

FEDERAL PUBLIC SERVICE COMMISSION (Curriculum & Research Wing)

Schemes and Syllabi for Screening/Professional Tests as well as Descriptive Examination Relating to Posts Advertised under Consolidated Advertisement No. 02/2025

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/ Experience for the Posts	Test Specification	Topics of Syllabi
1.	40/2025	Junior Civilian Security Officer (BS-16) , OS Directorate, GHQ, Ministry of Defence.	Retd. JCO or equivalent of the Armed Forces. OR i. Second Class or Grade 'C' Bachelor's degree or equivalent qualification from a University recognized by HEC. ii. Two (2) years post qualification experience as Security Supervisor.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II General Intelligence/ Professional Test = 80 marks	Part-I Grammar usage, Sentence Structuring. Part-II ▪ Basic Arithmetic – Algebra – Ratios – Percentages – Arithmetic Means ▪ Current Affairs. – Developments at National and International Levels in the last 5 years ▪ Modern Law Enforcement ▪ Modern Crime Prevention System ▪ Security Measures to Maintain Law & Order
2.	41/2025	Drilling Engineer (BS-17) , Geological Survey of Pakistan, Petroleum Division, Ministry of Energy.	Second Class or Grade 'C' B.E / B.Sc. degree in Mechanical Engineering 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 ▪ Drilling and its Scope ▪ Purpose and uses of Drilling ▪ Classification of Drilling ▪ Type of Drilling ▪ Methods used for Purification of Drilling Fluid ▪ Causes of Circulation Fluid losses and its Prevention ▪ Function of Equipments and Accessories used for Drilling ▪ Types of Mud used for Drilling ▪ Types of Drilling Bits and their functions ▪ Drilling Circulation Fluid: Type, Purpose and Properties.

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/ Experience for the Posts	Test Specification	Topics of Syllabi
3.	42/2025	Assistant Executive Engineer (BS-17) , Civil Engineering Department of Pakistan Railways, Ministry of Railways.	i. Bachelor's degree in Civil Engineering or equivalent qualification. ii. 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"> Soil Mechanics & Foundation Engineering Surveying & Levelling Costing and Estimation Construction Management Building Material & Building Construction Structural Design Applications Concrete Technology & R.C.C Structure Design Preparation of PC-1 for Infrastructure Projects Project Management & Supervision. Basic IT/Computer Knowledge
4.	43/2025	Assistant Mechanical Engineer (BS-17) , Mechanical Engineering Department of Pakistan Railways, (Railway Board), Ministry of Railways.	i. Bachelor's degree in Mechanical Engineering or equivalent qualification. ii. 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"> Heat Transfer Thermodynamics Industrial Materials Machine Design and Drawing Mechanics of Machines Production Management & Quality Control Workshop Technology Hydraulic Machines Project Management Basic IT/Computer Knowledge
5.	44/2025	Software Engineer (BS-17) , Institute of Optronics, Ministry of Defence Production.	Second Class or Grade 'C' Master's degree in Computer Science/ Information Technology/ Software Engineering or equivalent qualification from a University recognized by the HEC. OR Second Class or Grade 'C' Bachelor's degree in Computer Science/ Software Engineering/ BIT (4 years duration) 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"> Software Architecture, Software Quality Assurance, Coding, Writing, Testing and Debugging of Software Applications, Computer Networks and Internet, Development of Basic Algorithms, Object Oriented Programming, Software Research and Development, Unified Modeling Language (UML) IT Audit and Security, Operating Systems Architecture Data Communication/Protocols

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/ Experience for the Posts	Test Specification	Topics of Syllabi
6.	45/2025	System Analyst (BS-17) , Institute of Optronics, Ministry of Defence Production.	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 (4 years duration) 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"> Computer Architecture, Software Architecture, Software Quality Assurance, Coding, Writing, Testing and Debugging of Software Applications, Computer Networks and Internet, Object Oriented Programming, Unified Modeling Language (UML) Database Management Systems, Online Systems, IT Audit and Security, Data Communication/Protocols
7.	47/2025	Secondary School Teacher (Female) (Physics) (BS-17) , Federal Directorate of Education, Ministry of Federal Education & Professional Training.	Second Class or Grade 'C' Master's Degree/ Bachelor's degree (4 years duration) in relevant subject with 2 nd Class or Grade 'C' M.Ed./ B.Ed./ B.Ed. (Hons)/ Associate Diploma in Education or equivalent qualification 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) <ul style="list-style-type: none"> Heat and Thermodynamics, Waves and Optics, Electrostatic, Electricity and Magnetism, Atomic and Modern Physics, Basic Solid State Physics, Electrodynamics, Mechanics Part-III <ul style="list-style-type: none"> Teaching Techniques and Methodology Classroom Management and Discipline Testing and Evaluation Knowledge of Bloom's Taxonomy
8.	49/2025	Physicist/ Radiation Protection Officer (BS-16) , AFIC/NIHD, Ministry of Defence.	Second Class or Grade 'C' Bachelor's degree in Nuclear Engineering OR Second Class or Grade 'C' Bachelor's degree in Nuclear Physics or equivalent qualification from a University recognized by HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Grammar Usage, Sentence Structuring. Part-II <ul style="list-style-type: none"> Introduction to Nuclear Physics Radiation Interaction & Detection Radiation Biology Radiation Safety Principles and Techniques Physics of Nuclear Medicine

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/ Experience for the Posts	Test Specification	Topics of Syllabi
9.	51/2025	Assistant Librarian (BS-17), AFIC/ NIHD, Ministry of Defence.	Second Class or Grade 'C' Bachelor's Degree in Library Science/Library and Information Science or equivalent qualification from a University recognized by HEC. OR i. Second Class or Grade 'C' Bachelor's Degree with Diploma in Library Science or equivalent qualification from a University recognized by HEC. 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 <ul style="list-style-type: none"> Information Sources and Services Cataloguing: Theory and Practice Procurement and Maintenance of Library Books 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
10.	54/2025	Civilian Workshop Supervisor (CWS) Biomedical (BS-16), AFIC/ NIHD, Ministry of Defence.	Second Class or Grade 'C' Master's Degree in Biomedical/ Electrical Engineering or equivalent qualification from a University recognized by HEC. OR i. Second Class or Grade 'C' Bachelor's Degree in Biomedical/ Electronics/ Electrical Engineering or equivalent qualification from a University recognized by HEC ii. Two (2) years post qualification experience in the operation maintenance and repair of Biomedical/ Electro Medical equipment.	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"> Biomechanics Bio-Instrumentation Rehabilitation Engineering: Electric Circuits Advanced Manufacturing Design Technology Electronic Devices and Circuits Workshop Practice Manufacturing Processes Digital Logic Design

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/ Experience for the Posts	Test Specification	Topics of Syllabi
11.	55/2025	Inspector Customs/ Intelligence Officer (BS-16) , Revenue Division, Federal Board of Revenue. Note: At first stage MCQs Screening Test shall be held, then on the basis of its result top merit position holders @ ten candidates per vacancy from respective quotas would be called for Descriptive Test.	i. Second Class or Grade 'C' Bachelor's Degree from a recognized university with Economics, Commerce, Statistics, Accounting, Computer Science, Law, Pharmacy, Chemistry or Physics as one of the subjects or B.Sc Engineering in any specialty. ii. Computer literacy up to the level of MS Word, MS Power Point and MS Excel.	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"> Issues/Challenges at National and International Level during the last 5 years Pakistan Affairs & Islamic Studies <ul style="list-style-type: none"> Basic Level knowledge Basic Computer Operation in MS Office Note-I: (Equal weightage for each topic at Part-II) Note-II: For Pre-selected candidate, syllabus for Descriptive Test is at Page-13 below. Qualifying standard for both MCQ and Descriptive test is 50%. Note-III: Every wrong answer in the MCQ Test shall be deducted at the rate of 0.5 marks.
12.	56/2025	Lecturer (Male) (BS-17) , A. History B. Physics Directorate of Federal Government Educational Institutions (Cantts/ Garrisons), Ministry of Defence.	Second Class or Grade 'C' Master's Degree or equivalent qualification in the relevant subject	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Subject Test = 50 marks Part-III Professional Test = 30 marks	For (A) History Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II (Masters Level) <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 Institutional Development of the Muslim Civilisation (Umayyad, Abbasid, Crusades, Ottoman Empire) Muslim Freedom Movement in India (1857-1947) Ideology of Pakistan The Kashmir Issue European History History of USA Pakistan and Neighbouring Countries Research Methodology & Philosophy of History Part-III <ul style="list-style-type: none"> Teaching Techniques and Methodology Classroom Management and Discipline Testing and Evaluation Knowledge of Bloom's Taxonomy

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/ Experience for the Posts	Test Specification	Topics of Syllabi
					For (B) Physics Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II (Masters Level) <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, Part-III <ul style="list-style-type: none">▪ Teaching Techniques and Methodology▪ Classroom Management and Discipline▪ Testing and Evaluation▪ Knowledge of Bloom's Taxonomy
13.	57/2025	Lecturer (Chemistry) (BS-17), Naval Headquarters, Ministry of Defence.	Second Class or Grade 'C' Master's Degree in relevant subject.	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) <ul style="list-style-type: none">▪ Nature, Properties & States of Matter,▪ Electronic Structure,▪ Bonding,▪ Chemical Kinetics & Radioactivity,▪ Synthetic Chemistry▪ Polymers,▪ Reaction Mechanism (electrophilic & nucleophilic substitution and addition reaction)▪ Inorganic Chemistry,▪ Thermodynamics,▪ Electrochemistry, Part-III <ul style="list-style-type: none">▪ Teaching Techniques and Methodology▪ Classroom Management and Discipline▪ Testing and Evaluation▪ Knowledge of Bloom's Taxonomy

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/ Experience for the Posts	Test Specification	Topics of Syllabi
14.	60/2025	Statistical Officer (BS-17), Medical Directorate, GHQ, Ministry of Defence.	i. Second Class or Grade 'C' Master's degree in Statistics/ Economics with Statistics/ Mathematics with Statistics. ii. Two (2) years post qualification experience in Statistical 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, Presentation of Data, Measures of Central Tendency, Measures of Dispersion, Index Numbers, Simple Regression and Correlation, Time Series Analysis, Sampling Techniques, Testing of Hypothesis, Techniques of Research, Report writing and presentation, Basic Arithmetic and I.T Knowledge.
15.	61/2025	Psychiatrist (BS-17), Anti Narcotics Force, Ministry of Narcotics Control.	i. MBBS or equivalent qualification recognized by PMDC. ii. Registration with PMDC. iii. Three (3) years post qualification experience in psychiatry 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"> Core courses of MBBS degree program. Diagnose and remedy in the following disorders: <ul style="list-style-type: none"> i. Mood disorders. ii. Anxiety disorders. iii. Schizophrenia.
16.	62/2025	Deputy Assistant Director (Stenography) (BS-16), Secretariat Training Institute, Cabinet Secretariat, Establishment Division.	i. Second Class or Grade 'C' Bachelor's Degree from University recognized by HEC. ii. Three (3) years post qualification experience as Stenotypist/ Stenographer iii. Certificate in Urdu/ English Shorthand and Typing from a recognized institution. iv. Speed of 80 w.p.m. in Shorthand and 40 w.p.m. in Typing at 90% accuracy or comparable figures of speed and accuracy on computer.	<ul style="list-style-type: none"> Typing Test (Urdu/English) with minimum Speed of 40 W.P.M with 90% accuracy 35 Marks Shorthand Test (Urdu/English) with minimum Speed of 80 W.P.M 35 Marks Computer Literacy Test: <ul style="list-style-type: none"> i Microsoft Word (Typing, Formatting) 10 Marks ii Microsoft Excel (Typing, Graph, Calculations) 10 Marks iii Microsoft Power Point (Typing, Formatting, Inserting Objects) 10 Marks <p>NOTE: (i) Typing test would be hold on computers through relevant English/ Urdu Softwares. (ii) I.T/ Computer Literacy means proficiency in relevant English/ Urdu Softwares.</p>	

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/ Experience for the Posts	Test Specification	Topics of Syllabi
17.	65/2025	General Staff Officer Grade-III (Picture Archiving and Communication System (PACS) Administrator) (BS-17), Armed Forces Institute of Radiology and Imaging, Ministry of Defence.	(i) Second Class or Grade 'C' Master's/ Bachelor's (4 years duration) degree in Computer Science / IT / Computer System Engineering / Computer Engineering / Software Engineering or equivalent qualification from a University recognized by HEC. (ii) International certification related to information security (CEH, CHFI or ECSA etc.).	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"> • Software research and development, • Coding, Writing, Testing and debugging of software applications, • Program logic, • Visual Basic, C++, Java, Unix/Red Hat Linux Operating System, • Computer Networks and Internet, • Computer Graphics and Algorithms • Development of basic algorithms
18.	67/2025	Lecturer (BS-17), a) Fine Arts b) Graphic Design Sir Syed School & College of Special Education, FGEI, Directorate, Ministry of Defence.	Second Class or Grade 'C' Master's or Bachelor's (4 years duration) degree in relevant subject from a University recognized by the HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Subject Test = 50 marks Part-III Professional Test = 30 marks	For (A) Fine Arts Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II (Masters Level) <ul style="list-style-type: none"> ▪ History of Art, Design & Architecture ▪ Elements of Art ▪ Drawing & Design Theory ▪ Linear Perspective ▪ Elements & Principles of Image Making ▪ Painting: Basic elements of Art, concepts, media and formats. ▪ Printmaking: Basic elements of art and design principles, concepts, media, and formats Part-III <ul style="list-style-type: none"> ▪ Teaching Techniques and Methodology ▪ Classroom Management and Discipline ▪ Testing and Evaluation ▪ Knowledge of Bloom's Taxonomy

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/ Experience for the Posts	Test Specification	Topics of Syllabi
					<u>For (B) Graphic Design</u> <u>Part-I</u> Vocabulary, Grammar Usage, Sentence Structuring <u>Part-II (Masters Level)</u> <ul style="list-style-type: none"> ▪ Fundamentals of Graphics ▪ Typography & Calligraphy ▪ Color Theory & Application ▪ Sustainable Design ▪ Advanced Graphics ▪ Concept & Layout of Design ▪ Interactive Media Design ▪ Principles of Animation ▪ Printing Technology ▪ Creativity & Innovative Designs ▪ Motion Graphics ▪ Digital Marketing <u>Part-III</u> <ul style="list-style-type: none"> ▪ Teaching Techniques and Methodology ▪ Classroom Management and Discipline ▪ Testing and Evaluation ▪ Knowledge of Bloom's Taxonomy
19.	68/2025	Speech Therapist (BS-17) , Sir Syed School & College of Special Education, FGEI, Directorate, Ministry of Defence.	Second Class or Grade 'C' Master's or Bachelor's (4 years duration) degree in Speech Therapy or Pathology or Speech and Language Pathology / Therapy or equivalent from a University recognized by the HEC. OR Master's or Bachelor's (4 years duration) degree in Psychology with one (1) years diploma in Speech & Language Pathology / Therapy from a recognized Institute / University	Objective Type Test (MCQ) <u>Part-I</u> English = 20 marks <u>Part-II</u> Subject Test = 50 marks <u>Part-III</u> Professional Test = 30 marks	<u>Part-I</u> Vocabulary, Grammar Usage, Sentence Structuring <u>Part-II</u> <ul style="list-style-type: none"> ▪ Behaviour Management ▪ Speech Science ▪ Neural basis of Speech Language and Hearing ▪ Speech and Language Development ▪ Fluency & Fluency Disorders ▪ Swallowing Disorders ▪ Motor Speech Disorder in Adults ▪ Articulation and Phonological Disorders ▪ Resonance Craniofacial Disorders ▪ Language and Language Disorders <u>Part-III</u> <ul style="list-style-type: none"> ▪ Teaching Techniques and Methodology ▪ Classroom Management and Discipline ▪ Testing and Evaluation ▪ Knowledge of Bloom's Taxonomy

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/ Experience for the Posts	Test Specification	Topics of Syllabi
20.	69/2025	Orientation and Briefing Officer (BS-16) , Bureau of Emigration & Overseas Employment, Ministry of Overseas Pakistanis & Human Resource Development.	i. Second Class or Grade 'C' Bachelor's degree from a University recognized by the HEC. ii. Three (3) years post qualification experience in Labour/ Manpower and Overseas Employment Service/ Technical or Vocational Training/ Planning/ Economic Development.	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"> Labour Laws of Gulf Countries Economic Situation of Pakistan Role of remittances and Impact of Immigrants in Pakistani Economy Emigration Ordinance and Rules, 1979 Illegal Migration, Human Trafficking Importance of Technical/Vocational Training for Immigrants Govt. Policies/Measures for Technical/Vocational Training Issues of Pakistani Migrant Workers Importance of pre-departure Orientation & Briefing for Intending Emigrants Knowledge of working methodology, work ethics etc. by the Overseas Pakistanis in host countries
21.	70/2025	Occupational Therapist (BS-17) , Directorate General of Special Education, Ministry of Human Rights.	Second Class or Grade 'C' Bachelor's degree in Occupational Therapy with three 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"> Concept and functions of Occupational Therapy Common Neurological Disorders Role of Occupational Therapy while dealing with the patient with Neurological Conditions Adopted devices and their functions Role of Occupational Therapy in Rehabilitation of Cerebral Palsied Children Role of Occupational Therapy in Daily Living Occupational Therapy as Supportive Measures Occupational Therapy for Blind and Visually Impaired Occupational Therapy in Geriatrics Occupational Therapy for Children and Adolescents with Psychological Disorders.

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/ Experience for the Posts	Test Specification	Topics of Syllabi
22.	72/2025	Assistant Director (BS-17) , Airports Security Force, Ministry of Defence.	Second Class or Grade 'C' Master's / Bachelor's (16 years) degree or equivalent qualification from a University recognized by HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II General Intelligence/ Professional Test = 80 marks	Part-I Vocabulary, 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"> – Issues/Challenges at National and International Level during the last 5 years • Pakistan Affairs & Islamic Studies <ul style="list-style-type: none"> – Basic Level knowledge • Security Measures to Maintain Law & Order
23.	77/2025	Agriculture Engineer (BS-17) , Water Management & Irrigation Department Gilgit Baltistan, Ministry of Kashmir Affairs and Gilgit Baltistan.	Second Class or Grade 'C' B.Sc. Agriculture Engineering / B.E (Agriculture) degree 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"> • Irrigation Channels (Design & Construction) • Water Reservoirs (Design & Construction) • Protective Bunds (Design & Construction) • Surveying and Levelling
24.	78/2025	Trained Graduate Teacher (BS-16) , Sir Syed School & College of Special Education, FGEI, Directorate, Ministry of Defence.	Second Class or Grade 'C' Master's or Bachelor's (4 years duration) degree in Special Education from a University recognized by the HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Grammar Usage, Sentence Structuring Part-II (Special Education) <ul style="list-style-type: none"> • Introduction to Special Education • Basic Models of Rehabilitation, • The Nature of Child Development, • Classification System of Exceptionalities, • IDD (Mental Retardation), • Learning Disability, • Emotional or Behavioral Disorders, • Gifted Children, • Speech and Language Disorders, • Hearing and Visual Impairment, • Physical Disabilities

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/ Experience for the Posts	Test Specification	Topics of Syllabi
25.	82/2025	Data Processing Assistant (BS-16) , Federal Public Service Commission.	Second Class or Grade 'C' Bachelor's Degree in Computer Science or Information Technology or equivalent qualification from a University recognized by the HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> Arithmetic Logical Unit, Memory (RAM, ROM) Types of RAM, Ports, etc. Input and Output Devices, Use of Microsoft Office (MS Word, MS Excel only) Application and System Software, Electronic Data Processing Management Information System Storage and Multimedia, Network & Security Issues, Relational Database Management System (RDBMS),
26.	84/2025	Civilian Medical Practitioner (CMP) Grade-III (BS-17) , Ordnance Corps, OS Directorate GHQ, Ministry of Defence.	MBBS or equivalent qualification recognized by the PMDC.	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"> Core courses of MBBS Degree Program. Health Policies of the Government of Pakistan. Care vs Cure for Health Management. Major Challenges being faced by the Health Sector in Pakistan.
27.	85/2025	Finance and Accounts Officer (BS-17) , Gilgit Baltistan Secretariat, Ministry of Kashmir Affairs and Gilgit Baltistan.	Second Class or Grade 'C' Master's degree in Commerce / Accounting & Finance/ Economics/ Business Administration (Finance / Accounting & Finance / Banking) or equivalent qualification from a University recognized by the HEC. OR Final Examination Certificate awarded by Institute of Cost & Management Accountants of Pakistan (ICMAP) or Institute of Chartered Accountants of Pakistan (ICAP) / Membership of the Association of Chartered Certified Accountants (ACCA), UK.	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"> Human Resource Management Financial Accounting Financial Management Civil Servants Act, 1973 and Rules made thereunder as amended Rules of Business, 1973 as amended System of Financial Control and Budgeting Public Procurement Rules, 2004 as amended Basic Arithmetic & Computer/IT.

Syllabus for Descriptive Test of**F.4-55/2025-R (Inspector Customs/ Intelligence Officer (BS-16)**Max Marks: 100Qualifying Standard 50%Time Allowed: 3 Hours**Part-I (English Essay): 40 Marks**

Candidates will be required to write an Essay in English comprising **1000 words** from a set of **four given topics**. Candidates are expected to reflect comprehensive knowledge on a selected topic. Candidate's articulation, expression and technical approach to the style of English Essay writing will be examined.

Part-II (Current Affairs): 30 Marks

Candidates will be expected to demonstrate knowledge on current affairs related to the following:

- CPEC and Pakistan,
- Kashmir Issue,
- Pak US relations
- Afghanistan Crisis

Part-III (Islamic Studies/Pakistan Studies): 30 Marks**I. Islamic Studies**

Introduction to Islam, Seerah of the Prophet Muhammad (PBUH) as Role Model, Status of Woman in Islam, Articles of Faith, Islamic Code of Life, Islamic Concept of Human Rights

II. Pakistan Studies

Parliamentary democracy in Pakistan under 1973 Constitution, Salient features of the Constitution of Pakistan 1973, Economic Challenges for Pakistan, Major social problems of Pakistan.

SUGGESTED READINGS

S.No.	Title	Author
1.	Pakistan and World Affairs	Shamshad Ahmad (Edition-2015)
2.	Constitution of Pakistan 1973	
3.	Kashmir in Conflict: India, Pakistan and the Unending War.	Schofield, Victoria. New York: I.B.Tauria, 2003.
4.	Modern South Asia: History, Culture, Political Economy.	Jalal, Aisha and Bose, Sugata. New York: Routledge, 1998.
5.	Federalism and Ethnic Conflict Regulation in India and Pakistan.	Adeney, Katharine. , New York: Palgrave Macmillan, 2007.
6.	Pakistan's Energy Sector: From Crisis to Crisis-Breaking the Chain	Zaid Alahdad
For Islamic Studies		
7.	Introduction to Islam	Dr. Hamidullah
8.	Islam: its meaning and Message	Khurshid Ahmad
9.	Insan e Kamil	Dr Khalid Alvi
10.	Islami Tehzeeb Kay Chund Darakhshan Pehloo	Mustafa Sabali

**Schemes and Syllabi for Written Examination (Descriptive) for Posts in
BS-20 advertised under Consolidated Advertisement No. 02/2025**

Case No.	F.4-53/2025-R
Particulars of post	Chief (BS-20) , Agriculture Policy Institute, Ministry of National Food Security & Research.
Minimum Qualification & Experience:	<p>i. Ph.D. in Agriculture Economics/ Economics from a University recognized by the HEC.</p> <p>ii. Thirteen (13) years post qualification experience of Agriculture Policy Planning and Analysis.</p> <p align="center">OR</p> <p>i. M. Phil in Agriculture Economics/ Economics from a University recognized by the HEC.</p> <p>ii. Fifteen (15) years post qualification experience of Agriculture Policy Planning and Analysis.</p> <p align="center">OR</p> <p>i. Second Class or Grade 'C' Master's degree in Agriculture Economics/ Economics or equivalent qualification from a University recognized by the HEC.</p> <p>ii. Seventeen (17) years post qualification experience of Agriculture Policy Planning and Analysis.</p>

PAPER: PROFESSIONAL (100 MARKS)

Analysis Paper: Candidates will be required to analyse a situation related to advertised post and suggest/draw suitable solution comprising approximately **1000 words**. Candidate's research based knowledge as well as articulation, expression and technical treatment of the situation will be examined.

OR

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

Schemes and Syllabi for Written Examination (Descriptive) for All Posts in BS-18 & BS-19 (other than Doctors) included in Consolidated Advertisement No. 02/2025

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 précisising and suggesting an appropriate title.
- Reading Comprehension (10 marks):** A selected passage that is rich in substance but not very technical or discipline-specific shall be given, followed by five questions, each carrying 2 marks.
- Grammar and Vocabulary (10 marks):** Correct usage of Tense, Articles, Prepositions, Conjunctions, Punctuation, Phrasal Verbs, Synonyms and Antonyms etc.
- Sentence Correction (5 marks):** Ten sentences shall be given each having a clear structural flaw in terms of grammar or punctuation. The candidates shall be asked to rewrite them with really needed correction only, without marking unnecessary alterations. No two or more sentences should have exactly the same problem, and 2-3 sentences shall be based on correction of punctuation marks.
- Grouping of Words (5 marks):** A random list of ten words of moderate standard (neither very easy nor utterly unfamiliar) shall be given, to be grouped by the candidates in pairs of those having similar or opposite meaning, as may be clearly directed in the question.
- Pairs of Words (5 marks):** Five pairs shall be given of seemingly similar words with different meanings, generally confused in communication, for bringing out the difference in meaning of any five of them by first explaining them in parenthesis and then using them in sentences.
- Translation (5 marks):** Ten short Urdu sentences involving structural composition, significant terms and figurative/idiomatic expressions shall be given, to be accurately translated in English.

SUGGESTED READINGS

Sr. No.	Title	Author
1.	English Grammar in Use	Raymond Murphy
2.	Practical English Usage	M. Swan
3.	Practical English Grammar and Composition	S.C. Gupta
4.	Improve your Punctuation & Grammar	Marion Field
5.	The Little, Brown Handbook	H. Ramsey Flower & Jane Aaron
6.	A University English Grammar	R. Quirk & S. Greenbaum
7.	Write Better, Speak Better	Readers Digest Association
8.	Modern English in Action	Henry Christ
9.	Exploring the World of English	Syed Saadat Ali Shah

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

Case No.	F.4-39/2025-R
Particulars of post	Research Officer, Grade-I (BS-18) , Armed Forces Institute of Nutrition (AFIN), GHQ, Ministry of Defence.
Minimum Qualification & Experience:	M.Sc. Chemistry (1 st Class) with at least three (3) years post qualification experience of directing research / analysis in the capacity of an officer in Government Industrial Laboratory OR Ph.D. in Chemistry.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

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

- I. Atomic structure.—Quantum theory, Schrodinger equation, Particle in box, hydrogen atom. Hydrogen molecule ion, hydrogen molecule. Theories of hydrogen and metallic bonding.
- II. Electrochemistry.—Ionic equilibria, theory of strong electrolytes; Debye-Huckel theory of activity coefficients, galvanic cells, membrane equilibria and fuel cells. Theories of Acids and Bases, glass electrode, measurement of pH. Electrolysis, overvoltage and corrosion.
- III. Thermodynamics.—First law of thermodynamics, internal energy, enthalpy functions. Thermochemistry, Entropy and second law of Thermodynamics, Free energy and chemical equilibrium.
- IV. Chemistry of Following Elements.—Oxygen, Carbon, Chlorine, Silicon, Nitrogen, Phosphorus.
- V. Inorganic Chemical Industries.—Sulphuric Acid, Fixation of Nitrogen, Chemical Fertilizers, Semi-conductivity devices. Cement, Glass and Ceramics.
- VI. Chemical Kinetics.—Rate law and its determination Order of reaction. Experimental methods. Temperature Dependence of rate constants. Study of mechanism of a few selected reactions (1st and 2nd under reaction only).
- VII. Surface Chemistry and Catalysis.—Physical adsorption and chemisorption. Surface area determination. Homogeneous and Heterogeneous Catalysis. Acid-base and Enzyme Catalysis.
- VIII. Physical Organic Chemistry.—Elements of Organic reaction mechanism. Optical and Geometric Isomerism. Conformational analysis. Resonance. H—Bond and its effects on the properties of Organic Compounds.
- IX. Aromatic Chemistry.—Structure of Benzene with particular reference to Mechanism of Electrophilic Substitution Reactions.
- X. Chemistry of Natural Products.—Elementary study of Carbohydrates. Oils and Fats. Alkaloids and Vitamins.
- XI. Industrial Organic Chemistry.—Organic Polymers. Fermentation processes including preparation of Anti-Biotics. Petro-Chemical Industry.

Part-III: 25 Marks (Descriptive)

(Human Resource, Financial Management and Quality Management)

I. Human Resource and Financial Management

Definition, Significance and Scope of Human Resource Management; Organization—Types of Organization, Principles of Organization, Public Sector Enterprises; Approaches to Human Resource Management. Personnel Administration—Tools of Personnel Management: Selection, Training, Promotion, Compensation, Discipline; Communication, Communication Channels and Principles of Public Relations; Elements of Financial Administration, Principles of Budgeting, Auditing and Accounting.

II. Basic Concept of Quality Management

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

SUGGESTED READINGS

S. No.	Title	Author
1.	Advanced Inorganic Chemistry 3 rd Ed.	Cotton. F.A. and Wilkinson Groffrey
2.	Inorganic Chemistry, 3 rd Ed. 1983	Huheavy, 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.	Human Resource Management	H.T.Graham & Roger Bennett
7.	Management	James A.F.Stoner, R.Eward Freeman, Daniel R.Gilbert Jr.

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

Case No.	F.4-46/2025
Particulars of post	Principal/Matron/Nursing Supervisor (BS-18) , Health Department GB, Ministry of Kashmir Affairs & Gilgit Baltistan
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Master's or Bachelor's (4 years duration) degree in Nursing or equivalent qualification from a University / Institute recognized by the PNC / HEC. ii. Five (5) years post qualification experience in the relevant field. iii. Valid Registration with the PNC.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (Nursing) (Subjective): 50 Marks**I. Fundamental of Nursing**

History of Nursing & Development of Nursing, Role of the Nurse in Health Care, Goals of Nursing and Related Concepts, Communication, Nursing Skills (Vital Signs), Skin Management, Concept of Safety: Risk Management, Concept of Teaching and Learning, Oxygenation: Respiratory Function and Cardiovascular System, Nursing Process, Concept of Value Belief, Self Concept and Self Perception, Concept of Nutrition and Dietary, Human Responses to Illness, Concepts of Stress & Coping

II. Community Health Nursing

Introduction to Community Health Nursing, Primary Health Care (PHC), Health Care Delivery System in Pakistan, International Health Organizations and Nursing Organizations, Health Education, Introduction to Home Visiting

III. Critical Care Nursing

Conceptual foundations in critical care nursing, Tools of critical care, Emergency nursing

IV. Teaching and Learning: Principles and Practices

Reflective Writing and Critical Thinking, Stages in Learning, Physical Environment and Well Being, Learning Cycle, Models and Learning Styles, Learning Theories and Characteristics, Health Education/Health Promotion, Lesson Planning,

Part-III: 25 Marks (Descriptive)

(Human Resource, Financial Management and Quality Management)

I. Human Resource and Financial Management

Definition, Significance and Scope of Human Resource Management; Organization—Types of Organization, Principles of Organization, Public Sector Enterprises; Approaches to Human Resource Management. Personnel Administration—Tools of Personnel Management: Selection, Training, Promotion,

Compensation, Discipline; Communication, Communication Channels and Principles of Public Relations; Elements of Financial Administration, Principles of Budgeting, Auditing and Accounting.

II. Basic Concept of Quality Management

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

SUGGESTED READINGS

S. No.	Title	Author
1.	Fundamentals of Nursing: Standards and Practice.	Delaune, S. C., & Ladner, P. K. (2002).
2.	Fundamentals of Nursing: Concepts, Process and Practice	Erb, G. K., B. (2000).
3.	Basic Nursing: Essentials for Practice	Potter, P. A & Perry, A. G. (2003).
4.	Fundamentals of Nursing: Human Health and Function	Craven, R. F., & Hirnle, C. J. (2000).
5.	Community Health Nursing: Concepts and practice	Allender, J. A., Spradley, B. W. (2000).
6.	Community medicine and public health	Ansari. I. M., (2003) (6th ed)
7.	Textbook of medical-surgical nursing	Smeltzer, S. C., & Bare, B. G. (2000).
8.	Medical surgical nursing (4th ed.) Critical thinking for collaborative care	Ignatavicius, D., & Workman, M. (2002).
9.	Teaching strategies for nurse educators	De Young, S. (2003).
10.	Clinical supervision: A practical guide	Ooijen, V. E. (2000)
11.	Human Resource Management	H.T.Graham & Roger Bennett
12.	Management	James A.F.Stoner, R.Eward Freeman, Daniel R.Gilbert Jr.

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

Case No.	F.4-50/2025
Particulars of post	Librarian (BS-18), AFIC/NIHD, Ministry of Defence.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Master's Degree in Library Science/ Library and Information Science or equivalent qualification from a University recognized by HEC. ii. Five (5) years post qualification experience in the relevant field.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

Part-II: (Library/Information Science) 75 Marks**I. Use of Emerging Technologies in Library**

Information and other Library Technologies. Hardware. Software. Operating System. Telecommunications and Networks. Internet and the www, Barcode Technology, Wireless Technology and Virtual Private Network (VPN). Social Networking. Email. Word Processing. Spreadsheets. Presentation Software. Desktop Publishing. Databases. Library Security Systems. Tele-lifts. Digitization Hardware and Software. Reprographic Technology.

II. Organization of Information

Systems for Organization of Information: Environments, Storage and Retrieval Tools, Encoding Standards, Cataloguing Codes, Current Systems. The Information Organization Process: Surrogate/ Metadata Records: Description, Access; Authority Control. Subject Access: Analysis, Verbal Subject Approaches, Classification. Organization and Administration: Arrangement, Management Issues. Problems of Information Organization in Pakistan.

III. Basic Reference Sources

Definition. Evaluation Criteria. Bibliographies-- General Bibliographies, Basic Guides To Reference Materials, Library Catalogues; Serials Guides; Indexes and Abstracts; HEC NDL; Dictionaries and Thesauri; Almanacs And Fact Books; Encyclopaedias; Directories; Biographical Sources; Geographical Sources-- Maps, Atlases & Gazetteers; Reference Websites.

IV. Management of Library and Information Services

Basic Theories and Principles of Administration for Effective Management of Public, Academic, and Special Libraries and Information Centres with emphasis on Planning, Organizing, Staffing, Directing, Coordinating, Reporting, and Budgeting. Administrative Aspects of Public and Technical Services, Facilities, Rules and Regulations, Evaluation, Public Relations, Inter-Agency Cooperation, and Change Management. Library Space Management.

SUGGESTED READINGS

S. No.	Title	Author
1.	The Electronic Library.	Rowley, J. (2001).
2.	Role of ICTs in Library and Information Science	A. Kaliammal & G. Thamaraiselvi
3.	Discovering computers 2007: A gateway to information.	Shelly, G. B., Cashman, T. J., & Vermaat, M. (2007).
4.	Guide to selecting and cataloging quality WWW resources for the small library.	Coleman, A. (2004).
5.	Jadid Catalogue Sazi	Khurshid, Anis (1993)
6.	Reference and information services: An introduction.	Bopp, R. E., & Smith, L. C. (2001).
7.	Introduction to reference work: Vol. 1,	Katz, W. A. (2002).
8.	Management basics for information professionals	Evans, G. E., Layzell Ward, P., Rugaas, B., & Evans, G. E. (2007).
9.	The Practical Library Manager.	Massis, B. E. (2003).

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

Case No.	F.4-52/2025-R
Particulars of post	Assistant Animal Husbandry Commissioner (BS-18), Ministry of National Food, Security & Research.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Master's (Hons) degree in Animal Husbandry or Veterinary Science with a basic degree in Veterinary Science i.e. Doctor of Veterinary Medicine (DVM) or equivalent qualification from a University recognized by HEC. ii. Five (5) years post qualification experience of work in any field of Animal Husbandry/ Veterinary Science.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

Part-II (Professional) (Subjective) : 75 Marks**I. Veterinary Protozoology**

Protozoology: definition, history and differences from other unicellular organisms, Anatomy and physiology of protozoa, Classification, Morphology, Life cycle, Pathogenesis, Diagnosis and Control of the species of the following genera of Protozoa, Trypanosoma / Leshmania, Trichomonias and Histomonas, Entamoeba, Giardia and Balantidium, Eimeria and Isospora, Toxoplasma and Sarcocystis, Toxoplasmosis and Sarcocystosis and Plasmodium, Plasmodium, Haemoproteus, Leucocytozoan and Hepatozoan, Babesia, Theileria, Anaplasma & Cryptosporidium, Ehrlichia & Eperythrozoon, Protozoan zoonosis.

II. Systemic Veterinary Pathology

Digestive system, Skin and Appendages, Dermatophytes (Ring Worms), Mange: Psoroptic, chorioptic mange, neoplasia, Urinary system, Cardiovascular system, Nervous system, Respiratory system, Musculo-skeleton system, Rickets, Osteomalacia, Osteodystrophy, Osteoporosis, Osteopetrosis, Exostoses, neoplasia, Reproductive System, Postparturient Haemoglobinuria,

III. Small Ruminant Production

Scope and role of small ruminants, Sheep and goat as milch, meat and wool/hair producer. Grazing management systems and supplementary feeding, Management during drought, Record keeping of sheep and goat, Fencing on ranges, Shearing and handling wool/hair,

IV. Ruminant Nutrition

Nutrients, their classification and requirements, Concept of forage, concentrate and non-conventional feed resources in feeding of ruminants, Feeding standards, their usefulness and limitations for large ruminants. Feeding standards, their usefulness and limitations for small ruminants. Nutrient requirements of cattle for maintenance, production and reproduction. Nutrient requirements of buffaloes for maintenance, production and reproduction. Nutrient requirements of sheep for maintenance, production and reproduction, Nutrient requirements of beef animals for maintenance and fattening. Concept of digestibility and nitrogen balance. Feeding management of dairy animals at different physiological stages, Feeding practices of small ruminants, Nutritional management of grazing livestock, Feeding of calves from birth to puberty.

V. Meat Production

Scope and importance of meat production in Pakistan, Present situation of meat industry and Problems of meat industry in Pakistan, Feeding of beef Animals, Breeding of beef Animals, Management of Beef Animals, Feed additives, hormones and Probiotics, Vitamins etc for enhanced growth Antibiotics, Factors affecting carcass and meat quality, Meat Hygiene, Storage and Preservation of Meat, Marketing of beef animals and beef, Modern Slaughter Houses, Slaughtering Methods.

SUGGESTED READINGS

S. No.	Title	Author
1.	General Parasitology and Protozoology.	Akhtar, M., M. A. Hafeez and C. S. Hayat 2003.
2.	Techniques in Parasitology. Higher Education Commission, Pakistan	Iqbal, Z., M.S. Sajid, A. Jabbar, Z.A. Rao and M.N. Khan, 2006.
3.	Introduction to Veterinary Pathology.	Cheville, N. F., 2006.
4.	Pathologic Basis of Veterinary Disease	McGavin, D. M. and J. F. Zachary, 2006.
5.	Sheep and Goat Production, Univ. of Agriculture, Faisalabad.	Khan, B.B., A. Iqbal and M.I. Mustafa. 2003.
6.	Recent Advances in Ruminant Nutrition.	Garnsworthy and J. Wiseman. 2002.
7.	Commercial Poultry Nutrition,	Lesson, S. and J.D. Summers. 2001.
8.	Feed Manufacturing Technology	McEllihiney, R.R. 1994.
9.	Dictionary of Animal Nutrition and Feed Technology,.	Singhal, K.K. 1992.
10.	Meat Production and Technology in Pakistan, PARC, Islamabad.	Alvi, A.S. 1991.
11.	Meat Hygiene and Inspection.	Anwar, A.H. 1996.
12.	Meat Hygiene. Bailliere Tindall, UK.	Gracey, J. F. and Collins D.S. 1992

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

Case No.	F.4-58 (A)/2025-R
Particulars of post	Assistant Professor (Male) (Biology) (BS-18), Federal Government Educational Institutions (FGEI) (Cantts/ Garrisons), 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: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (Biology) (Subjective)**50 Marks****I. Anatomy and Embryology**

- Primary and secondary tissues. Meristems. Secondary growth in dicot stem. Anatomy of leaf, stem and root.
- Micro and mega sporogenesis, pollination mechanism, fertilization, development of Embryo and Endosperm, Seed dispersal.

II. Plant Physiology

- Plant water relations, Osmotic Quantities, component potentials of water and their role in transport, water absorption by roots, transpiration. Role of essential mineral elements and their uptake. Plant hormones. Photoperiodism, Vernalization. Dormancy and Seed germination. Enzymes.
- Photosynthesis: Plant pigments, Light reaction, CO₂ fixation, Mechanism of photophosphorylation.
- Respiration: Glycolysis, Krebs cycle, Mechanism of oxidative phosphorylation.

III. Genetics & Evolution

- Mendelian Genetics, Multiple Alleles, Polygenic inheritance, Gene interaction, Epistasis and pleiotropy, Sex-linked inheritance, Chromosomal aberrations, Mutations, DNA repair.
- Evolution of life, Convergent Evolution, Divergent Evolution, Parallel Evolution and Natural selection

IV. Molecular Biology

- Nucleic acids, DNA as hereditary material, DNA replication, Transcription, Genetic code, Protein synthesis, Genetic engineering and its application, Genetically Modified Organisms (GMO).

V. Animal Form and Function

- Protection, Support and Movement: Integumentary system of invertebrates and vertebrates; Animal muscles: the muscular system of invertebrates and vertebrates.

- Digestion and Nutrition: Feeding mechanism, Digestion, Organization and regional function of alimentary canal, Regulation of food intake, Nutritional requirements
- Internal Fluids and Respiration: Internal fluid environment, Composition of blood, Circulation and respiration mechanisms

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

I. Development of Curriculum and Instructional Material

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

II. Process of Teaching and Teaching Strategies

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

III. Educational Assessment and Evaluation

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

IV. Research Methods in Education

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

SUGGESTED READINGS

S. No.	Title	Author
1.	Comparative Morphology of the Vascular Plants	Foster, A.S. and E.H. Gifford.
2.	Genetics: A Conceptual Approach.	Pierce, B. A.
3.	Molecular Cell Biology	Lodish, H., A. Berk, S.L. Zipursky, P. Matsudaira, D. Baltimore and J. Darnell
4.	Ilmi Biomolecules, Cell Biology and Genetics.	Cheema, T.A. and Cheema Z.T. 2009
5.	Growth and Differentiation in Plants	Phillips and Wareings
6.	Animal behavior:- An Evolutionary Approach	John Alcock
7.	Biology	Campbell, N.A.
8.	Research in Education	JW Best
9.	Integrating Education Technology into Teaching	Roblyer
10.	Curriculum Development	S. M. Shahid
11.	Educational Measurement and Evaluation	S. M. Shahid
12.	Educational Administration	S. M. Shahid

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

Case No.	F.4-58 (B)/2025-R
Particulars of post	Assistant Professor (Male) (Botany) (BS-18), Federal Government Educational Institutions (FGEI) (Cantts/ Garrisons), 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: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (Botany) (Subjective)**50 Marks****I. Algae, Fungi and Bryophytes**

- Phycology: Distribution, Classification, Structure, Life History and Economic importance of the main groups of Algae.
- Mycology and Plant Pathology: Structure, Reproduction, Classification and Economic importance of the main groups of Fungi. Diseases of economically important crops and general principles of their control
- Bryology: Structure and reproduction of bryophytes, Evolution of Gametophyte and Sporophyte.

II. Anatomy and Embryology

- Primary and secondary tissues. Meristems. Secondary growth in dicot stem. Anatomy of leaf, stem and root.
- Micro and megasporogenesis, pollination mechanism, fertilization, development of Embryo and Endosperm, Seed dispersal.

III. Plant Physiology

- Plant water relations, Osmotic Quantities, component potentials of water and their role in transport, water absorption by roots, transpiration. Role of essential mineral elements and their uptake. Plant hormones. Photoperiodism, Vernalization. Dormancy and Seed germination. Enzymes.
- Photosynthesis: Plant pigments, Light reaction, CO₂ fixation, Mechanism of photophosphorylation.
- Respiration: Glycolysis, Krebs cycle, Mechanism of oxidative phosphorylation.

IV. Ecology

- Influence of climatic, edaphic and biotic factors on plant growth. Vegetation sampling techniques. Concepts of ecosystems and their productivity, ecological energetics, Pyramids (of numbers, biomass and energy), trophic levels, food chains and food webs. Biogeochemical cycles (Hydrological and Nitrogen). Succession.
- Causes and reclamation of soil salinity and water logging in Pakistan. Soil erosion, its control and soil conservation methods. Deforestation. Biodiversity conservation. Pollution.

V. Cytology

- Cell cycle, cellular morphology, chemistry of cell wall and cell membrane, cell to cell communication, plant tissue and cell culture, cell senescence and cell death.
- Ultra-structure of various cell organelles: Mitochondria, Golgi bodies, Endoplasmic reticulum, Plastids, Ribosomes, Glyoxysomes, Vacuoles, Nucleus.

VI. Molecular Biology

- Nucleic acids, DNA as hereditary material, DNA replication, Transcription, Genetic code, Protein synthesis, Genetic engineering and its application, Genetically Modified Organisms (GMO).

Part-III (Professional) (Subjective) : 25 Marks**I. Development of Curriculum and Instructional Material**

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

II. Process of Teaching and Teaching Strategies

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

III. Educational Assessment and Evaluation

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

IV. Research Methods in Education

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

SUGGESTED READINGS

S. No.	Title	Author
1.	Cryptogamic Botany-Algae and Fungi	Smith, G. M. 2001
2.	Cryptogamic Botany-Bryophyte and Pteridophyte	Smith, G. M. 2001
3.	Plant and Environment	Daubermine, R, F, 1974
4.	Plant Taxonomy and Biosystematics	Stac, C. A. 1980
5.	Plant Physiology	Taiz, L. & E. Zeiger 2006
6.	Genetics: A Conceptual Approach. 4 th edition	Pierce, B. A. 2012
7.	Concepts of Genetics. 10 th edition	William S. Klug. 2012
8.	Ilmi Biomolecules, Cell Biology and Genetics.	Cheema, T.A. and Cheema Z.T. 2009
9.	Morphology of Plants	Malik, T. A. 2006
10.	Fundamentals of Ecology	Odum, E.P. and Barrett, G.W. 2004
11.	Advanced Plant Taxonomy	Mondal, A. K., 2009
12.	Growth and Differentiation in Plants	Phillips and Wareings
13.	Research in Education	JW Best
14.	Integrating Education Technology into Teaching	Roblyer
15.	Curriculum Development	S. M. Shahid
16.	Educational Measurement and Evaluation	S. M. Shahid
17.	Educational Administration	S. M. Shahid

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

Case No.	F.4-58 (C)/2025-R
Particulars of post	Assistant Professor (Male) (Business Administration) (BS-18), Federal Government Educational Institutions (FGEI) (Cantts/Garrisons), 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: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (Business Administration) (Subjective)**50 Marks****I. Introduction to Management**

- Introduction to Management
- The History and evaluation of Management
- Organizational theories and different approaches to management
- Foundations and basic elements of Planning
- Effective strategic planning
- Decision Making
- Decision making process
- Strategic management process

II. Financial Accounting

- Accounting for companies
- Accounting for Issuance of shares
- Company final Accounts
- Accounting for Dividends
- Accounting for Bonds and Debentures
- Preparation and Interpretation of Cash Flow
- Important IAS and FRS
- Analysis of Financial Statements
- Accounting for consolidated statements.

III. Introduction to HRM

- Meeting present human resource requirements
- Emerging Human resource management challenges.
- Trends in HRM
- Global vs local HRM practices
- HRM from Islamic and indigenous perspective
- Basic Islamic philosophy of managing human resource
- HR Planning

IV. Marketing Management

- Marketing: An Overview
- Marketing Information Systems.
- Consumer Markets and Consumer Behavior Analysis

- STP Marketing
- Product Markets Strategies
- Pricing Strategies and Policies
- Marketing Channel Decisions

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

- I. Development of Curriculum and Instructional Material**
 - Elements of Curriculum.
 - Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives, Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials.
- II. Process of Teaching and Teaching Strategies**
 - Process of Classroom Communication
 - Factors affecting Classroom Communication
 - Barriers to Classroom Communications
 - Use of Instructional Materials and Media
- III. Educational Assessment and Evaluation**
 - Concept of Classroom Assessment and Evaluation
 - Distinction between Assessment, Evaluation and Measurement
 - Approaches to Evaluation: Formative Evaluation; Summative Evaluation
 - Types of Test: Essay Type; Objective Type: Multiple Choice, True-False Items, Matching Type; Principles of Construction of these Test
 - Characteristics of a Good Test: Validity, Reliability, Objectivity, Usability
- IV. Research Methods in Education**
 - Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
 - Research Proposal and Report Writing.

SUGGESTED READINGS

S.No.	Title	Author
1.	Management	Mary Coulter & Robbins
2.	Managing Human Resources.	Luis R. Gomez Mejia, David B. Balkin, Robert L. Cardy
3.	Financial & Managerial Accounting,	Williams, Haka, Bettner:
4.	Financial Accounting	Professor Muhammad Ammanullah Khan
5.	Marketing Management, Analysis, Planning, Control	Philip Kotler,
6.	Fundamentals of Marketing	William J. Stanton & Charles Futrell
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.4-58 (D)/2025-R
Particulars of post	Assistant Professor (Male) (Economics) (BS-18), Federal Government Educational Institutions (FGEI) (Cantts/ Garrisons), 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: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (Economics) (Subjective)**50 Marks****I. Micro Economics**

Consumer behaviour, Determination of market demand and supply i.e. concept of elasticity of Demand & Supply, Static, Comparative Static Analysis, Distinction between partial and general equilibrium analysis (basic level) theory of the Firm, Producer's equilibrium, Pricing factors of production

II. Macro Economics

Basic Economic Concepts, National Income Accounting, Consumption Function, Multiplier, Accelerator, Component of Aggregate Demand, Labour Demand and Supply, Un-Employment, Determination of equilibrium level of income and output (at least with reference to two or three school of thought), Inflation.

III. Public Financing

Government expenditure, Sources of Government Revenue, Privatization, Taxes and non-taxes, Incidence of different taxes, Public Debt, Objectives, methods of repayment, Deficit financing, General Equilibrium Analysis, Welfare Economics, Fiscal Policy.

IV. Role of Foreign Trade and Aid in Economic Development

Trends in Pakistan's Balance of Payments, Terms of Trade, Changes in direction of trade, Trends in Pakistan's major exports and imports, Causes of significant changes in the trends, the role of migration and remittances in Pakistan's economy, costs and benefits of Foreign Aid, Role of Foreign Investment.

V. Major Issues in Pakistan Economy

Energy crisis, Corruption, Bad governance, External debt accumulation and dependency, Unemployment, Income inequality, Inflation, Fiscal and trade deficits, Balance of payment issues, Shortage of irrigation water.

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

- I. Development of Curriculum and Instructional Material**
 - Elements of Curriculum.
 - Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives, Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials.
- II. Process of Teaching and Teaching Strategies**
 - Process of Classroom Communication
 - Factors affecting Classroom Communication
 - Barriers to Classroom Communications
 - Use of Instructional Materials and Media
- III. Educational Assessment and Evaluation**
 - Concept of Classroom Assessment and Evaluation
 - Distinction between Assessment, Evaluation and Measurement
 - Approaches to Evaluation: Formative Evaluation; Summative Evaluation
 - Types of Test: Essay Type; Objective Type: Multiple Choice, True-False Items, Matching Type; Principles of Construction of these Test
 - Characteristics of a Good Test: Validity, Reliability, Objectivity, Usability
- IV. Research Methods in Education**
 - Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
 - Research Proposal and Report Writing.

SUGGESTED READINGS

S. No.	Title	Author
1.	A Text-book of Economics Theory	Stonier & Hague
2.	Government Finance—An Economic Analysis	Due John, F.
3.	Microeconomic	Ferguson, C.E. & Gould, J.P., Nicholson, Mankiw
4.	Macroeconomics	Rudigar Dorubush and Stanley Fisher Blanchard
5.	Foreign Aid Theory and Practice in Southern Asia	Wolf, Jr. DC
6.	History of International Trade	Findlay, R and O' Rourke, K
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.4-58 (E)/2025-R
Particulars of post	Assistant Professor (Male) (International Relations) (BS-18), Federal Government Educational Institutions (FGEI) (Cantts/Garrisons), 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: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (International Relations) (Subjective)**50 Marks**

- I. **International Relations:** History of International Relations: Post WWII Period, Foreign Policy of Pakistan: National Interests and Major Determinations (i-e Size/ Geography, Economic Development, Security, Advancement in Technology, National Capacity, Political Parties/Leadership, Ideology, National Interest, Role of Press/Bureaucracy, Social Structure, Public Opinion, Diplomacy.
- II. **Strategic Approach to International Relation:** War: Causation of War, Total War, Limited War, Asymmetric Warfare, civil war, Guerrilla war, Strategic Culture: Determinants of Pakistani Strategic Culture, Deterrence: Theory and practice with special reference to Nuclear India and Pakistan
- III. **International political community:** Nationalism, Internationalism, Globalization
- IV. **International and Regional Organizations:** League of Nation, United Nations, Regional Organizations, EU, ASEAN, NAFTA, SAARC, SCO, OIC, ECO, WTO, Reforms in the United Nations, World Bank and the IMF
- V. **Forms of Government:** Monarchy, Democratic, Dictatorship, Totalitarian/ Authoritarian, Unitary, Federal, Confederation, Presidential and Parliamentary
- VI. **Local Self Government:** Theory and practice of Local Self-Government with special reference to Pakistan, Comparative analyses of systems of local governance, Public Administration and Public Policy
- VII. **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 amendments,

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-III (Professional) (Subjective) : 25 Marks

- I. **Development of Curriculum and Instructional Material**
 - Elements of Curriculum.
 - Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives, Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials.
- II. **Process of Teaching and Teaching Strategies**
 - Process of Classroom Communication
 - Factors affecting Classroom Communication
 - Barriers to Classroom Communications
 - Use of Instructional Materials and Media
- III. **Educational Assessment and Evaluation**
 - Concept of Classroom Assessment and Evaluation
 - Distinction between Assessment, Evaluation and Measurement
 - Approaches to Evaluation: Formative Evaluation; Summative Evaluation
 - Types of Test: Essay Type; Objective Type: Multiple Choice, True-False Items, Matching Type; Principles of Construction of these Test
 - Characteristics of a Good Test: Validity, Reliability, Objectivity, Usability
- IV. **Research Methods in Education**
 - Research Instruments: Questionnaire; Interview; Test; Observation; Rating Scale
 - Research Proposal and Report Writing.

SUGGESTED READINGS

S. No.	Title	Author
1.	International Politics: A Framework for Analysis	Holsti, K.J.
2.	Foreign Policy Making Process: A Case Study of Pakistan	Moonis Ahmar, ed
3.	Pakistan's Foreign Policy : An Historical Analysis	S.M. Burke
4.	Constitutional Developments in Pakistan	G.W.Choudhury,
5.	Pakistan Foreign Policy: An Overview 1947-2004 (PILDAT)	Hasan Askari Rizvi
6.	The Political System of Pakistan,	K.B.Sayeed,
7.	Politics and the State in Pakistan	Muhammad Waseem,
8.	Government and Politics in Pakistan	Mushtaq Ahmad
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.4-58 (F)/2025-R
Particulars of post	Assistant Professor (Male) (Mathematics) (BS-18), Federal Government Educational Institutions (FGEI) (Cantts/ Garrisons), 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: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (Mathematics) (Subjective)**50 Marks****I. Vector Calculus**

Vector algebra; scalar and vector products of vectors; gradient divergence and curl of a vector; line, surface and volume integrals; Green's, Stokes' and Gauss theorems.

II. Statics

Composition and resolution of forces; parallel forces and couples; equilibrium of a system of coplanar forces; centre of mass of a system of particles and rigid bodies; equilibrium of forces in three dimensions.

III. Dynamics

- Motion in a straight line with constant and variable acceleration; simple harmonic motion; conservative forces and principles of energy.
- Tangential, normal, radial and transverse components of velocity and acceleration; motion under central forces; planetary orbits; Kepler laws;

IV. Ordinary differential equations

- Equations of first order; separable equations, exact equations; first order linear equations; orthogonal trajectories; nonlinear equations reducible to linear equations, Bernoulli and Riccati equations.
- Equations with constant coefficients; homogeneous and inhomogeneous equations; Cauchy-Euler equations; variation of parameters.
- Ordinary and singular points of a differential equation; solution in series; Bessel and Legendre equations; properties of the Bessel functions and Legendre polynomials.

V. Modern Algebra

- Group, subgroups, Lagrange's theorem, Cyclic groups, Normal subgroups, Quotient groups. Fundamental theorem of homomorphism. Isomorphism theorems of groups, Inner automorphisms. Conjugate elements, conjugate subgroups. Commutator subgroups.
- Ring, Subrings, Integral domains, Quotient fields, Isomorphism theorems, Field extension and finite fields.

- Vector spaces, Linear independence, Bases, Dimension of a finitely generated space. Linear transformations, Matrices and their algebra. Reduction of matrices to their echelon form. Rank and nullity of a linear transformation.
- Solution of a system of homogeneous and non-homogeneous linear equations. Properties of determinants.

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

I. Development of Curriculum and Instructional Material

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

II. Process of Teaching and Teaching Strategies

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

III. Educational Assessment and Evaluation

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

IV. Research Methods in Education

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

SUGGESTED READINGS

S. No.	Title	Author
1.	An Introduction to Vector Analysis	Khalid Latif,
2.	Introduction to Mechanics	Q.K. Ghor
3.	An Intermediate Course in Theoretical Mechanics	Khalid Latif,
4.	Differential Equations with Boundary Value Problems	D. G. Zill and M. R. Cullen
5.	Elementary Differential Equations	E.D. Rainville, P.E. Bedient and R.E. Bedient
6.	Mathematical Methods	S. M. Yousaf, Abdul Majeed and Muhammad Amin
7.	Topics in Algebra	Herstein, I.N.
8.	Research in Education	JW Best
9.	Integrating Education Technology into Teaching	Roblyer
10.	Curriculum Development	S.M. Shahid
11.	Educational Measurement and Evaluation	S.M. Shahid
12.	Educational Administration	S.M. Shahid

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

Case No.	F.4-58 (G)/2025-R
Particulars of post	Assistant Professor (Male) (Physics) (BS-18), Federal Government Educational Institutions (FGEI) (Cantts/ Garrisons), 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: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

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

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

II. Waves and Oscillation

- Free oscillation with one and two degrees of freedom; forced and damped oscillations and phenomenon of resonance.
- Reflection, Refraction, Interference, Diffraction and Polarization of waves; interferometer and Newton's rings.

III. Heat and Thermodynamics

- Perfect gas and Van der Waals equation; Three Laws of Thermodynamics, internal energy, temperature, entropy. Thermal properties of Simple system production and measurement of low temperatures; Maxwellian distribution of molecular velocities; Brownian motion; Transport phenomena. Classical Maxwell-Boltzmann Statistics and its application.

IV. Electricity and Magnetism

- Gauss' law Electric potential and Poisson and Laplace's equation Dielectric medium and Polarization; Ampere's law; Vector potential; Magnetic properties of matter; Faraday's law of electromagnetic induction; Maxwell's equations; Poynting theorem and Poynting Vector. Maxwell's equations in integral and differential form.

V. Modern and Quantum Physics

- Operators and quantum states, time dependent and independent Schrodinger equation, angular momentum, wave mechanics, Heisenber's uncertainty relationship and indeterminacy based on commutation properties of operators, Bohr theory and quantum numbers including electron spin; Pauli's exclusion principle; Spectra of simple systems with one or two valence electrons. Lande's g factor and Zeeman effect. Raman effect; Waves and particles and De Broglie's Hypothesis.

VI. Solid State Physics

- Crystal lattice and structure, Bravais lattice, free electron model, Band theory and electron in a periodic potential, Fermi energy and density of states, n and p type semiconductors, physics of the transistor and MOSFET, dielectric properties, magnetic properties and origin of magnetism.

VII. Nuclear Physics

- Structure of Nuclei; Radioactivity, α , β and γ decay. Methods of detection, Phenomenon of fission; reactor and nuclear power, nuclear fusion and its application.

Part-III (Professional) (Subjective) : 25 Marks**I. Development of Curriculum and Instructional Material**

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

II. Process of Teaching and Teaching Strategies

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

III. Educational Assessment and Evaluation

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

IV. Research Methods in Education

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

SUGGESTED READINGS

S. No.	Title	Author
1.	Perspectives of Modern Physics.	A. Beiser.
2.	Fundamentals of Physics.	Halliday & Resnick
3.	Introduction to Electromagnetic Fields and Waves.	D. Corson & P. Lorrain.
4.	Heat and Thermodynamics.	D. Zemansky
5.	Introduction to Quantum Mechanics	D. Griffiths
6.	Modern Physics	Serway, Moses, Moyer.
7.	Solid State Physics	C. Kittel
8.	Research in Education	JW Best
9.	Integrating Education Technology into Teaching	Roblyer
10.	Curriculum Development	S. M. Shahid
11.	Educational Measurement and Evaluation	S. M. Shahid
12.	Educational Administration	S. M. Shahid

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

Case No.	F.4-58 (H)/2025-R
Particulars of post	Assistant Professor (Male) (Psychology) (BS-18), Federal Government Educational Institutions (FGEI) (Cantts/ Garrisons), 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: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (Psychology) (Subjective)**50 Marks**

- I. **Nature and Scope of Psychology:** Definition and scope, Psychology as a Science, Schools, Perspectives, and Models of Psychology, Recent Trends
- II. **Biological Basis of Behaviour:** Nervous System, Neuron and its function, Central and Peripheral Nervous System, Endocrine System
- III. **Motivation and Emotion:** Homeostasis, Factors affecting Motivation, Biogenic and Social Motives, Measurement of Human Motivation, Theories of Motivation, Emotions, Types of Emotions, Physiological changes and Emotion, Theories of Emotion.
- IV. **Personality:** Determinants of Personality, Factors in Development of Personality, Theoretical Perspectives, Traits and Types, Personality Assessment and Techniques, Cross-Cultural Issues.
- V. **Intelligence:** Theories of Intelligence, Types of intelligence (IQ, EQ), Assessing Intelligence
- VI. **Developmental Psychology:** Physical, Cognitive, Social and Emotional development in Childhood, Adolescence, Adulthood and Old Age
- VII. **Abnormal and Clinical Psychology:** Concept and causes of Abnormality, Clinical Assessment and Intervention, Different disorders such as Schizophrenia, Mood disorders, Anxiety disorders, Personality disorders, etc. Psychological treatment including different Therapeutic techniques.

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

- I. Development of Curriculum and Instructional Material**
 - Elements of Curriculum.
 - Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives, Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials.
- II. Process of Teaching and Teaching Strategies**
 - Process of Classroom Communication
 - Factors affecting Classroom Communication
 - Barriers to Classroom Communications
 - Use of Instructional Materials and Media
- III. Educational Assessment and Evaluation**
 - Concept of Classroom Assessment and Evaluation
 - Distinction between Assessment, Evaluation and Measurement
 - Approaches to Evaluation: Formative Evaluation; Summative Evaluation
 - Types of Test: Essay Type; Objective Type: Multiple Choice, True-False Items, Matching Type; Principles of Construction of these Test
 - Characteristics of a Good Test: Validity, Reliability, Objectivity, Usability
- IV. Research Methods in Education**
 - Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
 - Research Proposal and Report Writing.

SUGGESTED READINGS

S.No.	Title	Author
1.	Introduction to Psychology	Atkinson R. C., & Smith, E. E
2.	Development Across the Life Span	Feldman, R.
3.	Abnormal Psychology	Kring, A. M
4.	Psychology	Myers, D. G.
5.	An introduction of theories of personality	Ewen, R. B.
6.	Research in Education	JW Best
7.	Integrating Education Technology into Teaching	Roblyer
8.	Curriculum Development	S.M. Shahid
9.	Educational Measurement and Evaluation	S.M. Shahid
10.	Educational Administration	S.M. Shahid

PAPER-II: PROFESSIONAL

Max Marks: 100

Time Allowed: 3 Hours

Case No.	F.4-58 (I)/2025-R
Particulars of post	Assistant Professor (Male) (Urdu) (BS-18), Federal Government Educational Institutions (FGEI) (Cantts/ Garrisons), 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: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (Urdu) (Subjective)**50 Marks**

- ۱۔ اردو ادب کا مطالعہ
- i۔ اردو زبان و ادب کی اسلامی شناخت
- ii۔ بیسویں صدی کی ادبی تحریکیں
- iii۔ پاکستانی ادب کی اصطلاح: تشکیل و رواج اور ارتقاء
- ۲۔ شعری ادب کا تنقیدی مطالعہ
- الف۔ دور قدیم
- i۔ میر (غزل) - انتخاب میر مولوی عبدالحق
- ii۔ غالب (دیوان غالب)
- iii۔ حالی (مدرس)
- iv۔ اقبال (طلوع اسلام، حضرت راہ، مسجد قرطبہ)
- ب۔ دور جدید
- i۔ فیض (غزل - دست - سپا)
- ii۔ راشد (نظم - ایران میں آبپاشی)
- iii۔ مجید امجد (نظم - شب رفتہ)
- iv۔ ناصر کاظمی (غزل - برگ نئے)
- ۳۔ نثری ادب کا تنقیدی مطالعہ
- الف۔ غیر افسانوی نثر
- i۔ شبلی (سیرت النبی ﷺ، جلد اول)
- ii۔ مولوی عبدالحق (خاکے، چند ہم عصر)
- ب۔ افسانوی نثر
- i۔ منٹو (افسانے، منٹو کے بیس افسانے: مرتب ڈاکٹر انوار احمد، ڈاکٹر اے بی اشرف)
- ii۔ احمد ندیم خاکی (افسانے، کپاس کے پھول)
- iii۔ مشتاق احمد یوسفی (طرز و مزاج، آب گم)

۴۔ تخفیف

۵۔ مضمون

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

- I. **Development of Curriculum and Instructional Material**
 - Elements of Curriculum.
 - Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives, Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials.
- II. **Process of Teaching and Teaching Strategies**
 - Process of Classroom Communication
 - Factors affecting Classroom Communication
 - Barriers to Classroom Communications
 - Use of Instructional Materials and Media
- III. **Educational Assessment and Evaluation**
 - Concept of Classroom Assessment and Evaluation
 - Distinction between Assessment, Evaluation and Measurement
 - Approaches to Evaluation: Formative Evaluation; Summative Evaluation
 - Types of Test: Essay Type; Objective Type: Multiple Choice, True-False Items, Matching Type; Principles of Construction of these Test
 - Characteristics of a Good Test: Validity, Reliability, Objectivity, Usability
- IV. **Research Methods in Education**
 - Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
 - Research Proposal and Report Writing.

SUGGESTED READINGS

- | | |
|----------------------------------|---------------------------------------|
| ڈاکٹر وزیر آغا | ۱۔ تنقید اور جدید اردو تنقید |
| ڈاکٹر انور سدید | ۲۔ اردو ادب کی تحریکیں |
| شیخ محمد اکرام | ۳۔ آب کوثر |
| شیخ محمد اکرام | ۴۔ رو کوثر |
| شیخ محمد اکرام | ۵۔ موج کوثر |
| ڈاکٹر روبینہ شہناز | ۶۔ اردو تنقید میں پاکستانی تصورات |
| مرتب: ڈاکٹر رفیع الدین ہاشمی | ۷۔ قابلیت کے سو سال |
| ڈاکٹر سہیل عمر، ڈاکٹر وحید عشرت | |
| ترتیب نو: ڈاکٹر خواجہ محمد زکریا | ۸۔ تاریخ ادبیات مسلمانان پاکستان وہند |
| مرتب: ڈاکٹر نواز علی | ۹۔ اردو ادب کے پچاس سال |

S.No.	Title	Author
10.	Research in Education	JW Best
11.	Integrating Education Technology into Teaching	Roblyer
12.	Curriculum Development	S. M. Shahid
13.	Educational Measurement and Evaluation	S. M. Shahid
14.	Educational Administration	S. M. Shahid

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

Case No.	F.4-63/2025-R
Particulars of post	Deputy Director (BS-18), Department of Libraries, Ministry of Interior.
Minimum Qualification & Experience:	Second Class or Grade 'C' Master's degree in Library Science or equivalent qualification from a University recognized by HEC.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

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

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

II. Information, Library and Society

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

III. Use of Emerging Technologies in Library

Information and other library technologies. Hardware. Software. Operating system. Telecommunications and networks. Internet and the WWW, barcode technology, wireless technology and virtual private network (VPN). Social networking. Email. Word processing. Spreadsheets. Presentation software. Desktop publishing. Databases. Library security systems. Tele-lifts. Digitization hardware and software. Reprographic technology.

IV. Organization of Information

Historical development of the organization of information. Systems for organization of information: Environments, Storage and Retrieval tools, Encoding standards, Cataloguing Codes, Current systems. The information organization process: Surrogate/Metadata records: Description, Access; Authority control. Subject access: Analysis, Verbal subject approaches, Classification. Organization and administration: Arrangement, Management issues. Problems of information organization in Pakistan.

V. Basic Reference Sources

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

VI. Management of Library and Information Services

Basic theories and principles of administration for effective management of public, academic, and special libraries and information centres, With emphasis on planning,

organizing, staffing, directing, coordinating, reporting, and budgeting. Administrative aspects of public and technical services, facilities, rules and regulations, evaluation, public relations, inter-agency cooperation, and change management. Library space management.

VII. Administrative/Management Skills

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

VIII. Research Methodology

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

SUGGESTED READINGS

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

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

Case No.	F.4-64/2025-R
Particulars of post	Quality Management Representative (BS-18), AFIC / NIHD, Ministry of Defence.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Master's Degree in Health Administration/ Quality Management from a University recognized by HEC. ii. Five (5) years (post qualification) experience of working in hospital management system.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

Part-II (Professional) (Subjective) : 75 Marks**I. Hospital Based Healthcare & Its Changing Scenario**

Concept of Modern Hospital & Privatization in Health Sector, Public Sector Hospitals and Level of care / offered facilities, Effects of Globalization in Health care, Concept of Corporate Hospital in developing countries, Infrastructure and lay out of an ideal corporate hospital, Functioning of modern hospitals & changing need of patients, Hospitality in Hospital Care, Invasive and non-invasive diagnostic facilities in modern hospital, Care offered in Specialty and Super specialty Hospitals

II. Basic Information Technology

Basic concepts about computer Hardware & Software, Working knowledge of commonly used hospital software, Application of Computer in hospitals, Computer programme and operating system, Data Based Concept (ER diagram), Microsoft Office, SQL, V.B., ERP system with all modules, Importance of effective Health Information system, Digital maintenance of Medical Records

III. Principles of Management

History and growth of management science, Traditional management vs. modern health care management , Evolution of management theory, Healthcare management as a profession, Evaluation of Management Concepts, Management components i.e. Planning, Organizing, Staffing, Motivating, Leading, Co-ordination and Controlling, Modern Management concept and its implication in health sector

IV. Quality Management

Quality Management Programme, ISO clauses, quality manual, quality of clinical services, Critical Pathways, Medical Audits, NABL, NABH, JCI, BIS, Performance review – Assessment / Methods , Quality Management of diagnostic facilities, Quality of assurance procedures, Deming's Principles, Juran Trilogy, Kaizen, Philip Crosby's Principles, Management of Social Services. Assessment of Client satisfaction

V. Health Policy and Management

Introduction to Health Management, Strategic Management, Planning, Organization, Monitoring, Evaluation, Pakistan Health Policy 2009, Health Financing, Stewardship, History of Health Policy in Pakistan, Determinants of health policy

SUGGESTED READINGS

S. No.	Title	Author
1.	Guide to Quality Management Systems for the Food Industry	Early, R. 1995.
2.	Training manual on health manpower management	Gourlay R.
3.	Health Care Management	Shortell SM, Kaluzny AD.
4.	Health planning for effective management	ReinkeWA
5.	Understanding primary health care management: from theory to practical reality	Chanawongse K.
6.	Hospital Administration	Tabish
7.	Introduction to Computers	C. Xavier
8.	Computers today	S. K. Basandra
9.	Principles of Management	L. M. Prasad, S. Chand
10.	Management	Peter Drucker
11.	Quality Management	Barnett

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

Case No.	F.4-66/2025-R
Particulars of post	Assistant Chief Pharmacist (BS-18), Defence Division, Ministry of Defence.
Minimum Qualification & Experience:	i) Second Class or Grade 'C' Master's Degree in Pharmacy or equivalent qualification recognized by Pharmacy Council of Pakistan (PCP) and HEC. ii) Five (5) years post qualification experience in relevant field.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II (Pharmacy) (Subjective) : 50 Marks**I. Pharmaceutical Preparations**

Pharmaceutical Calculations, Galenical Preparations: Infusions. Decoctions. Extracts. Fluid extracts. Tinctures. Aromatic Waters, Extraction Processes: Maceration, Solvents used in Pharmaceutical Preparations, Oral Solutions, Syrups, Elixirs and Spirits, Oral Suspensions, Emulsions, Magma and Gels, Transdermal Drug Delivery Systems, Ophthalmic, Nasal and Otic Preparations, Suppositories And Vaginal Suppositories

II. General Pharmacology

Routes of drugs administration, Pharmacokinetics, Pharmacodynamics

III. Dispensing and Community Pharmacy

Basic Principles of Compounding and Dispensing Including, Extemporaneous Dispensing of: Solutions, Suspensions, Emulsions, Creams, Ointments, Pastes and gels, Pharmaceutical Incompatibilities, Classical dosage Forms. Radio-Pharmacy — Techniques and Applications,

IV. Pharmaceutical Chemistry

Theory, Instrumentation and Pharmaceutical Applications of the following Spectroscopic Methods:

- Spectroscopic methods
- Chromatographic methods:
- Electro chemical methods
- Differential scanning calorimetry

Part-III: 25 Marks (Subjective)

(Human Resource, Financial Management and Quality Management)

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

SUGGESTED READINGS

S. No.	Title	Author
1.	Pharmaceutics	Michel E Aulton
2.	Essential of Medical Pharmacology	J D Tripathy
3.	Clinical Pharmacy & Therapeutics	Cate Whittlesea & Karen Hodson
4.	Basic and Clinical Pharmacology	Katzung B G
5.	Pharmacology	Lipponcott
6.	Fundamentals of Experimental Pharmacology.	Qayum A
7.	Management of Drug Users in the Community: A practical Handbook.	Roy Robertson
8.	High Performance Liquid Chromatography	Lough W J
9.	William Kemp, Organic Spectroscopy	
10.	Theory and Practice of Chromatography	M Aminuddin & Javed Iqbal
11.	Practical Pharmaceutical Chemistry	A H Beckett and J B Stennlake
12.	Jenkins's quantitative Pharmaceutical Chemistry	A M Knevel and F E Digangi
13.	Human Resource Management	H.T.Graham & Roger Bennett
14.	Management	James A.F.Stoner, R.Eward Freeman, Daniel R.Gilbert Jr.

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

Case No.	F.4-71 (A)/2025-R
Particulars of post	Assistant Professor (Female) (Economics) (BS-18), Federal Government Educational Institutions, Directorate (Cantts/ Garrisons), 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: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (Economics) (Subjective)**50 Marks****I. Micro Economics**

Consumer behaviour, Determination of market demand and supply i.e. concept of elasticity of Demand & Supply, Static, Comparative Static Analysis, Distinction between partial and general equilibrium analysis (basic level) theory of the Firm, Producer's equilibrium, Pricing factors of production

II. Macro Economics

Basic Economic Concepts, National Income Accounting, Consumption Function, Multiplier, Accelerator, Component of Aggregate Demand, Labour Demand and Supply, Un-Employment, Determination of equilibrium level of income and output (at least with reference to two or three school of thought), Inflation.

III. Public Financing

Government expenditure, Sources of Government Revenue, Privatization, Taxes and non-taxes, Incidence of different taxes, Public Debt, Objectives, methods of repayment, Deficit financing, General Equilibrium Analysis, Welfare Economics, Fiscal Policy.

IV. Role of Foreign Trade and Aid in Economic Development

Trends in Pakistan's Balance of Payments, Terms of Trade, Changes in direction of trade, Trends in Pakistan's major exports and imports, Causes of significant changes in the trends, the role of migration and remittances in Pakistan's economy, costs and benefits of Foreign Aid, Role of Foreign Investment.

V. Major Issues in Pakistan Economy

Energy crisis, Corruption, Bad governance, External debt accumulation and dependency, Unemployment, Income inequality, Inflation, Fiscal and trade deficits, Balance of payment issues, Shortage of irrigation water.

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

- I. Development of Curriculum and Instructional Material**
 - Elements of Curriculum.
 - Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives, Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials.
- II. Process of Teaching and Teaching Strategies**
 - Process of Classroom Communication
 - Factors affecting Classroom Communication
 - Barriers to Classroom Communications
 - Use of Instructional Materials and Media
- III. Educational Assessment and Evaluation**
 - Concept of Classroom Assessment and Evaluation
 - Distinction between Assessment, Evaluation and Measurement
 - Approaches to Evaluation: Formative Evaluation; Summative Evaluation
 - Types of Test: Essay Type; Objective Type: Multiple Choice, True-False Items, Matching Type; Principles of Construction of these Test
 - Characteristics of a Good Test: Validity, Reliability, Objectivity, Usability
- IV. Research Methods in Education**
 - Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
 - Research Proposal and Report Writing.

SUGGESTED READINGS

S. No.	Title	Author
1.	A Text-book of Economics Theory	Stonier & Hague
2.	Government Finance—An Economic Analysis	Due John, F.
3.	Microeconomic	Ferguson, C.E. & Gould, J.P., Nicholson, Mankiw
4.	Macroeconomics	Rudigar Dorubush and Stanley Fisher Blanchard
5.	Foreign Aid Theory and Practice in Southern Asia	Wolf, Jr. DC
6.	History of International Trade	Findlay, R and O' Rourke, K
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.4-71 (B)/2025-R
Particulars of post	Assistant Professor (Female) (Health and Physical Education) (BS-18), Federal Government Educational Institutions, Directorate (Cantts/ Garrisons), 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: 25 Marks (MCQ)

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

Part-II: (Health and Physical Education) (Subjective) : 50 Marks**I. Philosophical Basis of Physical Education**

Philosophy and Physical Education, Physical Education as Discipline, Scientific Foundation of Physical Education, Physical Education and Recreation, Leadership in Physical Education

II. Scientific Sports Coaching

Sports Planning, Periodization of Training, Systemization of Training, Data Collection, Coach and Professional Ethics

III. Evaluation in Physical Education and Sports

Evaluation and Administration of Tests, Basic Statistics, Measurement of Physical Fitness, General Motor Ability, Cardiovascular Fitness, Rating Scales in Physical Education.

IV. Exercise Physiology

Muscular System and Exercise, Cardiovascular System and Exercise, Environment and Exercise, Nervous System and Exercise, Glandular System and Exercise, Gender Differences, Obesity

Part-III (Professional) (Subjective) : 25 Marks**I. Development of Curriculum and Instructional Material**

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

II. Process of Teaching and Teaching Strategies

- Process of Classroom Communication
- Factors affecting Classroom Communication
- Barriers to Classroom Communications

- Use of Instructional Materials and Media

III. Educational Assessment and Evaluation

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

IV. Research Methods in Education

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

SUGGESTED READINGS

S. No.	Title	Author
1.	Health & Physical Education.	Dr. A. Waheed Mughal
2.	Education in Physical Education.	Shamshad Ahmed
3.	Sports in Society : Issue & Controversies,	Jay Coackley
4.	Modern Measurement.	Osterlind J. Steven
5.	Introduction to Measurement in PE and Exercise Science	Margaret J. Safrit PhD, Terry M. Wood PhD
6.	Physiology of Sports	Reilly T and Williams
7.	Essentials of Exercise Physiology.	Shaver
8.	Research in Education	JW Best
9.	Integrating Education Technology into Teaching	Roblyer
10.	Curriculum Development	S. M. Shahid
11.	Educational Measurement and Evaluation	S. M. Shahid
12.	Educational Administration	S. M. Shahid

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

Case No.	F.4-71 (C)/2025-R
Particulars of post	Assistant Professor (Female) (History) (BS-18), Federal Government Educational Institutions, Directorate (Cantts/ Garrisons), 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: 25 Marks (MCQ)

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

Part-II: (History) (Subjective) 50 Marks

- I. **Muslim History:** The Dawn of Islam: The Prophetic Age, The Pious Caliphate, Political System of Islam under the Prophet (PBUH) and the Pious Caliphate, The Umayyads in Power
- II. **Muslim Rule and Heritage in India (712-1857):** Political History Arrival, foundation and consolidation of Muslim rule in India, important rulers of the Slave Dynasty and the Mughals. The Spirit and legacy of Muslim civilization, Art, Architecture and literature, Public Administration under Muslim Rules. Sultans, Kings, Economic, Social, Judicial, Civil and Military system during the Muslim rule, Industry, trade and commerce under the Muslim patronage, Financial Administration.
- III. **British Rule in India:** 1857-1947: British Imperialism, origin and growth of the East India Company, Causes and effects of downfall of the Mughal Empire in India, War of Independence in 1857: Causes and effects.
- IV. **Muslim Struggle for Independence:** Role of Shah Wali Ullah, Syed Ahmad Shaheed and Sir Syed Ahmed Khan towards regeneration of the Muslim of South Asia, All India Muslim League, Partition of Bengal, Simla Deputation, Lucknow pact; Khilafat movement. Nahru Report, Quaid-i- Azam's Fourteen Points.
- V. **Pakistan Movement:** Allama Iqbal's Allahabad Address 1930, and Round Table Conference. The Congress Rule in the provinces-1937-1939, Lahore Resolution 1940, various Missions and Plans for the partition of the South Asia. Founders of Pakistan: Quaid-i-Azam, Mohsin-ul-Mulk, Syed Amir Ali, Ali Brothers. Sir Agha Khan, Ch. Khaliq uz Zaman, Chaudhry Rahmat Ali, etc.
- VI. **Separation of East Pakistan:** Causes and Effects.
- VII. **Working of Democracy in Pakistan:** Liaquat Ali Khan to Feroz Khan Noon (1947-1958), Zulfikar Ali Bhutto's Period,(1971-1977),Benazir, Nawaz Sharif, Revival of Democracy: 1988-1999, Restoration of Democracy (2008 to date), Role of Major Political Parties and Pressure Groups in the history of Pakistan.
- VIII. **European History:** The French Revolution and Napoleonic Era, The Eastern Question, Unification of Germany, The Origins of First World War, The Second World War and its Effects on Europe, Post- War Europe
- IX. **History of USA:** Constitution of the USA: Salient Features, Industrialization and its emergence as one of the world powers, Post 1945 world scenario and emergence of USA and USSR as the Two World Powers, American Role in patronizing UNO and International Organizations,

American Role in Cold War and its emergence as the Sole Super Power, The War on Terror: The Role of Pakistan and USA, United States' role in International Conflicts

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

I. Development of Curriculum and Instructional Material

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

II. Process of Teaching and Teaching Strategies

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

III. Educational Assessment and Evaluation

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

IV. Research Methods in Education

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

SUGGESTED READINGS

S. No.	Title	Author
1.	Discovering Islam—Making Sense of Muslim History and Society	Ahmad, Akbar
2.	Islam: Ideology and Leading Issues	Ali, Anwar.
3.	India's Struggle for Independence	Chandre Bipin, 1989
4.	Wavell and the Days of the Raj: Britain's Penultimate Viceroy in India,	Chawla, Muhammad Iqbal, 2011
5.	The Charismatic Leader: Jinnah and the Creation of Pakistan	Hayat, Sikandar, 2007
6.	Muslim Civilization of Indo-Pakistan.	Ikram, Shaikh Muhammad, 1966
7.	Constitutional and Political History of Pakistan	Khan, Hamid, 2005
8.	The Military and Politics in Pakistan 1947-86	Rizvi Hassan Askari
9.	A History of Modern Europe (1789-1991)	H.L. Peacock,
10.	A Text Book of European History	by Southgate, G.W.
11.	Modern Europe in the Making from the French Revolution to the Common Market	Fasal, G.
12.	The Origins of the Second World War	Taylor, A.J.P.
13.	The Rise and Fall of Great Powers.	Paul Kennedy.
14.	The USA: 1917 – 1980	Smith, Nigel, 2006
15.	American Colonies: Selling of North America	Taylor, Alan, 2002
16.	Painless American History,	Curt Lader, 2009
17.	Research in Education	JW Best
18.	Integrating Education Technology into Teaching	Roblyer
19.	Curriculum Development	S. M. Shahid
20.	Educational Measurement and Evaluation	S. M. Shahid
21.	Educational Administration	S. M. Shahid

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

Case No.	F.4-71 (D)/2025-R
Particulars of post	Assistant Professor (Female) (Islamiyat) (BS-18), Federal Government Educational Institutions, Directorate (Cantts/ Garrisons), 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: 25 Marks (MCQ)

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

Part-II: (Islamiyat) (Subjective): 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 Educationalist
- Revolutionary Leader

III. Islamic Civilization and Culture:

- Meanings and the vital elements
- The role of civilisation in the development of the human personality and communities
- Distinctions of Islamic Civilization;
 - 0 Tauheed
 - 0 Spiritualism
 - 0 Dignity of Man
 - 0 Equality
 - 0 Social Justice
 - 0 Moral values
 - 0 Tolerance
 - 0 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.
- The role of Islam in the modern world.

I. اسلامی ضابطہ حیات

⇒ اسلامی نظام کی نمایاں خصوصیات:

- سماجی نظام
- سیاسی نظام
- اقتصادی نظام
- عدالتی نظام
- انتظامی نظام

⇒ سرکاری ملازمین کی ذمہ داریاں

II. سیرت النبی کا مطالعہ

⇒ سیرت النبی کے مطالعہ کی اہمیت اور ضرورت بطور:

- نمونہ عمل
- پیغمبر امن
- مسلخ
- سفارت کار
- معلم انسانیت
- انقلابی رہنما

III. اسلامی تہذیب و ثقافت

⇒ اسلامی تہذیب و ثقافت کے معانی اور اہم اجزاء

⇒ سماج اور انسانی شخصیت کی تعمیر میں تہذیب کا کردار

⇒ اسلامی تہذیب کے نمایاں اوصاف:

- توحید
- رسالت
- عزیمت نفس
- انسانی عزت و وقار
- مساوات
- سماجی انصاف
- اعتدالی اقدار
- صبر و برداشت
- قانون کی حکمرانی

IV. اسلام اور دنیا:

⇒ اسلامی تہذیب کے مغرب اور مغرب کے اسلامی تہذیب پر اثرات

⇒ اسلام اور عصر حاضر کے چیلنجز

⇒ مشرق اور مغرب کے درمیان بات چیت

⇒ جدید دنیا میں اسلام کا مقام

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

- I. Development of Curriculum and Instructional Material
- Elements of Curriculum.

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

II. Process of Teaching and Teaching Strategies

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

III. Educational Assessment and Evaluation

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

IV. Research Methods in Education

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

SUGGESTED READINGS

S. No.	Title	Author
1.	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.	Tahzeeb o Tamaddon e Islami	Rasheed Akhter Nadvi
8.	Islamic Civilization: Foundations Belief & Principles	Abul A' la Mawdudi
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.4-71 (E)/2025-R
Particulars of post	Assistant Professor (Female) (Mathematics) (BS-18), Federal Government Educational Institutions, Directorate (Cantts/ Garrisons), 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: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (Mathematics) (Subjective)**50 Marks****I. Vector Calculus**

Vector algebra; scalar and vector products of vectors; gradient divergence and curl of a vector; line, surface and volume integrals; Green's, Stokes' and Gauss theorems.

II. Statics

Composition and resolution of forces; parallel forces and couples; equilibrium of a system of coplanar forces; centre of mass of a system of particles and rigid bodies; equilibrium of forces in three dimensions.

III. Dynamics

- Motion in a straight line with constant and variable acceleration; simple harmonic motion; conservative forces and principles of energy.
- Tangential, normal, radial and transverse components of velocity and acceleration; motion under central forces; planetary orbits; Kepler laws;

IV. Ordinary differential equations

- Equations of first order; separable equations, exact equations; first order linear equations; orthogonal trajectories; nonlinear equations reducible to linear equations, Bernoulli and Riccati equations.
- Equations with constant coefficients; homogeneous and inhomogeneous equations; Cauchy-Euler equations; variation of parameters.
- Ordinary and singular points of a differential equation; solution in series; Bessel and Legendre equations; properties of the Bessel functions and Legendre polynomials.

V. Fourier series and partial differential equations

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

VI. Numerical Methods

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

Part-III (Professional) (Subjective) : 25 Marks**I. Development of Curriculum and Instructional Material**

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

II. Process of Teaching and Teaching Strategies

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

III. Educational Assessment and Evaluation

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

IV. Research Methods in Education

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

SUGGESTED READINGS

S. No.	Title	Author
1.	An Introduction to Vector Analysis	Khalid Latif,
2.	Introduction to Mechanics	Q.K. Ghori
3.	An Intermediate Course in Theoretical Mechanics	Khalid Latif,
4.	Differential Equations with Boundary Value Problems	D. G. Zill and M. R. Cullen
5.	Elementary Differential Equations	E.D. Rainville, P.E. Bedient and R.E. Bedient
6.	Elements of Numerical Analysis	F. Ahmad and M.A Rana
7.	Mathematical Methods	S. M. Yousaf, Abdul Majeed and Muhammad Amin
8.	Research in Education	JW Best
9.	Integrating Education Technology into Teaching	Roblyer
10.	Curriculum Development	S.M. Shahid
11.	Educational Measurement and Evaluation	S.M. Shahid
12.	Educational Administration	S.M. Shahid

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

Case No.	F.4-71 (F)/2025-R
Particulars of post	Assistant Professor (Female) (Sociology) (BS-18), Federal Government Educational Institutions, Directorate (Cantts/ Garrisons), 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: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (Sociology) (Subjective)**50 Marks**

- I. **Social Interaction:** Caste and classes, Forms of social classes, Feudal system in Pakistan, Social Mobility-nature of social mobility and its determinants in Pakistani society, Culture of poverty.
- II. **Social Control:** Mechanisms of social control-formal and informal means of social control, Anomie, Alienation and social Integration-Means of social integration in Pakistani Society.
- III. **Social and Cultural Change and Social Policy:** Processes of Social and Cultural Change-discovery, Inhibitions to social and cultural change in Pakistan, Social planning and directed social and cultural change, Effect of Industrialization, Urbanization, Modernization and Modern Means of Communication on Social Change.
- IV. **Public Opinion:** Formulation of public opinion, concept of opinion leader, characteristics of opinion leadership.
- V. **Community:** The rural community, Traditional Characteristics of rural life, The urban community, Rural – Urban convergence, Urbanism, Future of cities in Pakistan.
- VI. **Social Institutions:** The nature and genesis of institutions, The process of institutionalization, Functions of Social Institutions: Family, Religion, Education, Economy and Politics.
- VII. **Social Problems in Pakistan:** High population growth rate, Rural –urban migration. Issues of technical/vocational training, Deviance and street crime, Unemployment, illiteracy and School drop out, Smuggling, Prostitution, Poverty, Drug Addiction, Child Labour and Abuse, Bonded Labour, Social customs and Traditions affecting Women in Pakistan, Violence Against Women and Domestic Violence, Issues concerning the Elderly in Pakistan.

- VIII. **Methods of Sociological Research:** Scientific Method, Steps in research, Types of Questionnaire Research Design, Surveys, Observation and Case Studies.

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

- I. **Development of Curriculum and Instructional Material**
 - Elements of Curriculum.
 - Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives, Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials.
- II. **Process of Teaching and Teaching Strategies**
 - Process of Classroom Communication
 - Factors affecting Classroom Communication
 - Barriers to Classroom Communications
 - Use of Instructional Materials and Media
- III. **Educational Assessment and Evaluation**
 - Concept of Classroom Assessment and Evaluation
 - Distinction between Assessment, Evaluation and Measurement
 - