

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. 12/2015

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Main Topics
1.	139/2015	Junior Research Officer (BS-16), National Assembly Secretariat	2 nd Class or Grade 'C' Master's degree in any Social Science discipline from HEC recognized university.	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"> • Need and Importance of Research • Qualitative and Quantitative Research Method • Operational Research • Empirical and Analytical Analysis Techniques • Collection and Compilation of Data for Research • Current Affairs • Pakistan Affairs
2.	162/2015	Research Officer (Urdu), (BS-17), Finance Division	i Second Class OR Grade 'C' Master's Degree in Urdu or equivalent qualifications from a University recognized by the HEC ii Two (2) years post qualification experience in translation from English to Urdu and vice versa	Subjective Professional Test = 100 marks	<ul style="list-style-type: none"> • Translation of Five paragraphs on Financial matters from English to Urdu 10X5=50 Marks • Translation of Five paragraphs on Financial matters from Urdu to English 10X5=50 Marks
3.	166/2015	Assistant Executive Engineer (Civil) (BS-17), PAK. PWD, Ministry of Housing & Works.	Bachelor's Degree in Engineering in Civil 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, • Construction Management, • Structural Design Applications, • Engineering Materials, • Reinforced Concrete, • Ground Improvement, • Earth and Rock Structure.

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Main Topics
4.	167/2015	Official Reporter (English), (BS-17), National Assembly Secretariat	i) 2 nd Class or Grade 'C' Bachelor Degree ii) English Shorthand Speed 120 W.P.M iii) English Typing Speed 50 W.P.M iv) Proficiency in relevant Computer Software	<ul style="list-style-type: none"> • Typing Test with minimum Speed of 50 W.P.M • Shorthand Test with minimum Speed of 120 W.P.M 	50 Marks 50 Marks
5.	169/2015	Charge/ Staff Nurse (Female) (Civilian) (BS-16), Military Hospitals, Ministry of Defence	i Bachelor's Degree in Nursing or equivalent qualification recognized by the Pakistan Nursing Council. ii Registration with Pakistan Nursing Council. OR i Three (3) years Diploma in Nursing. ii One(1) year Course/ Certificate in Midwifery. iii Registration with Pakistan Nursing Council.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Basic Medical Sciences • General Nursing • Ward Administration • Hospitality of the Patients • Care vs. Cure for Health Management • Developing Training & Instructional Materials for Nursing Courses.
6.	171/2015	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 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"> • Principles of Management • Organizational Behaviour • Production/Operations Management • Human Resource Management • Civil Servants Act, 1973 and Rules made thereunder • Rules of Business, 1973 • New System of Financial Control and Budgeting • Public Procurement Rules, 2004 • Basic Arithmetic, • Basic knowledge of Computer/IT.

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Main Topics
7.	172/2015	Librarian (BS-17), Pakistan Meteorological Department, Aviation Division, Cabinet Secretariat	Second Class or Grade "C" Master's Degree in Library Science/ Information Science from a University recognized by HEC OR i Second Class or Grade "C" Bachelor's Degree in Library Science/ Information Science from a University recognized by HEC ii 05 years post qualification experience in the relevant field OR i Second Class or Grade "C" Bachelor's Degree with one year diploma in Library Science ii 05 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"> • Introduction to Library & Information Science • Information Sources and Services • Classification: Theory and Practice • Cataloguing: Theory and Practice • Procurement/ Maintenance & Issuance of 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 of Write off the Library Losses • Public Procurement Rules, 2004
8.	173/2015	Programmer (BS-17), Pakistan Meteorological Department, Aviation Division, Cabinet Secretariat	Second Class or Grade "C" Master's Degree in Computer Science/ Information Technology or equivalent qualification from a University recognized by HEC OR Second Class or Grade "C" Bachelor's Degree in Computer Science/ BIT (04 years duration) 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"> • Programming in PHP, Ajax and Java Script • Designing, Analyzing & Maintenance of Software • Coding, Debugging, Testing and Documenting of Application Programme • Installation and Testing Software Package • Software Development Process, • Software Architecture, • Software Maintenance & Optimization

