

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. 08/2019

| S. No | Case No. F.4- | Particulars of Post(s) | Qualifications/Experience for the Posts | Test Specification | Topics of Syllabi |
|-------|---------------|--|--|--|---|
| 1. | 118/2019 | Assistant Electrical Engineer (BS-17), Electrical Engineering Department, (Railway Board) Ministry of Railways. | Bachelor of Engineering Degree in Electrical/ Electronics. | Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks | Part-I Vocabulary, Grammar Usage, Sentence Structuring. Part-II <ul style="list-style-type: none"> • Power Generation, • Power Transmission, • AC. DC. Machines, • Power and Digital Electronics, • Electric Circuits, • Semiconductor Devices, • Operational Amplifiers, • Oscillator & Circuit Theory, • Logic Design & Switching Theory, • Rules and Instructions of Repairs of the Multilayer Printed Circuit Boards, • Use of Specialized Diagnostic Test Equipments, • RF Devices. |

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| 2. | 141/2019 | Assistant Director (BS-17), Board of Investment, Prime Minister's Office. | <p>i) Second Class or Grade 'C' Master's Degree or equivalent in one of the following subject:- Economics/ Commerce/ Business Administration/ Public Administration/ Physics/ Chemistry/ International Relations or Chemicals/ Electronics/ Mechanical Engineering.</p> <p>ii) Two (2) years post qualification experience in the field of Industrial production/ Financial and economic analysis of investment proposals/ Marketing, Management Development/ Economic Policy and Planning/ Industrial Policy Investment Promotion in Commercial/ Industrial Government/ Semi Government Organizations/ Private firms of repute.</p> | <p>Objective Type Test (MCQ)</p> <p>Part-I English = 20 marks</p> <p>Part-II Professional Test=80 marks</p> | <p>Part-I Vocabulary, Grammar Usage, Sentence Structuring.</p> <p>Part-II</p> <ul style="list-style-type: none"> • Investment Policy of Pakistan • Investment Opportunities in Pakistan in different Sectors • Financial and Economic Analysis of Investment proposals • Public Private Partnership and Investment opportunities • Investment Climate for foreign Investment, • Economic Policy and Planning • Industrial Policy of the Government • Methods of Investment Promotion • Functions of Board of Investment |
| 3. | 161/2019 | Foreman of Inspection (Mechanical) (BS-16), Pakistan Navy, Ministry of Defence. | <p>i) B.Tech (Mechanical) from a University recognized by the Higher Education Commission.</p> <p>ii) One (1) year post qualification experience in Mechanical matters. OR</p> <p>i) Second Class or Grade 'C' B.Sc (Physics, Chemistry & Mathematics) from a University recognized by the Higher Education Commission. (</p> <p>ii) Three (3) years post qualification experience in Mechanical matters.</p> | <p>Objective Type Test (MCQ)</p> <p>Part-I English = 20 marks</p> <p>Part-II Professional Test=80 marks</p> | <p>Part-I Grammar Usage, Sentence Structuring.</p> <p>Part-II</p> <ul style="list-style-type: none"> • Theory of Machines, • Fluid Mechanics, • Applied Thermodynamics, Heat Engines and Boilers, • Mechanics of Materials, • Material Testing and Heat Treatment, • Workshop Technology & Production Engineering. |

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| 4. | 162/2019 | Civilian Curator (BS-17), Pakistan Navy, Ministry of Defence. | Second Class or Grade 'C' Master's Degree in Archaeology/ Marine Biology. | 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"> • Care and preservation of exhibits of historical and cultural significance. • Documentation of artefact/exhibits, archives, etc. • Research Techniques. • Planning and development of Museum. • Organizing exhibitions • Administration of Museums • Acquaintance in the field of conservation • Marine Microbiology • Marine Resources • Marine Biodiversity • Cell and Evolutionary Biology • Knowledge of MS Office and Internet |
| 5. | 166/2019 | Assistant Controller Of Stores/ Purchase (BS-17), Stores & Purchase Department of Pakistan Railways (Railway Board), Ministry of Railways. | B.Sc. Engineering in Civil/ Electrical/ Electronics/ Telecommunication/ Mechanical. Registration with PEC required. | Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks | Part-I Vocabulary, Grammar Usage, Sentence Structuring. Part-II <ul style="list-style-type: none"> • Basic Arithmetic (Algebra, Ratios, Percentages, Arithmetic Means) • General Science • Basic knowledge of I.T • Procedures of Receipt and Issue of Stores • Stores procedures with relation to following topics:- <ul style="list-style-type: none"> a. Stock Taking b. Care and preservation of Railway Equipments and Stores c. Ware House Management • Public Procurement (PPRA) Rules, 2004 |

