <p>For (B) Business Administration</p> <p>Part-I Vocabulary, Grammar Usage, Sentence Structuring</p> <p>Part-II (Masters Level)</p> <ul style="list-style-type: none"> • Business Finance • Principles of Management • Business Law • Business Research Methods • Financial Management • Marketing Management • Production/Operation Management • Management Information System <p>Part-III</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology, • Classroom Management and Discipline, • Testing and Evaluation, • Knowledge of Bloom's Taxonomy

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
					<p><u>For (C) Chemistry</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"> • Nature, Properties & States of Matter, • Electronic Structure, • Bonding, • Chemical Kinetics & Radioactivity, • Synthetic Chemistry • Polymers, • Reaction Mechanism (electrophilic & nucleophilic substitution and addition reaction) • Inorganic Chemistry, • Thermodynamics, • Electrochemistry, <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Knowledge of Bloom's Taxonomy <hr/> <p><u>For (D) Economics</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"> • Micro Economics: Determination of market demand and supply • Macro Economics: Basic Economic Concepts • International Trade: Theories, Trade Restrictions & Trade Policy, • WTO and Developing Economies, • Monetary Theory & Public Finance, • Industrial Development in Pakistan • Interest Free Banking in Pakistan <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Knowledge of Bloom's Taxonomy

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
					<p><u>For (E) English</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"> • English Literature 16th to 20th Century. • Linguistics. • English Language Teaching. • Syntax. • Diction. <p><u>Part-II</u></p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Knowledge of Bloom's Taxonomy <p><u>For (F) Information Technology</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"> • Data Communication & Networking, • C/C++ Language, • Visual Basic, • Operating System Unix/Linux • Oracle/PLSQL, • System Analysis & Design, • Computer Architecture, • Operating System concepts, • Software Engineering, • Security and Ethical issues • Data Structures, • Management Information System, • Web Programming, <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Knowledge of Bloom's Taxonomy

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					<p><u>For (G) Mathematics</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"> • Calculus/Differentiation, Integration, Limits of continuity • Communication Skills for Mathematicians, • Computing Tools for Mathematicians, • Classical Mechanics, • Mathematical Statistics, • Mathematical Spaces (Sets, Vector Spaces, Metric Spaces, topological spaces Tensors, • Differential Equations. <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Knowledge of Bloom's Taxonomy <hr/> <p><u>For (H) Psychology</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"> • Nature and Scope of Psychology • Developmental Psychology • Social Psychology • Educational Psychology • Counselling Psychology • Abnormal and Clinical Psychology • Organizational/Industrial Psychology • Forensic Psychology • Psychological Testing and Assessment • Research Methodology <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Knowledge of Bloom's Taxonomy

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi																
					<p>For (I) Statistics</p> <p>Part-I Vocabulary, Grammar Usage, Sentence Structuring</p> <p>Part-II (Masters Level)</p> <ul style="list-style-type: none"> • Measures of Central Tendency, • Measures of Dispersion or Variation, • Regression and Correlation, • Index Numbers, • Probability Theory, • Probability Distributions, • Presentation of Data • Time Series Analysis, • Statistical Inference, • Sampling Theory and Techniques, • Analysis of Variance, • Experimental Design <p>Part-III</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Knowledge of Bloom's Taxonomy <p>For (J) Urdu</p> <p>Part-I (Master's Level) (70 Marks)</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 80%;">اردو ڈیڑھ الفاظ</td><td style="width: 20%;">☆</td></tr> <tr><td>اردو جملے کا ڈھانچہ</td><td>☆</td></tr> <tr><td>اردو قواعد کا استعمال</td><td>☆</td></tr> <tr><td>غالبیات</td><td>☆</td></tr> <tr><td>اقبالیات</td><td>☆</td></tr> <tr><td>مسدس جانی</td><td>☆</td></tr> <tr><td>میر تقی میر کی شاعری</td><td>☆</td></tr> <tr><td>طرز و مزاج: مشتاق احمد یوسفی کی نظر میں</td><td>☆</td></tr> </table> </div> <p>Part-II (30 Marks)</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology, • Classroom Management and Discipline, • Testing and Evaluation, • Knowledge of Bloom's Taxonomy 	اردو ڈیڑھ الفاظ	☆	اردو جملے کا ڈھانچہ	☆	اردو قواعد کا استعمال	☆	غالبیات	☆	اقبالیات	☆	مسدس جانی	☆	میر تقی میر کی شاعری	☆	طرز و مزاج: مشتاق احمد یوسفی کی نظر میں	☆
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اردو جملے کا ڈھانچہ	☆																				
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اقبالیات	☆																				
مسدس جانی	☆																				
میر تقی میر کی شاعری	☆																				
طرز و مزاج: مشتاق احمد یوسفی کی نظر میں	☆																				