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Main Topics
9.	178/2015	Scientific Officer (BS-17), National Veterinary Laboratory, Ministry of National Food Security and Research	Second Class or Grade C Master's Degree in Pharmacology/ Parasitology/ Bacteriology/ Microbiology/ Biochemistry/ Epidemiology. OR Second Class or Grade C Bachelor's Degree in Animal Husbandry/ Veterinary Sciences/ DVM. OR B. Pharmacy.	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"> • Animal Breeding Plans & Policies • Animal Feed Resources • Histology & Embryology • Pharmacology & Toxicology • Livestock Economics & Business Management • Nutrition Requirements of Livestock • Physiology of Reproduction • Principles of Animals Nutrition • Systematic Pharmacology & Therapeutics • Systematic Virology, Histology & Pathology • Veterinary Entomology, Epidemiology & Public Health
10.	179/2015	Deputy Assistant Solicitor (BS-17), Ministry of Law, Justice & Human Rights	i. Bachelor Degree in Law or equivalent. ii. 02 years post qualification experience of work in Judicial or Legal appointment or practice as Advocate in a court of law after enrolment as practicing lawyer excluding attachment period.	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"> • Code of Civil Procedure, • Code of Criminal Procedure, • Pakistan Penal Code, • Limitation Act, • Specific Relief Act.
11.	180/2015	Assistant Private Secretary (BS-16), Ministry of National Health Services, Regulations and Coordination.	i. Second Class or Grade 'C' Bachelor's degree from a University recognized by HEC ii. Minimum shorthand speed 100 W.P.M. and typing speed 50 W.P.M. iii. Must be computer literate.	<ul style="list-style-type: none"> • Typing Test with minimum Speed of 50 W.P.M • Shorthand Test with minimum Speed of 100 W.P.M 	50 Marks 50 Marks

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Main Topics
12.	181/2015	Sub Engineer (Civil) (BS-16), Office of the Chief Engineering Adviser/ Chairman, Federal Flood Commission, Ministry of Water and Power.	<p>i. Three (3) years Diploma of Associate Engineer in Civil from a Government Polytechnic or any recognized Institution.</p> <p>ii. Five (5) years post qualification experience in Irrigation or Flood Works.</p>	<p>Objective Type Test (MCQ)</p> <p>Part-I</p> <p>English = 20 marks</p> <p>Part-II</p> <p>Professional Test=80 marks</p>	<p>Part-I</p> <p>Grammar Usage, Sentence Structuring</p> <p>Part-II</p> <ul style="list-style-type: none"> • Estimation; • Quantity Surveying; • Composite Schedule of Rates; • Surveying and Leveling; • Plain Tabling; • Theodolite Survey; • Soil Mechanics; • Implementation & Monitoring of Flood Protection Works • Design of Embankments, Spurs, Simple Hydraulic Structures; • Hydrological Cycle; • Initial spade work for preparation of PC-I, PC-II, PC-III and PC-IV.
13.	182/2015	Subject Specialist (Female) (Pak. Studies) (BS-17), Directorate of Federal Government Educational Institutions, (Cantts/ Garrisons), F.G. Girls Higher Secondary School, Cod Kala Jhelum, Ministry of Defence.	Second Class or Grade 'C' Master's Degree in Pakistan Studies.	<p>Objective Type Test (MCQ)</p> <p>Part-I</p> <p>English =20 marks</p> <p>Part-II</p> <p>Subject Test = 50 marks</p> <p>Part-III</p> <p>Professional Test=30 marks</p>	<p>Part-I</p> <p>Vocabulary, Grammar Usage, Sentence Structuring</p> <p>Part-II (Masters Level)</p> <ul style="list-style-type: none"> • Ideology of Pakistan, • Current Issues of Pakistan, • Geography of Pakistan, • Constitutional History of Pakistan, • Language and Cultural Heritage of Pakistan, • Natural Resources of Pakistan, • Economic Development of Pakistan, • Pakistan and Islamic World, • Pakistan's Relations with UNO and its Agencies, • Current Affairs with Neighbouring Countries. <p>Part-III</p> <ul style="list-style-type: none"> • Teaching Techniques and Methodology • Classroom Management and Discipline • Testing and Evaluation • Development of Education in Pakistan

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Main Topics
14.	186/2015	Assistant Executive Engineer (Mechanical) (BS-17), MES, Ministry of Defence.	Bachelor's Degree in Mechanical 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"> • Industrial Materials • Machine Design and Drawing • Mechanics of Machines • Production Management & Quality Control • Workshop Technology • Hydraulic Machines • Mechanics and Strength of Materials • Manufacturing processes like Casting, Forging, Machining, Rolling, Extrusion, Welding and Drilling
15.	187/2015	Assistant Meteorologist, (BS-16), Pakistan Meteorological Department, Aviation Division, Cabinet Secretariat	Second Class or Grade 'C' B.Sc. Degree in Physics/ Mathematics/ Space Science/ Geology/ Meteorology/ Environment 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"> • Meteorology • Climatology • Basics of Physics • Environmental Studies • Basic Mathematics • Basic Geology
16.	188/2015	Staff Officer-III (Stat) (BS-17), GHQ, Ministry of Defence.	i) Second Class or Grade 'C' or higher Master's degree in Statistics/ Economics or Mathematics with Statistics as a paper in Master's Degree ii) Two (2) years post qualification experience of Statistical/ Research work.	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 Statistics and its application • Presentation and classification of data. • Measures of Central Tendency • Measures of Dispersion • Correlation and Regression • Index Numbers • Sampling • Time Series Analysis • Binomial Distribution • Testing of Hypothesis • Presentation Skills • Report Writing