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| 6. | 173/2019 | <p>Lecturer (Female) (BS-17) A) Bio-Chemistry B) Biology C) Chemistry D) Commerce E) Computer Science F) Economics G) Education H) English, I) Geography J) History K) Home Economics L) Mathematics M) Pakistan Studies, N) Persian O) Physics P) Psychology Q) Sociology R) Urdu. Islamabad Model Colleges, Federal Directorate of Education, Ministry of Federal Education & Professional Training.</p> | <p>Second Class or Grade 'C' Master's Degree or equivalent in the relevant subject.</p> | <p>Objective Type Test (MCQ) Part-I English = 20 marks Part-II Subject Test = 50 marks Part-III Professional Test = 30 marks Note: ▪ In Language Subjects (i.e Urdu, English and Persian), English part for 20 marks will not be included. There will be 70% subject Test and 30% Professional Test. ▪ In the subject of Education, there will be 20% English Test and 80% Subject Test. ▪ In all other subjects there will be English (20 marks), Subject Test (50 marks) and Professional Test (30 marks)</p> | <p>A. For Bio-Chemistry Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II (Master's Level) • Cell Biology • Plant Biochemistry • Clinical Biochemistry • Nutritional Biochemistry • Biotechnology • Immunology • Methods in Molecular Biology • Environmental Biochemistry Part-III • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation</p> <hr/> <p>B. For Biology Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II (Master's Level) • Theories of Evolution, • Multiple Alleles, • Nucleic Acids, • Cell Division, • Ecosystem, • Mendelian laws of inheritance, • Diagnostic Characteristics of all the phyla or invertebrates and chordates, • Division of Plants Part-III • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation</p> |

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| | | | | | <p>C. For Chemistry</p> <p>Part-I Vocabulary, Grammar Usage, Sentence Structuring</p> <p>Part-II (Master’s Level)</p> <ul style="list-style-type: none"> • Chemical Kinetics, • Chemical Equilibrium, • Quantum Theory of Atom, • Synthetic Chemistry & Polymers, • Reaction Mechanism, • Green Chemistry, • Spectroscopy, • Nano Technology, <p>Part-III</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation <hr/> <p>D. For Commerce</p> <p>Part-I Vocabulary, Grammar Usage, Sentence Structuring</p> <p>Part-II (Masters Level)</p> <ul style="list-style-type: none"> • Auditing • Cost Accounting • Managerial Economics • Computer Application in Business • Islamic Principles of Banking & Finance • Corporate Law • E-Commerce • Specialized financial Institutions • Salient features of Investment Analysis <p>Part-III</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology, • Classroom Management and Discipline, • Testing and Evaluation, |

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| | | | | | <p><u>E. For Computer Science</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"> • Computer Hardware/Software, • Data Communication & Networking, • C/C++ Language, • Operating System Unix/Linux • Windows XP, 2000, • Oracle/PLSQL, • System Analysis & Design. • 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, <hr/> <p><u>F. For 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, • Economic Development: Historical growth development process and Theories, Structural Issues • 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 |

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| | | | | | <p>G. For Education</p> <p>Part-I (20 marks) Vocabulary, Grammar Usage, Sentence Structuring</p> <p>Part-II (80 marks)</p> <ul style="list-style-type: none"> • Definition and Purpose of Education , • Educational Reforms in Pakistan, • Philosophy of Education, • Sociology of Education, • Educational Psychology, • Educational Guidance & Counselling, • Educational Planning & Management, • Educational Administration and Supervision, • Curriculum Development & Instructions, • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Development of Education in Pakistan • Issues related to Education in Pakistan <p>H. For English</p> <p>Part-I (Master's Level) (70 Marks)</p> <ul style="list-style-type: none"> • English Literature 16th to 20th Century. • Vocabulary • Structuring of sentences. • Linguistics. • English Language Teaching. • Grammar. • Syntax. • Diction. <p>Part-II (30 Marks)</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology, • Classroom Management and Discipline, • Testing and Evaluation, |

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| | | | | | <p>I. For Geography</p> <p>Part-I Vocabulary, Grammar Usage, Sentence Structuring</p> <p>Part-II (Masters Level)</p> <ul style="list-style-type: none"> • Physical Geography • Landform development, climate, oceans & seas, factor of climate and environmental change • Geography of Pakistan, • Renewable Resources, Recycling Resources, Sustainable resources • Political Geography (State, National and the Nation-State Geopolitics of uneven development) • Statistical Geography, • Climatology/Metrology, • Environmental Geography, • GIS Techniques, <p>Part-III</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology, • Classroom Management and Discipline, • Testing and Evaluation, <p>J. For History</p> <p>Part-I Vocabulary, Grammar Usage, Sentence Structuring</p> <p>Part-II (Masters Level)</p> <ul style="list-style-type: none"> • The Prophetic Age (570-632) • The Pious Caliphate (632-660) • Political System of Islam under the Prophet (PBUH) and the Pious Caliphate (Nature of Islamic State, Form of Govt, Function of Islamic State, Caliphate Shura or the Consultative body and its role) • Institutional Development of the Muslim Civilisation (Umayyad, Abbasid, Crusades, Ottoman Empire) • Muslim Freedom Movement in India (1857-1947) • Ideology of Pakistan • The Kashmir Issue <p>Part-III</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation |

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| | | | | | <p data-bbox="1462 177 2154 209">K. <u>For Home Economics</u></p> <p data-bbox="1462 233 2154 264"><u>Part-I</u> Vocabulary, Grammar Usage, Sentence Structuring</p> <p data-bbox="1462 336 2154 368"><u>Part-II (Masters Level)</u></p> <ul data-bbox="1462 368 2154 632" style="list-style-type: none"> • Introduction to Home Economics • Fundamentals of Food and Nutrition • Nutrition Health and Prevention • Entrepreneurship for home based industry • House Keeping Management • Methods of Research in Home Economics • Childcare and Development Guidance • Family Problems and Intervention strategies <p data-bbox="1462 663 2154 695"><u>Part-III</u></p> <ul data-bbox="1462 695 2154 791" style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation <hr data-bbox="1462 791 2154 799"/> <p data-bbox="1462 799 2154 831">L. <u>For Mathematics</u></p> <p data-bbox="1462 855 2154 887"><u>Part-I</u> Vocabulary, Grammar Usage, Sentence Structuring</p> <p data-bbox="1462 951 2154 983"><u>Part-II (Master's Level)</u></p> <ul data-bbox="1462 983 2154 1302" 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, • Real Analysis, • Mathematical Spaces (Sets, Vector Spaces, Metric Spaces, Topological Spaces, Tensors) • Differential Equations. <p data-bbox="1462 1334 2154 1366"><u>Part-III</u></p> <ul data-bbox="1462 1366 2154 1461" style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation |

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| | | | | | <p>M. <u>For Pakistan Studies</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"> • Ideology of Pakistan in light of speeches and statements of Allama Iqbal and Quaid-e-Azam • Pakistan Movement 1857-1947 • Key Personalities in Pakistan Movement • Current Issues of Pakistan (challenges to National Security, Economic Challenges, Pakistan's War on Terror, Pakistan's Energy problems and their effects) • The Kashmir Issue • Geography of Pakistan <ul style="list-style-type: none"> ✓ Land and People of Pakistan ✓ Pakistan and Islamic World, ✓ Pakistan role in the region ✓ Pakistan's Relations with UNO and its Agencies ✓ Pakistan and its Neighbouring Countries. (China, India, Iran and Afghanistan, ✓ Language and Cultural Heritage of Pakistan, ✓ Natural Resources of Pakistan, • Economic Development of Pakistan, • Latest Constitutional Amendments, <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation <p>N. <u>For Persian</u></p> <p><u>Part-I (Master's Level) (70 Marks)</u></p> <ul style="list-style-type: none"> • Classical Persian Prose and Poetry • Modern Persian Literature, • History of Persian Language and Literature, • Study of Iranian History and Culture, • Iqbal's Persian Poetry and Thoughts. <p><u>Part-II (30 Marks)</u></p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology, • Classroom Management and Discipline, • Testing and Evaluation, |

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| | | | | | <p>O. <u>For 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 |
| | | | | | <p>P. <u>For 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 • Biological basis of Behaviour • Developmental Psychology • Social Psychology • Educational Psychology • Abnormal and Clinical Psychology • Organizational/Industrial Psychology • Forensic Psychology • Psychological Testing and Assessment <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation |

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| | | | | | <p>Q. For 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, |
| | | | | | <p>R. For Urdu</p> <p>Part-I (Master's Level) (70 Marks)</p> <p>اردو ذخیرہ الفاظ ☆</p> <p>اردو جملے کا ڈھانچہ ☆</p> <p>اردو لہجہ کا استعمال ☆</p> <p>لسانیات ☆</p> <p>انیسویں اور بیسویں صدی کا اردو ادب اور اس کا تنقیدی جائزہ ☆</p> <p>اردو ادب کی نثری اصناف کا تحقیقی جائزہ ☆</p> <p>اردو ادب کی شعری اصناف کا تحقیقی جائزہ ☆</p> <p>غالبیات ☆</p> <p>اقبالیات ☆</p> <p>Part-II (30 Marks)</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology, • Classroom Management and Discipline, • Testing and Evaluation, |

