

**FEDERAL PUBLIC SERVICE COMMISSION
(Curriculum & Research Wing)**

**Scheme and Syllabi for Screening/ Professional Tests Relating to
Posts Advertised Vide Consolidated Advertisement No. 04/2014**

<p>For Each Case No. of Paper : 1 Marks : 100 Time Allowed: 100 Minutes</p>
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S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Topics of Syllabi
1.	99/2014	Deputy Chief Nautical Surveyor (BS-19) Directorate General Ports & Shipping Karachi, Ministry of Ports and Shipping	a) Certificate of Competency OR Certificate of Service as Master of a Foreign Going Ships. b) At least three (3) years in Command of Ships. (Two years for candidates holding Extra Master's Certificate/B.Sc. (Technology in Maritime Studies). c) At least four (4) years experience [three years in case of persons belonging to category (i)]. i Nautical Surveyor (OR equivalent post) in any Mercantile Marine Department of a country. ii Surveyor in a recognized Classification Society. iii Officer in Staff Branch of Naval Head quarters OR in Naval Dockyard.	Objective Type Test (MCQ) Professional Test=100 marks	<ul style="list-style-type: none"> • Nautical Knowledge. • Voyage Planning. • Ship Maneuvering Simulator. • Personal Safety & Social Responsibilities. • Knowledge of Cargo Work including Safe Handling of Derricks. • Cargo Spaces. • Ship Maintenance. • Safe Working Practices. • Pakistan Merchant Shipping Ordinance 2001 • Relevant International Maritime Laws and Convention of IMO e.g. SOLAS, MARPOL, STCW etc.
2.	100/2014	Engineer and Ship Surveyor (BS-18), Directorate General Ports & Shipping Karachi, Ministry of Ports and Shipping	i Certificate of Competency OR Certificate of service as First Class Engineer (Combined OR Motor) . ii At least two (2) years post qualification experience as Chief Engineer of a Ship not less than 373 BHP. (One year for candidates holding Extra First Class Engineer's Certificate).	Objective Type Test (MCQ) Professional Test=100 marks	<ul style="list-style-type: none"> • Ship Construction and Maintenance. • Engine Room Operation. • Internal Combustion Engine, Generators, Air Compressors and Cooling System. • Arc and Gas Welding, Anchoring and Mooring. • Repair & Maintenance of Diesel Engine. • Safe Working Practices • Pakistan Merchant Shipping Ordinance 2001 • Relevant International Maritime Laws and Convention of IMO e.g. SOLAS, MARPOL, STCW etc.

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3.	101/2014	Nautical Surveyor (BS-18), Directorate General Ports & Shipping Karachi, Ministry of Ports and Shipping	i Certificate of Competency OR Certificate of service as Master of a Foreign Going ships. ii At least two (2) years post qualification experience in Command of Ships. (One year for candidates holding Extra-Master's Certificate/B.Sc.(Technology in Maritime Studies).	Objective Type Test (MCQ) Professional Test=100 marks	<ul style="list-style-type: none"> • Nautical Knowledge and Voyage Planning. • Ship Maneuvering Simulator. • Personal Safety & Social Responsibilities. • Knowledge of Cargo Work including Safe Handling of Derricks. • Pakistan Merchant Shipping Ordinance 2001 • Cargo Spaces. • Ship Maintenance. • Safe Working Practices. • Relevant International Maritime Laws and Convention of IMO e.g. SOLAS, MARPOL, STCW etc.
4.	102/2014	Director Ports & Administration (BS-19), Directorate General Ports & Shipping Karachi, Ministry of Ports and Shipping	i Certificate of Competency OR Certificate of service as Master of a Foreign- Going Ships OR Certificate in Port Planning and Management from any recognized institution. ii Twelve (12) years post qualification experience in Maritime field handling/ dealing with Port Development Projects. iii Experience relaxable to ten (10) years in exceptional cases of merit.	Objective Type Test (MCQ) Professional Test=100 marks	<ul style="list-style-type: none"> • Port Planning and Development/Infrastructure Maintenance • Port Inventory Management • Port Trade and Revenue Forecasting • Issues of Port Pricing • Management of Port Equipment/Principles of Port Services • Regulation of Port and Marine Services • Role and Functions of Port Administrations • Role of International Maritime and Port Organizations • Scheduling of Port Resources • Technological Developments in Ports/Trade • Union-Management Relations • Application of Information Technology in Maritime/ Port Management • Relevant International Maritime Laws and Convention of IMO e.g. SOLAS, MARPOL, STCW etc.