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11.	30/2024	Sub Divisional Forest Officer (BS-17), Forest, Parks & Wildlife Gilgit Baltistan, Ministry of Kashmir Affairs & Gilgit Baltistan.	Second Class or Grade 'C' Master's or Bachelor's (4 years education) degree in Forestry / Forestry & Wildlife Management or equivalent qualification from a University recognized by the HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Forest Management • Range Management • Watershed Management • The Gilgit Forest Rules 1932 • Forest Types: Pakistan and Gilgit-Baltistan • Forest Biometrics
12.	31/2024	Assistant Communication Security Officer (BS-16), Department of Communications Security, Cabinet Division.	Second Class or Grade 'C' Bachelor's degree with Mathematics / Electronics / Physics / Statistics or BCS or equivalent from a University recognized by the HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Operating System & System Software • Database Management • Probability • Number Theory • Basic Electronics • Boolean Algebra • Cryptographic Techniques
13.	33/2024	Inspector (Legal) (BS-16), Anti-Narcotics Force, Ministry of Narcotics Control.	Second Class or Grade 'C' Bachelor's degree in Law or equivalent qualification recognized by the HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test = 80 marks	Part-I Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Criminal Procedure Code (Investigation Chapter) • Basic knowledge of "Qanun-e-Shahadat Order", 1984 • Basic knowledge of Pakistan Penal Code, • Basic knowledge of Narcotics Substances Act, 1997 • International Conventions and Agreements on Drug Control. • Role of United Nations Organization for Drug Control (UNODC) • Pakistan's Anti Narcotics Control Setup • Money Laundering

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
14.	35/2024	Research Superintendent (BS-16), Pakistan Public Administration Research Centre, Establishment Division.	i. Second Class or Grade 'C' Bachelor's degree or equivalent qualifications in Public Administration / Administrative Science / Political Science / Economics. ii. Five (5) years post qualification Administrative / Research experience	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test = 80 marks	Part-I Vocabulary, Sentence Structuring Part-II • Human Resource Planning and Management • Recruitment and Selection • Civil Servants Act, 1973 and Rules made thereunder • Rules of Business, 1973 as amended • Public Procurement Rules, 2004 • Research Techniques/ Methodology • Report Writing • Basic knowledge of Computer/IT.
15.	36/2024	Research Officer (BS-17), Akhtar Hameed Khan National Centre for Rural Development, Establishment Division.	Second Class or Grade 'C' Master's or Bachelor's (16 years education) degree in Public Administration / Development Studies / Public Policy / Sociology / Environmental Sciences / Agriculture / Agricultural Engineering / Economics / Political Sciences / International Relations / Business Administration / Gender Studies / Rural Development and Social Work or equivalent qualification from a University recognized by HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II General Intelligence Test = 80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II ▪ Basic Arithmetic – Algebra – Ratios – Percentages – Arithmetic Means ▪ Current Affairs. – Issues/Challenges at National and International Level during the last 5 years ▪ Pakistan Affairs & Islamic Studies – Basic Level knowledge • Basic Computer Operation in MS Office Note : (Equal weightage for each topic at Part-II)
16.	37/2024	Perfusionist (BS-17), Pakistan Institute of Medical Sciences, Ministry of National Health Services, Regulations & Coordination.	Second Class or Grade 'C' Master's degree in Biological Sciences i.e. Zoology / Botany / Chemistry or equivalent qualification from a University recognized by HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II • Devices and techniques to reduce exposure to homologous blood transfusion • Application, calibration and use of various safety devices, measurement devices • The ethical, professional and legal implications of the practice of perfusion care • The interplay between and among the various participants within the surgical team • Various techniques utilized in the preservation of the myocardium • Basic Goals and Concepts In Myocardial Protection • The principles associated with ECMO support and its application as related to perfusion care

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
17.	38/2024	Boiler Engineer (BS-17), Pakistan Institute of Medical Sciences, Ministry of National Health Services, Regulations & Coordination.	i. Second Class or Grade 'C' Bachelor's degree in Mechanical/ Electrical Engineering or equivalent qualification from a University recognized by HEC. ii. First Class Certificate of Competency as Boiler Engineer from any recognized Government Institute.	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"> • Fundamental Design of Boiler • Boiler Mountings, Accessories and Auxiliaries • Draught System of Boilers • Boiler Performance, • Steam Engines and Condensers, • Boiler Operation & Maintenance, • Boiler Safety, • Boiler Metallurgy, • Boiler Protection and Interlocks, • Boiler Pollution Control, • Liquid/Solid Fuel Handling
18.	39/2024	Assistant Electro Medical Engineer (BS-17), Pakistan Institute of Medical Sciences, Ministry of National Health Services, Regulations & Coordination.	Bachelor's degree in Biomedical / Electronics / Electrical Engineering from a recognized University.	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"> • Maintenance of Medical Equipments • Rules for operation of Medical Equipments • Problems of Medical Equipments and solution • Clinical trial of new devices/equipments • Technical safety of Medical equipments • Reports and documentation on working of Medical equipments.
19.	40/2024	Statistical Officer (BS-17), Pakistan Institute of Medical Sciences, Ministry of National Health Services, Regulations & Coordination.	Second Class or Grade 'C' Master's degree in Statistics / Mathematics / Economics / Commerce or equivalent qualification from a University recognized by HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Measures of Central Tendency, • Measures of Dispersion or Variation, • Regression and Correlation, • Index Numbers, • Probability Theory, • Probability Distributions, • Estimation • Presentation of Data • Time Series Analysis, • Statistical Inference, • Sampling Theory and Techniques, • Analysis of Variance, • Experimental Design