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications for Posts	Test Specification	Main Topics
17.	189/2015	Microfilming Officer (BS-17), National Documentation Wing, Cabinet Division.	i) Second Class or Grade 'C' Master's degree in Physics with Electronics/Chemistry. ii) Two (2) years post qualification experience in Microfilming and Reprography.	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"> • Functioning of Microfilming Unit, • Conservation of Microfilms • Remedial Actions towards the Overall Efficiency of the Microfilming Unit. • Purchase of the Microfilming Unit Machinery. • Reprography • Development of Soft Copy of Material in Microforms and its Management • Role/Efficacy of Various Software used to Improve the Retrieval of the Record on Microfilms and Online Access Techniques • Knowledge of Various Equipments currently used in the Microfilming Field
18.	191/2015	Computer Operator (BS-16), National Highways and Motorways Police, Ministry of Communications.	Second Class or Grade 'C' Bachelor's degree in Computer Science.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Sentence Structuring Part-II <ul style="list-style-type: none"> • Software Research and Development, • Program logic, • Visual Basic, C++, Java, Unix/Red Hat Linux Operating System, • Computer Networks and Internet, • Computer Graphics and Algorithms • Development of Basic Algorithms, • Analyzing Problems.
19.	198/2015	Junior Ordnance Management Officer Civilian (Stores) (BS-16), Ordnance Corps, GHQ, Ministry of Defence	i. Second Class or Grade 'C' Bachelor's degree or equivalent from a University recognized by HEC. ii. 02 years post qualification experience in Store Management	Objective Type Test (MCQ) Part-I English =20 marks Part-II Professional Test=80 marks	Part-I Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Basic Arithmetic • General Science • Basic knowledge of I.T • Knowledge of Procedures for Receipt and issue of Stores • Knowledge of the subject of:- <ul style="list-style-type: none"> a. Stock Taking b. Care and preservation of Military Stores c. Ware House Management

**Scheme and Syllabus for Written Examination (Descriptive)
for All Posts in BS-20 advertised under Consolidated
Advertisement No. 12/2015**

Case No.	Particulars of the Post
F.4-163/2015-R	Consulting Physician/Surgeon (BS-20) Federal Government Polyclinic Islamabad, Capital Administration and Development Division
F.4-193/2015-R	Director General (BS-20), Institute of Optronics, Ministry of Defence Production
F.4-195/2015-R	Director General (BS-20), National Archives of Pakistan, Cabinet Division
F.4-196/2015-R	Director General (BS-20), Pakistan Environmental Protection Agency (PAK-EPA), Ministry of Climate Change

PAPER: ENGLISH (100 MARKS)

English Essay: Candidates will be required to write an Essay in English from three topics comprising approximately **2000 words**. Candidates are expected to reflect comprehensive and research based knowledge on a selected topic. Candidate's articulation, expression and technical treatment of the style of English Essay writing will be examined.

OR

Case Study: Candidates will be given real situation case studies related to advertised posts/organization concerned and will be expected from the candidates to present (i) identification of issues (ii) evaluation of issues (iii) legal or case related theories (iv) evaluation of case facts if required and (v) possible solution of the case or writing judicial order, if the case so requires.

Schemes & Syllabi for Written Examination (Descriptive)

Case No.	F.4-160/2015-R
Particulars of post	Senior Official Reporter (Urdu) (BS-18), National Assembly Secretariat
Minimum Qualification & Experience:	i) Second Class or Grade "C" Bachelor Degree from HEC recognized university. ii) Urdu Shorthand Speed 140 words per minute. iii) Urdu Typing Speed 50 words per minute. iv) Proficiency in relevant Computer Softwares v) Five (5) years relevant post qualification experience rendered in Public/Private Sector.