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5.	103/2014	Assistant Director (BS-17), Directorate General Immigration & Passports, Ministry of Interior	i Second Class OR Grade 'C' Master's Degree. ii Two (2) years post qualification administrative experience in a Government/Semi-Government/ Autonomous Organization.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring. Part-II <ul style="list-style-type: none"> • General Knowledge, • Islamiat, • Pakistan Affairs, • Current Affairs, • Everyday Science, • Basic Arithmetic. • Immigration, Prevention & Control Human Trafficking Ordinance 2002, • Passport Act, 1974, • Civil Servants Act, 1973 and Rules framed thereunder • Public Procurement Rules, 2004
6.	104/2014	Director (BS-19), Management Services Wing, Establishment Division	i Second Class OR Grade 'C' Master's degree in Public Administration/ Business Administration/ Administrative Science/ Economics/ Statistics/ Computer Science/ ACMA. ii Twelve (12) years post qualification experience in Management Analysis/ Financial Management/ Project Management/ Personnel Management/ Administrative Research/ Collection, Analysis, Interpretation of Statistical Data and Report Writing.	Objective Type Test (MCQ) Professional Test=100 marks	<ul style="list-style-type: none"> • Basic Concepts of Public Administration • Organizational Management • Human Resource Management • Financial Management • Project Planning, Execution and Management • Research Methodology • Report Writing and Presentation • Statistical Methods including Collection and Analysis of Data • Civil Servants Act, 1973 and Rules framed thereunder • Secretariat Instructions and Office Procedure • Rules of Business, (Revised Edition-2007) • General Financial Rules (GFR) • System of Financial Control and Budgeting, 2006
7.	105/2014	2 nd Engineer (BS-18), (Electronics/Electrical), (System Engineer Calibration), Pakistan Navy, Ministry of Defence.	i. Bachelor of Engineering in Electrical/ Electronics/Computer or equivalent from the recognized University. ii. Five years post qualification experience in Govt./ Semi-Govt. or a firm of repute in repairs/ calibration of Test Measuring Diagnostic Equipment (TMDEs)	Objective Type Test (MCQ) Professional Test=100 marks	<ul style="list-style-type: none"> • Power /Digital Electronics, • Electronic Devices And Structure, • Repair/Calibration of Test Measuring Diagnostic Equipments, • Electric Circuits and Semiconductor Devices, • Communication/Radar Systems, • Operational Amplifiers, • Electronic/ Electrical Instrumentation, • Oscillators and Circuit Theory • Logic Design & Switching Theory, • Rules and instructions of repairs of the multilayer printed circuit boards • Handling of programmable ICs.

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8.	106/2014	Associate Professor (Education) (BS-19), Federal College of Education Islamabad, Capital Administration & Development Division	i. Second Class OR Grade 'C' Master's Degree in the relevant subject. ii. Twelve (12) years post qualification teaching/ administrative experience at College/ University level	Objective Type Test (MCQ) Professional Test=100 marks	<ul style="list-style-type: none"> • Aims of Education in Pakistan, • Educational Reforms in Pakistan, • National Education Policy 2009 • Philosophy of Education, • Sociology of Education, • Educational Guidance & Counseling, • Educational Planning & Management, • Educational Administration and Supervision, • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Curriculum Development & Instructional Technology • Education Psychology and Student's Learning • Research Techniques & Report Writing • Development of Education in Pakistan
9.	107/2014	Assistant Professor (BS-18) A. Education B. Mathematics C. Chemistry Federal College of Education Islamabad, Capital Administration & Development Division	i. Second Class OR Grade 'C' Master's Degree in the relevant subject. ii. Five (5) years post qualification teaching/ administrative experience at College/ University level.	Objective Type Test (MCQ) Part-I Subject Test = 70 marks Part-II Professional Test=30 marks Note: <ul style="list-style-type: none"> ▪ In the subject of Education, there will be 100% Professional Test. 	For (A) Education <ul style="list-style-type: none"> • Aims of Education in Pakistan, • Educational Reforms in Pakistan, • Philosophy of Education, • Sociology of Education, • Educational Psychology, • Educational Guidance & Counseling, • Educational Planning & Management, • Curriculum Development & Instructions, • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Development of Education in Pakistan