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
20.	42/2024	Bio-Chemist (BS-17), Pakistan Institute of Medical Sciences, Ministry of National Health Services, Regulations & Coordination.	M.Sc. in Bio-Chemistry or M.Sc. in Organic Chemistry with special paper in Bio-Chemistry with two (2) years post qualification experience in the relevant field.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Introductory Biochemistry • Carbohydrates & Lipids • Amino Acids & Proteins • Human Physiology • Enzymes • Molecular Biology • Metabolism • Industrial Biochemistry • Clinical Biochemistry • Research Planning & Report Writing
21.	43/2024	Lecturer (Female) (BS-17), a) Botany b) Business administration c) Economics d) English e) Health & Physical Education f) Information Technology g) Mathematics h) Psychology i) Sociology Federal Government Educational Institutions (FGEI) Directorate, (Cantts / Garrisons) Colleges, Ministry of Defence.	Second Class or Grade 'C' Master's degree or equivalent qualification 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) Botany Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II (Masters Level) <ul style="list-style-type: none"> • Algae & Fungi, • Bryophytes • Pteridophytes • Gymnosperms, • Angiosperms, • Plant Physiology, • Ecology, • Cytology, • Genetics, Part-III <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Knowledge of Bloom's Taxonomy For (B) Business Administration Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II (Masters Level) <ul style="list-style-type: none"> • Business Finance • Principles of Management • Business Law • Business Research Methods • Financial Management • Marketing Management • Production/Operation Management • Management Information System

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
					<p>Part-III</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Knowledge of Bloom's Taxonomy <p>For (C) Economics</p> <p>Part-I Vocabulary, Grammar Usage, Sentence Structuring</p> <p>Part-II (Masters Level)</p> <ul style="list-style-type: none"> • Micro Economics: Determination of market demand and supply • Macro Economics: Basic Economic Concepts • International Trade: Theories, Trade Restrictions & Trade Policy, • Economic Development: Historical growth development process and Theories, Structural Issues • WTO and Developing Economies, • Monetary Theory & Public Finance, • Agriculture Development in Pakistan • Industrial Development in Pakistan • Energy Crises and Policy in Pakistan • Interest Free Banking in Pakistan <p>Part-III</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Knowledge of Bloom's Taxonomy <p>For (D) English</p> <p>Part-I Vocabulary, Grammar Usage, Sentence Structuring</p> <p>Part-II (Masters Level)</p> <ul style="list-style-type: none"> • English Literature 16th to 20th Century. • Linguistics. • English Language Teaching. • Syntax. • Diction. <p>Part-III</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Knowledge of Bloom's Taxonomy

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
					<p><u>For (E) Health & Physical Education</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"> • Philosophy of Physical Education, • Psychology of Physical Education, • Rules of games • Basics of Human Anatomy • Administrative and Management in Sports, • Sports Nutrition, • Trauma and Rehabilitation, • Research Methodology in Physical Education • Test, Measurement and Evaluation in Physical Education & Sports • Sports Injuries, • Sports with physical disabilities <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Knowledge of Bloom's Taxonomy <hr/> <p><u>For (F) Information Technology</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"> • Data Communication & Networking, • C/C++ Language, • Visual Basic, • Operating System Unix/Linux • Oracle/PLSQL, • System Analysis & Design, • Computer Architecture, • Operating System concepts, • Software Engineering, • Security and Ethical issues • Data Structures, • Management Information System, • Web Programming, <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Knowledge of Bloom's Taxonomy

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
					<p><u>For (G) Mathematics</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"> • 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. <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Knowledge of Bloom's Taxonomy <hr/> <p><u>For (H) Psychology</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"> • Nature and Scope of Psychology • Developmental Psychology • Social Psychology • Educational Psychology • Counselling Psychology • Abnormal and Clinical Psychology • Organizational/Industrial Psychology • Forensic Psychology • Psychological Testing and Assessment • Research Methodology <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Knowledge of Bloom's Taxonomy

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
					<p>For (I) Sociology</p> <p>Part-I Vocabulary, Grammar Usage, Sentence Structuring</p> <p>Part-II (Masters Level)</p> <ul style="list-style-type: none"> • Meaning, Characteristics and Elements of Culture • Society: Meaning and Characteristics • Social Contract Theory & Organismic Theory • Sociological Theories (Ibn-i-Khaldun, Spencer, Max Weber, Karl Marx) • Methods of Sociological Research, • Social Institutions: Nature, Genesis & Function • Mechanism of Social Control: Formal & Informal • Social and Cultural Change & Social Policy: Processes & Effects • Community organization and development • Social Problems in Pakistan <p>Part-III</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology, • Classroom Management and Discipline, • Testing and Evaluation • Knowledge of Bloom's Taxonomy