PAPER-I: URDU

Max Marks: 100

Time Allowed: 3 Hours

- (30 نمبر)
- 1- اردو مضمون نویسی
امیدوار نے چھ عنوانوں میں سے کسی ایک پر کم از کم 1000 الفاظ پر مشتمل ایک مضمون لکھتا ہے۔ جس میں امیدوار کا علم، تحقیق، اور سوچ کا اظہار ہو۔
- 2- اردو تخلص نویسی (15 نمبر)
- 3- اردو گرامر (10 نمبر)
- 4- اردو ذخیرہ الفاظ (10 نمبر)
- 5- اردو سے انگریزی ترجمہ (10 نمبر)
- 6- انگریزی سے اردو ترجمہ (10 نمبر)
- 7- مترادف اور متضاد الفاظ (10 نمبر)
- 8- جملوں کی درستگی (05 نمبر)

کتاب برائے استفادہ

نمبر شمار	عنوان	مصنف
1-	دری اردو کمپوزیشن	غلام جیلانی مخدوم
2-	ثانوی زبان کی حیثیت سے اردو کی تدوین	ڈاکٹر محمد سلیمان الطہر
3-	اردو انگریزی فارسی گرامر	سید وقار احمد رضوی
4-	اردو نثر، لہجہ اور مضامین و عروضی سوالات برائے ایس ایس ایس، پی ایچ ایس	جہانگیر کس ڈپو
5-	مقابلے کا امتحان کے لئے اردو مضامین برائے ایس ایس ایس، پی ایچ ایس	جہانگیر کس ڈپو

PAPER-II: PROFESSIONAL

Max Marks: 100

Time Allowed: 3 Hours

S. No.	Detail of Topics	Marks
1.	Urdu Typing Test with minimum speed of 50 W.P.M	50
2.	Urdu Shorthand Test with minimum speed of 140 W.P.M	50

**Schemes and Syllabi for Written Examination (Descriptive)
for All Posts in BS-18 & BS-19 (Except case no. 160/2015)
included in Consolidated Advertisement No. 12/2015**

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.4-168/2015-R
Particulars of post	Deputy Chief (Transport) (BS-19), National Energy Conservation Centre (ENERCON), Ministry of Water and Power
Minimum Qualification & Experience:	<p>i. Second Class or Grade 'C' Bachelor's degree in Mechanical or Transport Engineering or equivalent from a University recognized by the HEC.</p> <p>ii. Twelve (12) years post qualification experience in the relevant field with atleast three (3) years in Transport Energy Conservation programmes.</p>

Engineering: 100 Marks**I. Transportation Engineering:**

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

II. Mechanical Engineering Fundamentals

Mechanics and Strength of Materials: Concept of Stress and Strain, bending, torsion, geometric properties of areas, principal stresses, Tensile testing, Stress- Strain curve, Difference between Engineering and True Stress & Strain, Shear Stress & Strain, Concept of elastic and plastic deformation, Yield & ultimate Tensile strengths, Elongation, Toughness and Resilience, Ductility and Malleability, Hardness Testing, Brinell and Rock well Hardness test, bending moment,

Fluid Mechanics: Properties and basics of fluid mechanics, loss of head, power transformation by fluids, pumps, turbines. Fluid static's, Fluid dynamics, Types of flow: Turbulent and Laminar, Reynold's number.

Manufacturing: Different manufacturing processes like Casting, Forging, Machining, Rolling, Extrusion, Wire-drawing, welding, Turning (lathe), Milling, Shaping, Gear cutting, Drilling, Fitting.

III. Environmental Engineering:

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

IV. Costing, Accounting and Budgeting:

Net present value, Net future value, cash flows, auditing, income statement, balance sheet, taxation, financial risk management, cost analysis.

V. Project Management:

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

VI. Inventory Management:

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

VII. Quality Management Systems:

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

SUGGESTED READINGS

S.No.	Title	Author
1.	Transportation Engineering, Planning and design	Paul Wright.
2.	Public Health Engineering	STEEL.
3.	Engineering Mechanics (Statics)	J.L. Merriems.
4.	Manufacturing Processes for Engineering Materials	Kalpakjian
5.	Environmental Science: Earth as a living Planet, 9 th ed.	Botkin, D . Keller, E. 2014
6.	Handbook of Engineering Management	Dennis Lock.
7.	Total Quality Management	Dale H. Besterfield, Carol Besterfield-Michna, Glen H. Besterfield, Mary Gesterfield-Sacre

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

Case No.	F.4-170/2015-R
Particulars of post	2 nd Engineer (Electronics) (System Engineer PCBRF) (BS-18), Pakistan Navy, Ministry of Defence
Minimum Qualification & Experience:	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 of the multi layer Printed Circuit Board/ use of Specialized Diagnostic Test Equipment/ handling of Programmable ICs.

Engineering : 100 Marks**I. Electricity & Electronics:**

Electricity & Magnetism; Electrical potential, Resistance, Laws of resistance, Conductance, Conductivity, Impedance, Ohm law, Resistance in series and in parallel, practical resistors, work, power, Energy, Joule's law of electric field intensity, Gauss's Theorem, Capacitor, Capacitance, Capacitors in parallel and series. Force on a conductor in a magnetic field, electrical and magnetic circuits, leakage flux, Relation between magnetism and electricity, Induced emf, induced current and directions, Faraday's laws of electromagnetic inductions, Lenz's law, dynamically induced emf, Self inductance, mutual inductance and inductance in series/parallel, magnetic hysteresis, Energy stored in magnetic field, Generation of alternating currents and voltages.