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					<p>For (B) Mathematics <u>Part-I (Masters Level)</u></p> <ul style="list-style-type: none"> • Calculus • Number Theory • Group Theory • Computing Tools for Mathematicians • Vector and Tensor Analysis • Classical Mechanics • Complex/Numerical Analysis • Mathematical Statistics • Differential Equations <p><u>Part-II</u></p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology, • Educational Planning and Management, • Testing and Evaluation, • Development of Education in Pakistan. <hr/> <p>For (C) Chemistry <u>Part-I (Masters Level)</u></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, • Colloidal State. <p><u>Part-II</u></p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology, • Educational Planning and Management, • Testing and Evaluation, • Development of Education in Pakistan.

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10.	108/2014	Lecturer (BS-17), A. Mathematics B. Business Administration (Marketing/HRM) Pakistan Navy, Ministry of Defence	Second Class OR Grade 'C' Master's Degree 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) Mathematics Part-I Vocabulary, Grammar usage, Sentence Structuring Part-II (Masters Level) <ul style="list-style-type: none"> • Calculus/Differentiation, Integration, Limits of continuity • Discrete Structures/Discrete Mathematics, • Communication Skills for Mathematicians, • Computing Tools for Mathematicians, • Classical Mechanics, • Mathematical Statistics, • Real Analysis, • Mathematical Spaces (Sets, Vector Spaces, Metric Spaces, topological spaces Tensors, • Differential Equations. Part-III <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Development of Education in Pakistan For (B) Business Administration (Marketing/ HRM) Part-I Vocabulary, Grammar usage, Sentence Structuring Part-II (Masters Level) <ul style="list-style-type: none"> • Principles of Management • Organizational Behaviour • Production/Operations Management • Entrepreneurship • Human Resource Management • Global/International Business Management • Principles of Marketing • Marketing Management • Consumer Behaviour • Use of Information Technology in Business Part-III <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Development of Education in Pakistan

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11.	109/2014	Trained Graduate Teachers (Male) (Mathematics) (BS-16), F.G. English Medium (Public Schools), Directorate of F.G. Educational Institutions (Cantts/ Garrisons), Ministry of Defence	i. Second Class OR Grade 'C' Bachelor's Degree in the relevant subject. ii. B.Ed.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Subject Biased = 40 marks Part-III Job Oriented = 40 marks	Part-I Vocabulary, Grammar usage. Part-II (Bachelor's Level) <ul style="list-style-type: none"> • Algebra • Mechanics • Ordinary Differential Equations • Matrices, Determinants and Linear Equations Part-III <ul style="list-style-type: none"> • Education System in Pakistan, • Educational Psychology, • Class Room Management and Discipline, • Instructional Planning and Teaching Strategies, • Students Evaluation and Examination System, • Educational Guidance and Counselling.
12.	110/2014	Assistant Director (Geology) (BS-17) Geological Survey of Pakistan, Ministry of Petroleum and Natural Resources	Second Class OR Grade 'C' M.Sc. degree in Geology 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"> • Introduction to Physical Geology • Stratigraphy • Structural Geology • Plate Tectonics • Palaeontology (Invertebrate & Vertebrate) • Geochemistry • Geological Mapping • Petroleum Geology • Engineering and Environmental Geology • Mineral and Energy Resources

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13.	111/2014	Superintending Engineer (Floods) (BS-19) Office of the Chief Engineering Adviser/ Chairman Federal Flood Commission, Ministry of Water and Power	i. Bachelor's Degree in Civil Engineering OR an equivalent qualification from a recognized University/ Institution. ii. Twelve (12) years post qualification experience in Planning, Design or construction or operation of Dams, Irrigation or Hydraulic Works in BS-17 and above OR equivalent in a Government / Semi-Government / reputable private organization	Objective Type Test (MCQ) Professional Test=100 marks	<ul style="list-style-type: none"> • Catchment Hydrology & Hydrometry • Design of water retaining structures (embankments, dams, barrages, spurs, dykes); • Engineering Mechanics, River Engineering & River Morphology • Pakistan's Irrigation System including Integrated Flood Management • Flood Forecasting & Warning Systems and their mechanism • Planning, Implementation, Monitoring and Post Implementation Evaluation of Flood Protection Works; • Pakistan's River System with Flood Classification, types including trans-boundary river/flood management • Financial Management of Projects • Structural and non-structural interventions for better flood management in Pakistan • Integrated water resource development & management in Pakistan. • Flood management facilities in Pakistan • Water storage capacity of Pakistan (existing, on-going and planned small, medium & large dams) • Impact of Global Warming/Climate Change on water and flood management • Historical flood events experienced in Pakistan • Future challenges and Organizations involved in flood management (National & Regional) • Human Resource Management