Schemes and Syllabi for Written Examination (Descriptive) for All Posts in BS-18 & BS-19 (other than Doctors) included in Consolidated Advertisement No. 02/2024

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
2.	Practical English Usage	M. Swan
3.	Practical English Grammar and Composition	S.C. Gupta
4.	Improve your Punctuation & Grammar	Marion Field
5.	The Little, Brown Handbook	H. Ramsey Flower & Jane Aaron
6.	A University English Grammar	R. Quirk & S. Greenbaum
7.	Write Better, Speak Better	Readers Digest Association
8.	Modern English in Action	Henry Christ
9.	Exploring the World of English	Syed Saadat Ali Shah

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

Case No.	F.4-15/2024-R
Particulars of post	Deputy Director (BS-18), Department of Libraries, Ministry of Interior.
Minimum Qualification & Experience:	Second Class or Grade 'C' Master's degree in Library Science or equivalent qualification from a University recognized by HEC.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

**Part-II: 75 Marks (Descriptive)
(Library Science)****I. Establishing Linkages with Academia, Research Organizations**

Ensuring Online/Audio Books, Linkages with academia and research organizations and generation of Funds

II. Information, Library and Society

Nature of information and knowledge. Library and Information Profession, Library and its role in Society. Information society. Communication and information management. Social information. Economic aspects of information. Information policy. Freedom of information. Information privacy. Intellectual property. Information ethics.

III. 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.

IV. Organization of Information

Historical development of the 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.

V. Basic Reference Sources

Definition. Evaluation Criteria. Bibliographies-- General bibliographies, Basic guides to reference materials, Library catalogs; Serials guides; Indexes and abstracts; HEC NDL; Dictionaries and thesauri; Almanacs and fact books; Encyclopedias; Directories; Biographical sources; Geographical sources-- Maps, atlases & gazetteers; Reference Web sites; Internet Public Library (<http://www.ipl.org/div/subject/browse/ref00.00.00>). Evaluation

VI. 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.

VII. Administrative/Management Skills

Elements of Administration (Planning, Organizing, Directing, Controlling), Management Techniques (Decision Making, Providing Training, Troubleshooting), Type of Management Styles, Assessment Methodologies.

VIII. Research Methodology

Definition. Types of research. Research methods. Research problem. Theory formulation. Literature review. Research questions / hypotheses. Sampling. Data collection. Data analysis and Interpretation. Report writing. Dissemination of results. Research proposal. Research ethics. Research in library & information science.

SUGGESTED READINGS

S. No.	Title	Author
1.	Practical research methods for librarians and information professionals.	Beck, S. E., & Manuel, K. (2007).
2.	Reference and information services: An introduction.	Bopp, R. E., & Smith, L. C. (2001).
3.	Future Librarians: dreams, Madness & reality.	Crawford, W and Gorman, Micheal(1995).
4.	Management basics for information professionals.	Evans, G. E., Layzell Ward, P., Rugaas, B., & Evans, G. E. (2007).
5.	Computers for librarians: An introduction to the electronic library.	Ferguson, S., & Hebel, R. (2003).
6.	Libraries in society.	Gerard, D. (1978).
7.	Organising knowledge in a global society: Principles and practice in libraries and information centres.	Harvey, D. R., Hider, P., & Harvey, D. R. (2004).
8.	Introduction to reference work: Vol. 1,	Katz, W. A. (2002).
9.	Paper to digital: Documents in the information age.	Liu, Z. (2008).
10.	The practical library manager.	Massis, B. E. (2003).
11.	Internet technologies and information services.	Miller, J. B. (2008).
12.	The electronic library.	Rowley, J. (2001).
13.	Organizing knowledge: An introduction to managing access to information.	Rowley, J. E., & Farrow, J. (2000).
14.	Library and information centre management.	Stueart, R. D. & Moran, B. B. (2007).
15.	The organization of Information.	Taylor, A. G., & Joudrey, D. N. (2008).
16.	The information age: Current controversies.	Torr, J. D. (2003).

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

Case No.	F.4-16/2024-R
Particulars of post	Assistant Electronics Adviser (BS-18), Ministry of Science & Technology.
Minimum Qualification & Experience:	<p>i. Second Class or Grade 'C' M.Sc. in Physics with specialization in Electrical / Electronic or equivalent qualification from a University recognized by HEC.</p> <p style="text-align: center;">OR</p> <p>Second Class or Grade 'C' B.E / B.Sc. (Engineering) in Electrical/ Electronics / Telecommunications / Instrumentation /Control System/ Power/Aerospace/Avionics/Mechatronics recognized by Pakistan Engineering Council (PEC).</p> <p>ii. Five (5) years post qualification experience in Research & Development / Science & Technology Management</p>

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & Part-III.

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

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

II. Fluid Mechanics

- Surface tension; Viscosity; Elasticity; fluid motion and Bernoulli's theorem.