II. Electrical Machines:

DC Motors: Shunt, Series and Compound Motors, Speed and Torque Relations. Transformers: Principle, Construction, Voltage transformation ratio, Step-up/step-down transformers, Copper & Iron Losses, Transformer connections; delta and star.

AC Motors: Induction motor, Synchronous motor, Performance, Efficiency. Single phase and three phase Motors.

Generators: Principle, Construction, Different components of generators. AC Generators, DC Generators.

III. Electronics:

Transistors: types, calculations of voltages and currents in simple transistor circuits.

Amplifier & Oscillators: Working and classification of amplifiers, Class A and Class B Amplifiers, Feedback Amplifiers, Types of Feedback, RC Oscillators.

Integrated Circuits: OP Amps, timers, flip flop, converters, filters.

Telecommunications: EM theory, antennas, antenna gain, free space loss, fading. Modulations (AM, FM, PM, PWM, Delta, FSK, ASK, PSK), Error correction, Demodulation, Detectors, Transmitter, Receivers.

DSP and Controls; filters, stability, Z-transform, Nyquist criteria, S domain, transfer functions.

Introduction to Computing: History and evolution of computers, central processing unit, data storage, input/output devices, multimedia, operating systems, programming languages, networking, the internet, system analyses and design, management information system, electronic commerce, security and privacy issues, ethical issues and the computing profession,

IV. Power Systems:

Power network analysis, Polyphase circuits, Transients, Transmission Lines, Losses.

V. Costing, Accounting and Budgeting:

Net present value, Net future value, cash flows, auditing, income statement, balance sheet, taxation, financial risk management, cost analysis.

VI. Project Management:

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

VII. Inventory Management:

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

VIII. Quality Management Systems:

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

SUGGESTED READINGS

S.No.	Title	Author
1.	Electrical Technology	B.L. Tharaja
2.	Electronic Devices and Circuits.	Bogart
3.	DC Machines	P.C. Sen
4.	Semiconductors	Manzar Saeed
5.	Modern Digital and Analog Communication	B.P.Lathi
6.	Computers, tools for an Information age,	H.L. Captron, Addison Wesley
7.	Handbook of Engineering Management	Dennis Lock.
8.	Total Quality Management	Dale H. Besterfield, Carol Besterfield-Michna, Glen H. Besterfield, Mary Gesterfield-Sacre

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

Case No.	F.4-174/2015-R
Particulars of post	Neonatologist (BS-18), Federal Government Polyclinic, Capital Administration and Development Division.
Minimum Qualification & Experience:	<ul style="list-style-type: none"> i. MBBS or equivalent qualification recognized by the PMDC. ii. Postgraduate higher diploma in the requisite specialty with three (3) years post qualification clinical experience in the speciality OR Postgraduate lower diploma with five (5) years post qualification clinical experience in the speciality. iii. Postgraduate training in the field of Neonatology with at least one (1) year post qualification experience in a Neonatology unit not less than 20 basinates.

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

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

Case No.	F.4-175/2015-R
Particulars of post	Pathologist-Cum-Bacteriologist (BS-18), Medical Department of Pakistan Railways, Ministry of Railways.
Minimum Qualification & Experience:	<ul style="list-style-type: none"> i. MBBS or equivalent qualifications. ii. Post graduate higher diploma/ degree, viz., MS/FRCS/ FCPS/ MRCP/ FFA or equivalent in the requisite Speciality and two (2) years post qualification clinical experience OR Post graduate lower diploma in the requisite Speciality and four (4) years post qualification clinical experience.

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

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

Case No.	F.4-176/2015-R
Particulars of post	Associate Professor, Islamic Studies (Female) (BS-19), F.G. Colleges, Directorate of Federal Government Educational Institutions (Cantts/ Garrisons), Ministry of Defence
Minimum Qualification & Experience:	Ph.D. Degree in Islamic Studies with eight (8) years post qualification teaching and administrative experience at College/ University level. OR M. Phil Degree in Islamic Studies with ten (10) years post qualification teaching and administrative experience at College/ University level. OR Second Class or Grade 'C' Master's Degree in Islamic Studies with twelve (12) years post qualification teaching and administrative experience at College/ University level.

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

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

II. Study of Seerah

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

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

III. Islamic Civilization and Culture:

- Meanings and the vital elements of Islamic Civilization and Culture
- Role of civilisation in the development of the human personality and communities
- Distinctions of Islamic Civilization;
 - Tauheed
 - Risalat
 - Spiritualism
 - Dignity of Man
 - Equality
 - Social Justice
 - Moral values
 - Tolerance
 - Rule of Law

IV. Islam and World

- Impact of Islamic Civilization on the West and vice-versa.
- Muslim World and the Contemporary Challenges
- Interaction between East and West.
- Role of Islam in the modern world.

Part-II: (Professional) 50 Marks

I. Development of Curriculum and Instructional Material

- Elements of Curriculum.
- Relationship of Education and Curriculum
- Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives, Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials.

II. Process of Teaching and Teaching Strategies

- Process of Classroom Communication
- Factors affecting Classroom Communication
- Barriers to Classroom Communication
- Use of Instructional Materials and Media

III. Educational Assessment and Evaluation

- Concept of Classroom Assessment and Evaluation
- Distinction between Assessment, Evaluation and Measurement
- Approaches to Evaluation: Formative Evaluation; Summative Evaluation
- Types of Test: Essay Type; Objective Type: Multiple Choice, True-False Items, Matching Type; Principles of Construction of these Test
- Characteristics of a Good Test: Validity, Reliability, Objectivity, Usability

IV. Educational Administration and Supervision

- The Concept of Administration
- Educational Planning and Organization in Pakistan
- Approaches to Educational Administration: Democratic; Authoritarian; Laissez-faire
- Educational Supervision

V. Research Methods in Education

- Scientific Method and its Application in Education
- Sampling Techniques
- Research Instruments: Questionnaire; Interview; Test; Observation; Rating Scale
- Type of Research: Basic/Applied Research; Historical Research; Descriptive Research; Correlation Research; Causal-Comparative Research; Experimental Research; Action Research; Qualitative and Quantitative Research
- Research Proposal and Report Writing

SUGGESTED READINGS

S. No.	Title	Author
1.	Islam: its meaning and Message	Khurshid Ahmad
2.	Islam: The Misunderstood Religion	Muhammad Qutub
3.	Towards Understanding Islam	Abul Aala Moudoodi
4.	Ideals and Realities of Islam	Hussain Nasr,
5.	A brief Survey of Muslim Science and Culture	Muhammad Abdur –Rahman
6.	Quranic Sciences	Afzalur Rahman
7.	Research in Education	JW Best
8.	Integrating Education Technology into Teaching	Roblyer
9.	Curriculum Development	S.M. Shahid
10.	Educational Measurement and Evaluation	S.M. Shahid
11.	Educational Administration	S.M. Shahid

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

Case No.	F.4-177/2015-R
Particulars of post	Associate Professor/Vice Principal (Male) (Computer Science) (BS-19), Islamabad Model Colleges, Capital Administration & Development Division
Minimum Qualification & Experience:	Ph.D. degree in Computer Science with eight (8) years post qualification teaching and administrative experience at College/ University level. OR M. Phil degree in Computer Science with ten (10) years post qualification teaching and administrative experience at College/ University level OR Second Class or Grade 'C' Master's degree in Computer Science with twelve (12) years post qualification teaching and administrative experience at College/ University level.

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

- Elements of Curriculum.
- Relationship of Education and Curriculum

- Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives, Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials.
- II. Process of Teaching and Teaching Strategies**
- Process of Classroom Communication
 - Factors affecting Classroom Communication
 - Barriers to Classroom Communication
 - Use of Instructional Materials and Media
- III. Educational Assessment and Evaluation**
- Concept of Classroom Assessment and Evaluation
 - Distinction between Assessment, Evaluation and Measurement
 - Approaches to Evaluation: Formative Evaluation; Summative Evaluation
 - Types of Test: Essay Type; Objective Type: Multiple Choice, True-False Items, Matching Type; Principles of Construction of these Test
 - Characteristics of a Good Test: Validity, Reliability, Objectivity, Usability
- IV. Educational Administration and Supervision**
- The Concept of Administration
 - Educational Planning and Organization in Pakistan
 - Approaches to Educational Administration: Democratic; Authoritarian; Laissez-faire
 - Educational Supervision
- V. Research Methods in Education**
- Scientific Method and its Application in Education
 - Sampling Techniques
 - Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
 - Type of Research: Basic/Applied Research; Historical Research; Descriptive Research; Correlation Research; Causal-Comparative Research; Experimental Research; Action Research; Qualitative and Quantitative Research
 - Research Proposal and Report Writing

Suggested 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.4-183/2015-R
Particulars of post	Assistant Professor (Computer Science) (BS-18), Naval Headquarters, (Pakistan Navy) Ministry of Defence
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Master's degree in Computer Science. ii. Five (5) years post qualification teaching experience at college level in Computer Science OR M. Phil with three (3) years post qualification teaching experience at college level in the Computer Science OR Ph.D. in Computer Science

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

- Elements of Curriculum.
- Relationship of Education and Curriculum
- Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives, Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials.

II. Process of Teaching and Teaching Strategies

- Process of Classroom Communication
- Factors affecting Classroom Communication
- Barriers to Classroom Communication
- Use of Instructional Materials and Media

III. Educational Assessment and Evaluation

- Concept of Classroom Assessment and Evaluation
- Distinction between Assessment, Evaluation and Measurement
- Approaches to Evaluation: Formative Evaluation; Summative Evaluation
- Types of Test: Essay Type; Objective Type: Multiple Choice, True-False Items, Matching Type; Principles of Construction of these Test
- Characteristics of a Good Test: Validity, Reliability, Objectivity, Usability

IV. Educational Administration and Supervision

- The Concept of Administration
- Educational Planning and Organization in Pakistan
- Approaches to Educational Administration: Democratic; Authoritarian; Laissez-faire
- Educational Supervision

V. Research Methods in Education

- Scientific Method and its Application in Education
- Sampling Techniques
- Research Instruments: Questionnaire; Interview; Test; Observation; Rating Scale
- Type of Research: Basic/Applied Research; Historical Research; Descriptive Research; Correlation Research; Causal-Comparative Research; Experimental Research; Action Research; Qualitative and Quantitative Research
- Research Proposal and Report Writing

SUGGESTED READINGS

S.No.	Title	Author
1.	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.4-184/2015-R
Particulars of post	Director (BS-19) Textile Commissioner's Organization, Karachi, Ministry of Textile Industry
Minimum Qualification & Experience:	i. Master's Degree in Textile Technology. ii. Ten years post qualification experience in the field of Textile in a Government/ Semi Government/ Reputable Private Industrial Research/ Trade Organization. OR i. Bachelor's Degree in Textile Technology. ii. Twelve years post qualification experience in the field of Textile in a Government/ Semi Government/ Reputable Private Industrial Research/ Trade Organization.

Textile Technology: 100 Marks

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

SUGGESTED READINGS

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

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

Case No.	F.4-185/2015-R
Particulars of post	Assistant Professor (Male) (Political Science) (BS-18) F.G. Colleges, Directorate of Federal Government Educational Institutions (Cantts/ Garrisons), Ministry of Defence
Minimum Qualification & Experience:	Ph.D. Degree in the relevant subject with one year (1) post qualification teaching experience at College/ University level. 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) year post qualification teaching experience at College/ University level.

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

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

II. Comparative Politics:

Political Socialization, Political Culture, Political Development, Political Recruitment, Social Change, Civil Society, Violence and Terrorism in Politics, Gender and Politics, Women Empowerment.

III. Political Participation:

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

IV. Political Institutions and Role of Government:

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

V. Forms of Government:

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

VI. Government and Politics in Pakistan:

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

Political Culture of Pakistan, Political developments and the Role of civil and military Bureaucracy, Judiciary, Feudalism, Dynastic Politics, Political Parties and Interest Groups, Elections and Voting Behavior, Religion and Politics, Ethnicity and National Integration.

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

- Elements of Curriculum.
- Relationship of Education and Curriculum
- Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives, Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials.

II. Process of Teaching and Teaching Strategies

- Process of Classroom Communication
- Factors affecting Classroom Communication
- Barriers to Classroom Communication
- Use of Instructional Materials and Media

III. Educational Assessment and Evaluation

- Concept of Classroom Assessment and Evaluation
- Distinction between Assessment, Evaluation and Measurement
- Approaches to Evaluation: Formative Evaluation; Summative Evaluation
- Types of Test: Essay Type; Objective Type: Multiple Choice, True-False Items, Matching Type; Principles of Construction of these Test
- Characteristics of a Good Test: Validity, Reliability, Objectivity, Usability

IV. Educational Administration and Supervision

- The Concept of Administration
- Educational Planning and Organization in Pakistan
- Approaches to Educational Administration: Democratic; Authoritarian; Laissez-faire
- Educational Supervision

V. Research Methods in Education

- Scientific Method and its Application in Education
- Sampling Techniques
- Research Instruments: Questionnaire; Interview; Test; Observation; Rating Scale
- Type of Research: Basic/Applied Research; Historical Research; Descriptive Research; Correlation Research; Causal-Comparative Research; Experimental Research; Action Research; Qualitative and Quantitative Research
- Research Proposal and Report Writing

SUGGESTED READINGS

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

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

Case No.	F.4-192/2015-R
Particulars of post	Assistant Professor Commerce, Male (BS-18), Islamabad Model Colleges, Capital Administration & Development Division
Minimum Qualification & Experience:	Ph.D. Degree in Commerce with one year (1) post qualification teaching experience at College/ University level. OR M. Phil Degree in Commerce with three (3) years post qualification teaching experience at College/ University level. OR Second Class or Grade 'C' Master's Degree in Commerce with five (5) year post qualification teaching experience at College/ University level.

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

- I. **Introduction to Business Finance:** Nature and Scope of a Business Entity, Contemporary Challenges posed to a Business, Common Legal Forms of a Business Entity, Meaning, Nature and Scope of Finance and Financial Management, Common Modes (Types) of Business Finance – Short- Medium- and Long-term Financing, Nature and Scope of Financial Markets and Institutions, Features and Classification of Financial Markets, Financial Management Techniques for Decision-making.
- II. **Auditing:** Nature and Purpose of Auditing, Audit Planning and Control, Audit Procedures and Techniques, Audit Evidence and Documentation, Completion of an Audit, Performance of Audit, The Reporting of Audit, Internal Audit.
- III. **Role and Responsibilities of an Auditor:** Auditor's professional and legal Rights, Responsibilities & Duties, and Liabilities, Auditor's Opinion and Report and their classification (Types), as specified under the Companies Ordinance 1984 and in the handbook of IFAC.
- IV. **Fundamental Accounting Principles, Concepts, Assumptions and Conventions:** Nature and Scope of Accounting, Accrual/Matching Concept, Consistency of Presentation and Comparability, True and Fair View, Neutrality, Materiality, Prudence, Completeness, Understandability and Usefulness, Going Concern, and Substance over Form.
- V. **Cost Accounting:** Concepts and Scope of Cost Accounting, Cost Classification and Flows, Material Costing and Control, Labour Costing and Control, Factory Overhead Costing and Control, Types of Costing Systems
- VI. **Managerial Economics:** The Nature and Scope of Managerial Economics, Optimization Techniques and new Management Tools, Demand Theory, Demand Estimation, Demand Forecasting, Production and Cost Analysis, Cost Theory and Estimation, Linear Programming, Risk Analysis
- VII. **Financial Management:** Elements of Financial Administration, Performance and Programmed Budgeting, Capital Budget, Principles of Budgeting, Auditing and Accounting.

Part-II: (Professional)**50 Marks**

- I. **Development of Curriculum and Instructional Material**
 - Elements of Curriculum.
 - Relationship of Education and Curriculum

- Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives, Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials.

II. Process of Teaching and Teaching Strategies

- Process of Classroom Communication
- Factors affecting Classroom Communication
- Barriers to Classroom Communication
- Use of Instructional Materials and Media

III. Educational Assessment and Evaluation

- Concept of Classroom Assessment and Evaluation
- Distinction between Assessment, Evaluation and Measurement
- Approaches to Evaluation: Formative Evaluation; Summative Evaluation
- Types of Test: Essay Type; Objective Type: Multiple Choice, True-False Items, Matching Type; Principles of Construction of these Test
- Characteristics of a Good Test: Validity, Reliability, Objectivity, Usability

IV. Educational Administration and Supervision

- The Concept of Administration
- Educational Planning and Organization in Pakistan
- Approaches to Educational Administration: Democratic; Authoritarian; Laissez-faire
- Educational Supervision

V. Research Methods in Education

- Scientific Method and its Application in Education
- Sampling Techniques
- Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
- Type of Research: Basic/Applied Research; Historical Research; Descriptive Research; Correlation Research; Causal-Comparative Research; Experimental Research; Action Research; Qualitative and Quantitative Research
- Research Proposal and Report Writing

SUGGESTED READINGS

S. No.	Title	Author
1.	Fundamentals of Accounting Principles	Wild. Larson. Chiappetta
2.	Principles of Accounting, and Advanced Accounting	Sohail Afzal
3.	Cost Accounting	Nisar ur Din.
4.	Advanced Auditing	Prof. Dr. Khuaja Amjad Saeed
5.	Managerial Economics	Micheal Baye
6.	Research in Education	JW Best
7.	Integrating Education Technology into Teaching	Roblyer
8.	Curriculum Development	S. M. Shahid
9.	Educational Measurement and Evaluation	S. M. Shahid
10.	Educational Administration	S. M. Shahid

PAPER-II: PROFESSIONALMax Marks: 100Time Allowed: 3 Hours

Case No.	F.4-194/2015-R
Particulars of post	Acupuncture Specialist (BS-18), Federal Government Polyclinic, Capital Administration and Development Division
Minimum Qualification & Experience:	<ul style="list-style-type: none"> i. MBBS or equivalent qualification recognized by the PM&DC. ii. Five (5) years post qualification experience including one (1) year as Acupuncture Specialist after obtaining a diploma in that speciality duly recognized.

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