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14.	112/2014	Assistant Executive Engineer (BS-17), Local Government and Rural Development Department Gilgit Baltistan, Ministry of Kashmir Affairs and Gilgit Baltistan	<p>i. Bachelor's Degree in Civil/ Electrical/ Mechanical/ Agricultural/ Industrial Engineering OR equivalent qualification.</p> <p>ii. Candidates will have to qualify the written test before interview.</p>	<p>Objective Type Test (MCQ)</p> <p>Part-I English = 20 marks</p> <p>Part-II Professional Test=80 marks</p> <p>Note-I: Separate Test to the candidates in each Engineering Discipline will be administered.</p>	<p>Part-I Vocabulary, Grammar Usage, Sentence Structuring.</p> <p>Part-II For Civil Engineers</p> <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, • Dam Designing and Construction, • Sewerage and Sewage Treatment, • Engineering Materials, • Reinforced Concrete, • Ground Improvement, • Earth and Rock Structure • Public Procurement Rules, 2004. <p>For Electrical Engineers</p> <ul style="list-style-type: none"> • Power Generation, • Power Distribution, • Power Transmission, • Power System Control, • High Voltage Engineering • Power & Digital Electronics, • Electronic Devices and Structure, • Electric Circuits, • Semiconductor Devices, • Electronic/ Electrical Instrumentation, • Oscillators & Circuit Theory, • Rules and Instructions of Repairs of the Multilayer Printed Circuit Boards, • Principles of Planning, • Research and Analysis, • Public Procurement Rules, 2004.

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					<p><u>For Mechanical Engineers</u></p> <ul style="list-style-type: none"> • Heat Transfer • Thermodynamics • Industrial Materials • Machine Design and Drawing • Mechanics of Machines • Production Management & Quality Control • Workshop Technology • Hydraulic Machines • Principles of Planning, • Research and Analysis, • Public Procurement Rules, 2004. <p><u>For Agricultural Engineers</u></p> <ul style="list-style-type: none"> • Agricultural Processing Engineering • Drainage Engineering • GIS and Remote Sensing • Soil and Water Conservation Engineering • Farm Machinery and Earth Moving Equipment • Farm Power, Farm Structure & Materials • Mechanics of Materials • Irrigation Engineering • Instrumentation & Measurement • Public Procurement Rules, 2004. <p><u>For Industrial Engineers</u></p> <ul style="list-style-type: none"> • Basic Industrial Engineering • Engineering Drawing • Operations Research • Metrology & Statistical Quality Control • Workshop Practice • Industrial Facilities Design • Operations of Manufacturing Systems • Material Engineering and Manufacturing Processes • Production Planning & Control • Industrial Maintenance & Safety • Public Procurement Rules, 2004.

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15.	113/2014	Assistant Architect (BS-17), PAK. PWD, Ministry of Housing and Works	<p>Bachelor's Degree in Architecture OR equivalent</p> <p style="text-align: center;">OR</p> <p>Associate of the Royal Institute of British Architects</p> <p style="text-align: center;">OR</p> <p>Member of a recognized Institute of Architects</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"> • History of Architecture • Theory of Architecture • Architectural Design • Materials & Construction • Structure for Architects • Urban Design and Planning • Landscape Architecture • Computer Applications in Architecture
16.	114/2014	Assistant Librarian (BS-16), PAK. PWD, Ministry of Housing and Works	<p>Second Class OR Grade 'C' Bachelor's Degree in Library science from a University recognized by the HEC OR Second Class OR Grade 'C' Bachelor's Degree from recognized Institution by the HEC with one (1) year postgraduate diploma in Library Science.</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</p> <p>Part-II</p> <ul style="list-style-type: none"> • Introduction to Library & Information Science • Information Sources and Services • Classification: Theory and Practice • Cataloguing: Theory and Practice • Procurement, Maintenance and Issuance of Library Books • Management of Libraries & Information Centres • Library Automation/Information Storage & Retrieval • Research Methods & Techniques for Librarians • Public Records, Rare Material & their Conservation • Management of Serials Publications • Rules & Procedure regarding Write Off the Library Losses