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| 7. | 174/2019 | <p>Lecturer (Male) (BS-17),</p> <p>A) Arabic, B) Biology, C) Chemistry, D) Commerce, E) Computer Science F) English, G) Islamic Studies, H) Mathematics, I) Pakistan Studies, J) Physics K) Urdu.</p> <p>Islamabad Model Colleges, Federal Directorate of Education, Ministry of Federal Education & Professional Training.</p> | <p>Second Class or Grade 'C' Master's Degree or equivalent 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>A. For Arabic Part-I (Master's Level)</p> <ul style="list-style-type: none"> • History of Arabic literature • History of Semitic Languages • Arabic Phonetic • Arabic Poetry at the Dawn of Islam • Arabic Syntax • Arabic Vocabulary, • Arabic Grammar usage, • Arabic Sentence Structure <p>Part-II</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation <p>B. For Biology Part-I Vocabulary, Grammar Usage, Sentence Structuring</p> <p>Part-II (Master's Level)</p> <ul style="list-style-type: none"> • Theories of Evolution, • Multiple Alleles, • Nucleic Acids, • Cell Division, • Ecosystem, • Mendelian laws of inheritance, • Diagnostic Characteristics of all the phyla or invertebrates and chordates, • Division of Plants <p>Part-III</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation <p>C. For Chemistry Part-I Vocabulary, Grammar Usage, Sentence Structuring</p> <p>Part-II (Master's Level)</p> <ul style="list-style-type: none"> • Chemical Kinetics, • Chemical Equilibrium, • Quantum Theory of Atom, • Synthetic Chemistry & Polymers, • Reaction Mechanism, • Green Chemistry, • Spectroscopy, • Nano Technology, |

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| | | | | | <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation <p><u>D. For Commerce</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"> • Auditing • Cost Accounting • Managerial Economics • Computer Application in Business • Islamic Principles of Banking & Finance • E-Commerce • Specialized financial Institutions • Salient features of Investment Analysis <p><u>Part-III</u></p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology, • Classroom Management and Discipline, • Testing and Evaluation, <p><u>E. For Computer Science</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"> • Computer Hardware/Software, • Data Communication & Networking, • C/C++ Language, • Operating System Unix/Linux • Windows XP, 2000, • Oracle/PLSQL, • System Analysis & Design. • 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, |

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| | | | | | <p>F. For English</p> <p>Part-I (Master's Level) (70 Marks)</p> <ul style="list-style-type: none"> English Literature 16th to 20th Century. Vocabulary Structuring of sentences. Linguistics. English Language Teaching. Grammar. Syntax. Diction. <p>Part-II (30 Marks)</p> <ul style="list-style-type: none"> Teaching Techniques and Methodology, Classroom Management and Discipline, Testing and Evaluation, <p>G. For Islamic Studies</p> <p>Part-I Vocabulary, Grammar Usage, Sentence Structuring.</p> <p>Part-II (Masters Level)</p> <p>☆ قرآن کا بنیادی موضوع / متن</p> <p>☆ سیرت النبی ﷺ</p> <p>☆ فقہ: جامعیت، اختلاف رائے اور عصر حاضر کے تناظر میں مذہب کی تشریح۔</p> <p>☆ تعارف اسلام</p> <p>☆ انسانی زندگی میں دین کی اہمیت</p> <p>☆ اسلام کے نمایاں پہلو</p> <p>☆ اسلامی عقائد کے انفرادی اور اجتماعی اثرات</p> <p>☆ انسانی حقوق۔ اسلام کی نظر میں</p> <p>☆ اسلام اور عصر حاضر کے چیلنجز</p> <p>☆ اسلامی نظام حکمرانی کا ڈھانچہ</p> <p>☆ سرکاری ملازمین کی ذمہ داریاں</p> <p>☆ اسلامی ضابطہ حیات</p> <p>Part-III</p> <ul style="list-style-type: none"> Teaching Techniques and Methodology Classroom Management and Discipline Testing and Evaluation |

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| | | | | | <p>H. For Mathematics</p> <p>Part-I Vocabulary, Grammar Usage, Sentence Structuring</p> <p>Part-II (Master's Level)</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, • Real Analysis, • Mathematical Spaces (Sets, Vector Spaces, Metric Spaces, Topological Spaces, Tensors) • Differential Equations. <p>Part-III</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation <p>I. For Pakistan Studies</p> <p>Part-I Vocabulary, Grammar Usage, Sentence Structuring.</p> <p>Part-II (Masters Level)</p> <ul style="list-style-type: none"> • Ideology of Pakistan in light of speeches and statements of Allama Iqbal and Quaid-e-Azam • Pakistan Movement 1857-1947 • Key Personalities in Pakistan Movement • Current Issues of Pakistan (challenges to National Security, Economic Challenges, Pakistan's War on Terror, Pakistan's Energy problems and their effects) • The Kashmir Issue • Geography of Pakistan <ul style="list-style-type: none"> ✓ Land and People of Pakistan ✓ Pakistan and Islamic World, ✓ Pakistan role in the region ✓ Pakistan's Relations with UNO and its Agencies ✓ Pakistan and its Neighbouring Countries. (China, India, Iran and Afghanistan, ✓ Language and Cultural Heritage of Pakistan, ✓ Natural Resources of Pakistan, • Economic Development of Pakistan, • Latest Constitutional Amendments, <p>Part-III</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation |

| S. No | Case No. F.4- | Particulars of Post(s) | Qualifications/Experience for the Posts | Test Specification | Topics of Syllabi | | | | | | | | | | | | | | | | | | |
|---|---------------|------------------------|---|--------------------|--|------------------|---|---------------------|---|-----------------------|---|---------|---|---|---|--|---|--|---|--------|---|----------|---|
| | | | | | <p>J. For Physics</p> <p>Part-I Vocabulary, Grammar Usage, Sentence Structuring</p> <p>Part-II (Masters Level)</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>Part-III</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation <p>K. For Urdu</p> <p>Part-I (Master's Level) (70 Marks)</p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">اردو ذخیرہ الفاظ</td> <td style="text-align: left;">☆</td> </tr> <tr> <td style="text-align: right;">اردو جملے کا ڈھانچہ</td> <td style="text-align: left;">☆</td> </tr> <tr> <td style="text-align: right;">اردو قواعد کا استعمال</td> <td style="text-align: left;">☆</td> </tr> <tr> <td style="text-align: right;">لسانیات</td> <td style="text-align: left;">☆</td> </tr> <tr> <td style="text-align: right;">انیسویں اور بیسویں صدی کا اردو ادب اور اس کا تنقیدی جائزہ</td> <td style="text-align: left;">☆</td> </tr> <tr> <td style="text-align: right;">اردو ادب کی نثری اصناف کا تحقیقی جائزہ</td> <td style="text-align: left;">☆</td> </tr> <tr> <td style="text-align: right;">اردو ادب کی شعری اصناف کا تحقیقی جائزہ</td> <td style="text-align: left;">☆</td> </tr> <tr> <td style="text-align: right;">غالیات</td> <td style="text-align: left;">☆</td> </tr> <tr> <td style="text-align: right;">اقبالیات</td> <td style="text-align: left;">☆</td> </tr> </table> <p>Part-II (30 Marks)</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology, • Classroom Management and Discipline, • Testing and Evaluation, | اردو ذخیرہ الفاظ | ☆ | اردو جملے کا ڈھانچہ | ☆ | اردو قواعد کا استعمال | ☆ | لسانیات | ☆ | انیسویں اور بیسویں صدی کا اردو ادب اور اس کا تنقیدی جائزہ | ☆ | اردو ادب کی نثری اصناف کا تحقیقی جائزہ | ☆ | اردو ادب کی شعری اصناف کا تحقیقی جائزہ | ☆ | غالیات | ☆ | اقبالیات | ☆ |
| اردو ذخیرہ الفاظ | ☆ | | | | | | | | | | | | | | | | | | | | | | |
| اردو جملے کا ڈھانچہ | ☆ | | | | | | | | | | | | | | | | | | | | | | |
| اردو قواعد کا استعمال | ☆ | | | | | | | | | | | | | | | | | | | | | | |
| لسانیات | ☆ | | | | | | | | | | | | | | | | | | | | | | |
| انیسویں اور بیسویں صدی کا اردو ادب اور اس کا تنقیدی جائزہ | ☆ | | | | | | | | | | | | | | | | | | | | | | |
| اردو ادب کی نثری اصناف کا تحقیقی جائزہ | ☆ | | | | | | | | | | | | | | | | | | | | | | |
| اردو ادب کی شعری اصناف کا تحقیقی جائزہ | ☆ | | | | | | | | | | | | | | | | | | | | | | |
| غالیات | ☆ | | | | | | | | | | | | | | | | | | | | | | |
| اقبالیات | ☆ | | | | | | | | | | | | | | | | | | | | | | |

| S. No | Case No. F.4- | Particulars of Post(s) | Qualifications/Experience for the Posts | Test Specification | Topics of Syllabi |
|-------|---------------|---|---|--|---|
| 8. | 179/2019 | Assistant Executive Engineer (Civil) (BS-17), Pak. PWD Ministry of Housing and Works. | Bachelor's Degree in Civil 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"> • Building material & Building Construction, • Surveying & Levelling, • Hydraulic & Hydrology, • Soil Mechanics & Foundation, • Concrete Technology & R.C.C Structure Design, • Irrigation, • Steel Structure & Highway, • Construction Management, • Structural Design Applications, • Sewerage and Sewage Treatment, • Engineering Materials, • Reinforced Concrete, • Ground improvement, • Earth and Rock Structure |
| 9. | 182/2019 | Inspector (Investigation) (BS-16), Federal Investigation Agency, Ministry of Interior. | i) Second Class or Grade 'C' Bachelor's degree from a University recognized by the HEC. ii) Minimum Physical Standard: For Male candidates: Height: 5'-6", Chest: 32"-33 ½"; For Female Candidates: Height 5'-2"(Documentary proof from authorized Medical authorities required). | Objective Type Test (MCQ) Part-I English = 20 marks Part-II General Intelligence 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 2 years • Pakistan Affairs & Islamic Studies <ul style="list-style-type: none"> – Basic Level knowledge • Everyday/General Science Note : (Equal weightage for each topic at Part-II) |

| S. No | Case No. F.4- | Particulars of Post(s) | Qualifications/Experience for the Posts | Test Specification | Topics of Syllabi |
|-------|---------------|---|---|--|---|
| 10. | 183/2019 | Assistant Chief Administrative Officer (BS-17), Ministry of Defence. | Second class or Grade "C" Master's Degree in Business Administration/ Public Administration or equivalent 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"> Accounting Principles & Procedures, Journal, ledger & Cash Book, Annual Budget, Adjustment & Depreciation, Financial Planning & Cost Accounting, Head of Accounts, Re-appropriation of Accounts and Supplementary Grant, Settlement of Audit Objections Preparation of Pension Documents. System of Financial Control and Budgeting, 2006 Public Procurement Rules, 2004 |
| 11. | 186/2019 | Seed Certification Assistant/ Seed Testing Assistant (BS-17), Federal Seed Certification & Registration Department, Ministry of National Food Security & Research. | Second Class or Grade 'C' Master's Degree in Agriculture in one of the subjects of Seed Technology, Plant Breeding, Plant Pathology, Horticulture, Plant Protection, Agriculture Extension, Entomology or M.Sc. (Botany). | 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"> Important terms used in Seed technology Seed health Management Plant quarantine and inspection/testing of Seed Seed production and Certification System Plant Breeding, Pathology & Genetics Elements of climate and their relationship with crop growth Soil fertility and fertilizer requirement of various soils and crops Water requirements of crops and water use efficiency, Plant Protection Nitrogen cycle Application of genetics for the improvement of crops Modern concept of Horticultural industry |
| 12. | 187/2019 | Registrar (BS-17), Accountability Courts, Ministry of Law & Justice. | i) Second Class or Grade 'C' Bachelor's Degree in Law or equivalent qualification from a University recognized by HEC. ii) Two (2) years post qualification experience in legal matters. | 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"> Constitution of Islamic Republic of Pakistan, 1973 National Accountability Ordinance, 1999 Pakistan Penal Code, 1860 Code of Criminal Procedure, 1898 Civil servant Act, 1973 General Clauses Act, 1897 Rules of Business, 1973 as amended. |

| S. No | Case No. F.4- | Particulars of Post(s) | Qualifications/Experience for the Posts | Test Specification | Topics of Syllabi |
|-------|---------------|---|--|--|---|
| 13. | 188/2019 | Sub Divisional Forest Officer (BS-17 Plus 25% Special Pay), Forest, Parks & Wildlife Department, Gilgit Baltistan, Ministry of Kashmir Affairs and Gilgit Baltistan. | i) M.Sc. Degree in Forestry. ii) 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 • Forest Management • Range Management • Watershed Management • The Gilgit Forest Rules 1932 • Forest Types: Pakistan and Gilgit-Baltistan • Forest Biometrics |
| 14. | 190/2019 | Admin Officer (BS-17), Federal Service Tribunal, Ministry of Law & Justice | i) Second Class or Grade 'C' Master's Degree in Business Administration/ Public Administration/ Human Resource / Political Science/ International Relations/ Economics/ English or LLB from a recognized University. ii) Two (2) years post qualification experience in Administration/Establishment. | Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks | Part-I Vocabulary, Grammar Usage, Sentence Structuring. Part-II • Rules of Business, 1973 as amended. • Secretariat Instructions. • Civil Servants Act 1973 and Rules made thereunder • Civil Servants (Appointment, Promotion and Transfer) Rules, 1973 • Government Servants Conduct Rules, 1964 • Civil Servant (Appeal) Rules, 1977 • GP Fund Rules • Staff Car Rules, 1980 |
| 15. | 193/2019 | Lecturer/ Instructor (Islamiat) (BS-17), Military College Jhelum, Ministry of Defence. | Second Class or Grade 'C' Master's degree in the relevant subject from a University recognized by HEC. | 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) ☆ قرآن کا بنیادی موضوع / متن ☆ سیرت النبی ﷺ ☆ فقہ: جامعیت، اختلاف رائے اور عصر حاضر کے تناظر میں مذہب کی تشریح۔ ☆ تعارف اسلام ☆ انسانی زندگی میں دین کی اہمیت ☆ اسلام کے نمایاں پہلو ☆ اسلامی عقائد کے انفرادی اور اجتماعی اثرات ☆ انسانی حقوق۔ اسلام کی نظر میں ☆ اسلام اور عصر حاضر کے چیلنجز ☆ اسلامی نظام حکمرانی کا ڈھانچہ ☆ سرکاری ملازمین کی ذمہ داریاں ☆ اسلامی ضابطہ حیات Part-III • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation |

Schemes and Syllabi for Written Examination (Descriptive) for All Posts in BS-18 & BS-19 included in Consolidated Advertisement No. 08/2019

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.4-139/2019-R |
| Particulars of post | Deputy Director (BS-18), Board of Investment, Prime Minister's Office. |
| Minimum Qualification & Experience: | <p>i) Second Class or Grade 'C' Master's Degree or equivalent in one of the following subject:- Economics/ Commerce/ Business Administration/ Public Administration/ Physics/ Chemistry/ International Relations or Chemicals/ Electronics/ Mechanical Engineering.</p> <p>ii) Five (5) years post qualification experience in BS-17 and above or equivalent in Industrial production/ Financial and economic analysis of Investment proposals/ Marketing, Management Development/ Economic Policy and Planning/ Industrial Policy Investment Promotion in Commercial/ Industrial Government/ Semi Government Organizations/ Private firms of repute.</p> |

Part-I: 50 Marks (Descriptive)
(Job Oriented)

I. Public Policy Formulation and Implementation

- The Policy Making Process: How Policies are Made (Six stages including diagnosis and six stages with cautions to be exercise at each stage)
- Policy Implementation & Role of Bureaucracy (Training, Pervasive Inertia and how to break it, Lack of Decision Making, Culture of postponement and delays, Lack of resources, Political interference, Ability to say "No.")
- Policy Analysis, The Quest for Solutions (Lack of research in policy analysis, Lack of coordination among departments, secrecy, openness)
- Policy Evaluation: Assessing The Impact of Public Policy, Program Evaluation- Success and failure of Govt.

II. Act, Ordinance, Rules etc. Relating to Investment

- Special Economic Zones Act, 2012
- Special Economic Zones Rules, 2013
- Board of Investment Ordinance, 2001
- Foreign Private Investment (Promotion & Protection) Act, 1976
- Economic Indicators (Pakistan Economic Survey 2018-19)

Part-II: 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, 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-III: 25 Marks (MCQ)

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

SUGGESTED READINGS

| S. No. | Titles | 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. | Implementing Public Policy: Governance in Theory and in Practice. | Hill M. and Hupe P. |
| 7. | Governance, Economic Policy and Reform in Pakistan | Abdus Samad |
| 8. | Public Policy: Politics, Analysis, and Alternatives, 4th Ed., CQ Press, 2012 | Kraft, Michael E., Scott R. Furlong |
| 9. | Pakistan Economic Survey 2014-15 | Finance Division |

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

| | |
|-------------------------------------|---|
| Case No. | F.4-168/2019-R |
| Particulars of post | Deputy Commissioner for Indus Waters (BS-18) , Office of the Pakistan Commissioner for Indus Waters, Ministry of Water Resources. |
| Minimum Qualification & Experience: | i) Bachelor's Degree in Civil Engineering/ Agricultural Engineering ii) Registration with PEC required or recognized by HEC. iii) Five (5) years post qualification experience in any or all the fields of Designing/ Construction/ Maintenance and operation of irrigation or River Works in responsible position equivalent to BS-17 and above in Govt./ Semi Govt./ Public or highly reputable private Organization. |

**Part-I : 75 Marks (Descriptive)
Professional**

1. Concrete Technology

Constituent materials of concrete & their properties; Hydration, setting & hardening of cement; Testing of cement & aggregates; Types of concrete & their properties; Batching, mixing, transportation & placing of concrete; Properties of fresh and hardened concrete as well as factors affecting them; Testing of concrete for various properties including physical & strength tests.

2. Ultimate strength method

Analysis and Design of prismatic and non-prismatic sections in flexure, compatibility based analysis of sections and code requirements for flexure; Analysis of one-way and two-way solid slabs with general discussion on other slab systems; Design for flexure.

3. Methods of Irrigation

Classification of irrigation methods, Factors affecting the choice of irrigation method, Surface methods, Sprinkler irrigation methods, Sub-surface irrigation methods.

4. Canal Irrigation System

Alluvial and Non alluvial canals; Alignment of canal; Distribution system for canal irrigation, Basic definitions, Determination of required canal capacity, Canal losses, Evaporation, Seepage, Empirical formula for channel losses, Channel section for minimum seepage loss. Cross drainage works.

5. Design of Irrigation Channel

Design of stable channel, Regime Channels, Kennedy's theory, critical velocity ratio, Kutter's formula, Manning's formula, Lacey's theory, Design procedure for Lacey's theory, Estimation of transported sediment, bed load equations, Meyer-peter's and Einstein's formula, Muneer and Qureshi formula, Design procedure for lined/non-erodable irrigation channel, Maintenance of irrigation channels.

6. Reservoir Planning and Dams in General

Types of reservoirs, Flood control reservoir Multipurpose reservoir; Capacity of reservoirs, Storage zones of reservoirs, Reservoir yield, Estimation of demands and optimal reservoir operation, Flooding routing or flood absorption, Reservoir

sedimentation, Silt control in reservoir, selection of suitable site for reservoir; Economics of combined project, Cost-benefit consideration and general principle of optimizing capital budget.

7. Drainage

Purpose of drainage, Drainage needs, Water table, Water movements in subsoil, permeability, Methods of permeability determination.

8. Design of Drainage Systems

Surface drainage, Design of open ditches, Maintenance of alignment Drainage, Open drains, Methods of construction, Subsurface drainage, Tile drains, Mole drains, Determining depth and spacing of drains. Drainage coefficient, Size of the tile drain, Outlets for drains, Envelop material, Installation and maintenance of Tile Drains.

9. Well Irrigation

Aquifers, Types of aquifers, Storage co-efficient, Well- hydraulics, Well losses, Capacity of well, Interference among wells and tube well types and its construction.

10. Canal Lining

Lining and its types, Financial justification and economics of canal lining, Design of lined irrigation channels, Permissible velocities in lined channels, Construction of various types of lining.

11. Indus Waters Treaty 1960 and its implementation

Part-II: 25 Marks (MCQ)

- 25 MCQ Questions on Part-I.

SUGGESTED READINGS

| S. No. | Title | Author |
|--------|--|--------------------------------|
| 1. | Design of Reinforced Concrete Structures | Hassoun, M.N. |
| 2. | Reinforced Concrete Design | Wang, C.K. & Charles G.S. |
| 3. | Irrigation and Drainage | Sharma, R.K. and T.R.Sharma, |
| 4. | Water Resources Engineering | Linslay, R.K. and Joseph, B.F. |

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

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|-------------------------------------|--|
| Case No. | F.4-175/2019-R |
| Particulars of post | Assistant Headmistress (BS-18), Islamabad Model Colleges, Federal Directorate of Education, Ministry of Federal Education & Professional Training |
| Minimum Qualification & Experience: | i) Second Class or Grade 'C' Master's degree or equivalent qualification with B.Ed./ M.Ed. ii) Five (5) years post qualification teaching and administrative experience in recognized educational institutions. |

Part-I: 50 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, Theory of Organization, Principles of Organization, Organization of the Federal and Provincial Governments, Public Sector Enterprises; Approaches to Human Resource Management. Personnel Administration—Tools of Personnel Management: Selection, Training, Promotion, Compensation, Discipline; Communication, Communication Channels and Principles of Public Relations; Human Behaviour and Organizations Administration.—Elements of Financial Administration, Performance Programmed Budgeting, Capital Budget, Principles of Budgeting, Auditing and Accounting.

II. Basic Concept of Quality Management

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

III. Information Technology and MS Office

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

Part-II: (Professional) 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

Part-III: 25 Marks (MCQ)

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

SUGGESTED READINGS

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

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

| | |
|-------------------------------------|--|
| Case No. | F.4-189/2019-R |
| Particulars of post | Deputy Registrar (BS-18), Federal Service Tribunal, Ministry of Law & Justice. |
| Minimum Qualification & Experience: | i) Law Graduate. ii) Five (5) years post qualification experience in Civil Courts/ Administrative Tribunals in BS-16 and above or equivalent. |

Part-I LAW: 75 Marks (Descriptive)**I. Definitions of Crime****II. All Provisions of:**

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

Part-II: 25 Marks (MCQ)

- 25 MCQ Questions on Part-I.

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 |
| 4. | Qanun-e-Shahdat Order, 1984 | as adapted from Principles and Digest of the Law of Evidence by M. Monir |
| 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.4-192/2019-R |
| Particulars of post | Assistant Professor (Chemistry) (Female) (BS-18), Directorate of Federal Government Educational Institutions (Cantts/ Garrison) Colleges, Ministry of Defence. |
| Minimum Qualification & Experience: | Ph.D. Degree in the relevant subject with 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: (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; ebye-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-II: (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

Part-III: 25 Marks (MCQ)

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

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 |