III. Heat and Thermodynamics

- Perfect gas and Vander Waals equation; Three Laws of Thermodynamics, internal energy, temperature, entropy. Thermal properties of Simple system production and measurement of low temperatures; kinetic theory of gases; Maxwellian distribution of molecular velocities; Brownian motion; Transport phenomena. Classical Maxwell-Boltzmann Statistics and its application; Quantum Bose—Einstein and Fermi—Dirac Statistics.

IV. Electricity and Magnetism

- Electric field due to point charges, Gauss' law Electric potential and Poisson and Laplace's equation Dielectric medium and Polarization; Capacitance; Moving charges and resulting magnetic field; Ampere's law; Vector potential; Magnetic properties of matter; Transient current; Faraday's law of electromagnetic induction; Alternating current and LRO circuit. Maxwell's equations; Poynting theorem and Poynting Vector. Maxwell's equations in integral and differential form.

V. Solid State Physics

- Crystal lattice and structure, Bravais lattice, free electron model, Band theory and electron in a periodic potential, Fermi energy and density of states, n and p type

semiconductors, physics of the transistor and MOSFET, dielectric properties, magnetic properties and origin of magnetism.

VI. Nuclear Physics

- Structure of Nuclei; Radioactivity, α , β and γ decay. Methods of detection, Mass Spectrometer. Accelerators. Phenomenon of fission; reactor and nuclear power, nuclear fusion and its application, Elementary particles and their properties.

Part-III: (Research and Planning) 25 Marks (Descriptive)

i. Communication Skills, Technical Writing and Presentation Skills

Paragraph writing, Essay writing, Translation skills, Academic skills, Academic writing, Technical Report writing, Progress report writing,

ii. Planning and Management

a) Project Management

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

b) Time Management

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

c) Statistical Techniques

All statistical techniques related to Planning & Research

SUGGESTED READINGS

S. No.	Title	Author
1.	Perspectives of Modern Physics.	A. Beiser.
2.	Fundamentals of Physics.	Halliday & Resnick
3.	Introduction to Electromagnetic Fields & Waves	D. Corson & P. Lorrain.
4.	Heat and Thermodynamics.	D. Zemansky
5.	Introduction to Quantum Mechanics	D. Griffiths
6.	Modern Physics	Serway, Moses, Moyer.
7.	Solid State Physics	C. Kittel
8.	Practical English Grammar	A.J. Thomson and A.V. Martinet.
9.	Writing. Intermediate	Marie-Christine Boutin, Suzanne Brinand and Francoise Grellet.
10.	Writing. Upper-Intermediate	Rob Nolasco.
11.	Reading. Advanced	Brian Tomlinson and Rod Ellis.
12.	Study Skills	Riachard Yorkey
13.	Writing. Advanced	Ron White.
14.	College Writing Skills	John Langan.
15.	Patterns of College Writing	Laurie G. Kirsznar and Stephen R. Mandell.
16.	The Mercury Reader. A Custom Publication.	Janice Neulib; Kathleen Shine Cain; Stephen Ruffus and Maurice Scharton.
17.	Project Management Body of Knowledge,	Project Management Institute (PMI) standards committee
18.	Software Project Management	S.A. Kelkar, A Concise Study, Prentice Hall of India.

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

Case No.	F.4-19 (A)/2024-R
Particulars of post	Assistant Professor (Male) (Chemistry) (BS-18), F.G Colleges, Directorate of Federal Government Educational Institutions (Cants / Garrisons), Ministry of Defence.
Minimum Qualification & Experience:	Ph.D. degree in the relevant subject and one (1) year post qualification teaching experience at College / University level. OR M.Phil. degree in the relevant subject with three (3) years post qualification teaching experience at College / University level. OR 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: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (Chemistry)**50 Marks (Descriptive)**

- I. Atomic structure.—Quantum theory, Schrodinger equation, Particle in box, hydrogen atom. Hydrogen molecule ion, hydrogen molecule. Theories of hydrogen and metallic bonding.
- II. Electrochemistry.—Ionic equilibria, theory of strong electrolytes; Debye-Huckel theory of activity coefficients, galvanic cells, membrane 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, enthalpy 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. Chemical Kinetics.—Rate law and its determination Order of reaction. Experimental methods. Temperature Dependence of rate constants. Study of mechanism of a few selected reactions (1st and 2nd under reaction only).
- VII. Surface Chemistry and Catalysis.—Physical adsorption and chemisorption. Surface area determination. Homogeneous and Heterogeneous Catalysis. Acid-base and Enzyme Catalysis.
- VIII. Physical Organic Chemistry.—Elements of Organic reaction mechanism. Optical and Geometric Isomerism. Conformational analysis. Resonance. H—Bond and its effects on the properties of Organic Compounds.
- IX. Aromatic Chemistry.—Structure of Benzene with particular reference to Mechanism of Electrophilic Substitution Reactions.
- X. Chemistry of Natural Products.—Elementary study of Carbohydrates. Oils and Fats. Alkaloids and Vitamins.
- XI. Industrial Organic Chemistry.—Organic Polymers. Fermentation processes including preparation of Anti-Biotics. Petro-Chemical Industry.

Part-III: (Professional) 25 Marks (Descriptive)

- 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. Research Methods in Education**
 - Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
 - Research Proposal and Report Writing
 -

SUGGESTED READINGS

S. No.	Title	Author
1.	Advanced Inorganic Chemistry 3 rd Ed.	Cotton. F.A. and Wilkinson Groffrey
2.	Inorganic Chemistry, 3 rd Ed. 1983	Hukeavy, James E.
3.	Physical Chemistry 5 th Ed.	Moore, Walter J.
4.	Mechanism & Structure in Organic Chemistry	Gould, Edwards
5.	Organic Chemistry 2 nd Ed.	Morrison, Robert Thornton & Boyd R.N.
6.	Research in Education	JW Best
7.	Integrating Education Technology into Teaching	Roblyer
8.	Curriculum Development	S. M. Shahid
9.	Educational Measurement and Evaluation	S. M. Shahid
10.	Educational Administration	S. M. Shahid

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

Case No.	F.4-19 (B)/2024-R
Particulars of post	Assistant Professor (Male) (Computer Science) (BS-18), F.G Colleges, Directorate of Federal Government Educational Institutions (Cants / Garrisons), Ministry of Defence.
Minimum Qualification & Experience:	Ph.D. degree in the relevant subject and one (1) year post qualification teaching experience at College / University level. OR M.Phil. degree in the relevant subject with three (3) years post qualification teaching experience at College / University level. OR 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: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (Computer Science) (Subjective)**50 Marks****I. Computer Architecture**

Microprocessor Bus Structure (Address/Data/Control), Registers and Flags, Storage Hierarchy (Main/Virtual/Cache/Secondary memory), Peripheral communication, CPU, ALU, Principles of Instruction Set Design, Multiprocessors & Thread Level Parallelism.

II. Object Oriented Programming

Data types, control structures, functions, arrays, classes, methods, object and encapsulation; constructors and destructors, operator and function overloading, virtual functions, derived classes, inheritance and polymorphism, I/O and file processing.

III. Data Structure and Algorithms

Stack and Queue, Sequential Search, Binary Search, Bubble sort, Merge sort, Quick sort, Insertion sort, Selection Sort, Linked Lists, Infix to postfix conversions, Expression tree construction, Tree traversals, Graph representation and traversal, Minimum spanning tree.

IV. Database Management Systems

Entity Relationship modeling, Relational data model and algebra, Structured Query language, Database design, functional dependencies and normal forms, concurrency control and recovery techniques, Database security and authorization.

V. Computer Communications and Networks

Asynchronous and Synchronous transmission, LAN/WAN/MAN, Network layers, Transport layer protocols TCP/IP, UDP, Error Control, Flow Control, Multiplexing, Routing, Bridging, Network security issues.

VI. Operating Systems

Process and CPU management, Multithreading, Deadlocks, Memory management and virtual memory, External Fragmentation, Paging and Demand Paging, File management systems, Scheduling and dispatch, Introduction to concurrency.

Part-III (Professional) (Subjective) : 25 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. Research Methods in Education

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

Suggested Reading

S.No.	Title	Author
1.	Modern Operating Systems	Andrew S. Tanenbaum
2.	Operating System Concepts	Addison-Wesley
3.	Algorithms and Data Structures	N. Wirth
4.	Data structures	Aaron M. Tanenbaum,
5.	Database Systems: A Practical Approach to Design, Implementation and Management	R.Connolly and P.Begg
6.	Introduction to Computer Networks	A. S. Tanenbaum
7.	Computer Networks and Internets	Douglas E. Comer
8.	Computer Architecture: A Quantitative Approach	Hennessy & Patterson
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.4-19 (C)/2024-R
Particulars of post	Assistant Professor (Male) (Mathematics) (BS-18), F.G Colleges, Directorate of Federal Government Educational Institutions (Cants / Garrisons), Ministry of Defence.
Minimum Qualification & Experience:	Ph.D. degree in the relevant subject and one (1) year post qualification teaching experience at College / University level. OR M.Phil. degree in the relevant subject with three (3) years post qualification teaching experience at College / University level. OR 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: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (Mathematics) (Subjective)**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-III (Professional) (Subjective) : 25 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. Research Methods in Education

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

SUGGESTED READINGS

S. No.	Title	Author
1.	An Introduction to Vector Analysis	Khalid Latif,
2.	Introduction to Mechanics	Q.K. Ghori
3.	An Intermediate Course in Theoretical Mechanics	Khalid Latif,
4.	Differential Equations with Boundary Value Problems	D. G. Zill and M. R. Cullen
5.	Elementary Differential Equations	E.D. Rainville, P.E. Bedient and R.E. Bedient
6.	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.4-19 (D)/2024-R
Particulars of post	Assistant Professor (Male) (Statistics) (BS-18), F.G Colleges, Directorate of Federal Government Educational Institutions (Cants / Garrisons), Ministry of Defence.
Minimum Qualification & Experience:	Ph.D. degree in the relevant subject and one (1) year post qualification teaching experience at College / University level. OR M.Phil. degree in the relevant subject with three (3) years post qualification teaching experience at College / University level. OR 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: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II (Statistics) 50 Marks (Descriptive)**I. Probability Distributions**

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

II. 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).

III. Sampling & Sampling Distributions

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

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

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

V. Design of Experiments

One-way and Two-way Analysis of Variance, Design of Experiments, Concepts of Treatment, Replication, Blocking, Experimental Units and Experimental Error, Basic Principles of Design of Experiments, Description, Layout and Statistical Analysis of Completely Randomized Design (CRD), Randomized Complete Block Design (RCBD), Multiple Comparison tests (LSD test).

Part-III: (Professional) 25 Marks (Descriptive)

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. Research Methods in Education

- Research Instruments: Questionnaire; Interview; Test; Observation; Rating Scale
- 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.	Fundamentals of Modern Statistical Methods	Wilcox, R.
4.	Statistical Methods	Aggarwal, Y.P.
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.4-25/2024-R
Particulars of post	Senior Architect (BS-18), M.E.S. Ministry of Defence.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Master's or Bachelor's degree in Architecture / Architecture & Planning or equivalent qualification from a University recognized by the HEC / PCATP. ii. Five (5) years post qualification experience in the field of Architecture from a Public or Private Sector Organization.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

Part-II: (Professional) 75 Marks (Descriptive)**I. Basic Design / Architectural Design**

Introduction to architectural design, design parameters and criteria (site, orientation, building form, and scale), design of the built environment involving simple functions and building materials. Distinction between client's brief and architect's brief, development of design concept, site analysis, functional and formal implications of a design brief, design proposals for small to medium-scale buildings to demonstrate understanding of functional relationships, materials, structures, technology, contextual issues, and climatic response inclusive of initial understanding of sustainable architecture. Projects involving multiple functions and complex spatial organizations with comprehension of issues related to project program, site selection, users needs, materials, and technology, identification of structure systems, services and engineering systems. Introduction of survey methodologies, research and documentation techniques. Large-span structures, high-rise buildings with comprehension of structure, services and engineering systems. Thermal comfort and understanding services and construction details. Design of complex buildings giving due respect to urban design and planning issues considering the social, economic, physical & technological factors.

II. Visual Communication

Freehand drawing; lettering; drafting – point, line, shape and form. Solid geometry, sectional solid geometry, orthographic projections; understanding and preparation of plans, elevations, and sections of a building. Introduction to perspectives, rendering techniques in different mediums.

III. History of Art & Architecture

Arts and architecture of the major periods of history and regions of the world: Ancient Mesopotamia, Egypt, Indus Valley, Greece, Rome, Byzantine, Gandhara, Islamic, Gothic, Renaissance, Baroque, Pre-Modern, Modern, Contemporary including Architecture in Pakistan.

IV. Theories /Criticism of Architecture

Graphic analysis of buildings and architectural complexes to develop the ability of the student to theoretically understand architectural issues which are later studied verbally in the form of architectural treatises. The model used throughout is the city which has proved throughout history to be an enduring architectural archetype.

SUGGESTED READINGS

S. No.	Title	Author
1.	A History of Architecture	Banister Fletcher
2.	World-Architecture: A Cross-Cultural History	Spiro Kostoff
3.	Architecture in Pakistan	Kamil Khan Mumtaz
4.	Architectural Drafting and Design	Jefferies
5.	Architects Essentials of Presentation Skills.	Greusel
6.	Space, form and Order.	Francis Ching
7.	Architectural Composition.	Robert Krier
8.	Analysing Architecture.	Simon Unwin
9.	Graphic analysis of building complex	Ching
10.	Image of the city	Kevin Lynch
11.	Ten Books on architecture - Roman	Vitruvius

IV. Theories /Criticism of Architecture

Graphic analysis of buildings and architectural complexes to develop the ability of the student to theoretically understand architectural issues which are later studied verbally in the form of architectural treatises. The model used throughout is the city which has proved throughout history to be an enduring architectural archetype.

SUGGESTED READINGS

S. No.	Title	Author
1.	A History of Architecture	Banister Fletcher
2.	World-Architecture: A Cross-Cultural History	Spiro Kostoff
3.	Architecture in Pakistan	Kamil Khan Mumtaz
4.	Architectural Drafting and Design	Jefferies
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6.	Space, form and Order.	Francis Ching
7.	Architectural Composition.	Robert Krier
8.	Analysing Architecture.	Simon Unwin
9.	Graphic analysis of building complex	Ching
10.	Image of the city	Kevin Lynch
11.	Ten Books on architecture - Roman	Vitruvius

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

Case No.	F.4-32/2024-R
Particulars of post	Law Officer (BS-18), Department of Tourist Services, Ministry of Inter Provincial Coordination.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Bachelor's degree in Law or equivalent qualification from a University recognized by the HEC. ii. Five (5) years post qualification experience of teaching Law or departmental legal work or as lawyer.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

Part-II (Professional) (Subjective) : 75 Marks

- Philosophy of Law
- Constitutional Law
- Law of Contract
- The Code of Civil Procedure, 1908
- Pakistan Panel Code, 1860
- Qanun-e-Shahdat Order, 1984
- Criminal Procedure Code, 1898
- Important principles pertaining to the criminal justice system, propounded in decisions of Superior Courts
- Broad features of the criminal justice system in Pakistan and issues pertaining thereto

SUGGESTED READINGS

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

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

Case No.	F.4-34/2024-R
Particulars of post	Deputy Director (BS-18), Management Services Wing, Establishment Division.
Minimum Qualification & Experience:	<p>i. Second Class or Grade 'C' Master's degree in Public Administration / Business Administration / Administrative Science / Economics / Statistics / Computer Science / ACMA.</p> <p>ii. Five (5) years post qualification experience in Management Analysis / Financial Management / Project Management / Personnel Management / Administrative Research / Collection, Analysis, Interpretation of Statistical Data and Report Writing.</p>

Part-I: 25 Marks (MCQ)

25 MCQ Questions on Part-II & Part-III.

Part-II: 50 Marks (Descriptive)

(Public Administration, Office Management and Planning)

- I. **Public Administration:** Nature and scope, Role of Public Administration in a modern Welfare State;
- II. **Administrative Leadership:** Approaches to the study of Leadership, Forms of Leadership, Leadership qualities;
- III. **Administrative Accountability:** Internal and External Controls; Executive Control, Legislative Control, Judicial Control, Ombudsman, Public Opinion and Pressure Groups; Problems of Administrative Accountability in Pakistan;
- IV. **Communication Skills, Technical Writing and Presentation Skills:** Paragraph writing, Essay writing, Translation skills, Study skills, Academic skills, Academic writing, Technical Report writing, Progress report writing, Presentation skills
- V. **Planning and Management**
 - a) Project Management
Project Management, Processes Integration Management, Project Plan Development, Project Plan Execution and Overall Change Control.
 - b) Scope Management
Initiation, Scope Planning, Scope Definition, Scope Verification and Scope Change Control.
 - c) Time Management
Activity Definition, Activity Sequencing, Activity Duration Estimation, Schedule Development and Schedule Control.
 - d) Statistical Techniques
All statistical techniques related to Planning & Research
- VI. Civil Servant Act 1973 and Rules made thereunder;
- VII. PPRA Ordinance and Rules 2004.

Part-III: 25 Marks (Descriptive)

(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, Principles of Organization, 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; Elements of Financial Administration, 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;

SUGGESTED READINGS

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

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

Case No.	F.4-41/2024-R
Particulars of post	Statistician / Medical Record & Statistical Officer (BS-18) , Pakistan Institute of Medical Sciences, Ministry of National Health Services, Regulations & Coordination.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Master Degree in Statistics / Mathematics/ Economics / Commerce or equivalent qualification from University recognized by HEC. ii. Five (5) years post qualification experience in the relevant field.

Part-I: (MCQ) 25 Marks

- 25 MCQ Questions on Part-II.

Part-II (Statistics) (Subjective) : 75 Marks**I. Probability Distributions**

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

II. Regression & Correlation

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).

III. Sampling & Sampling Distributions

Population and Sample, Advantages of Sampling, Sampling Design, Probability & Non-Probability Sampling techniques. Brief Concepts of Simple Random, Stratified, Systematic, Cluster, Multiple and Multistage Sampling. Purposive, Quota Sampling, Convenience & Accidental Sampling. Sampling with and without replacement, Application of Central Limit Theorem in Sampling, Sampling Distribution of Mean, difference between two Means, Proportion, difference between two Proportion and Variance.

IV. Statistical Inferences

Estimation: Point Estimation, Properties of a good Estimator. Interval Estimation. Interval Estimation of Population mean. Large and small sample confidence intervals for Population Mean. Hypothesis Testing: Types of errors. Hypothesis Testing for Population Mean. Inferences for Two Population Means. Inferences for the Mean of Two Normal Populations using Independent Samples (variances are assumed Equal). Inference for Two Populations Mean using Paired Samples. Inferences for Population Proportions. Confidence Intervals and hypothesis Testing for Population Proportion. Inferences for Two Populations Proportions using Independent Samples, Estimation of sample size. Analysis of categorized data. Goodness of fit tests. Contingency tables. Test of independence in contingency tables.

V. Analysis of Variance & Experimental Design

One-way and Two-way Analysis of Variance, Design of Experiments, Concepts of Treatment, Replication, Blocking, Experimental Units and Experimental Error, Basic Principles of Design of Experiments, Description, Layout and Statistical Analysis of Completely Randomized Design (CRD), Randomized Complete Block Design (RCBD), Multiple Comparison tests (LSD test).

SUGGESTED READINGS

S. No.	Titles	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.	Fundamentals of Modern Statistical Methods	Wilcox, R.
4.	Statistical Methods	Aggarwal, Y.P.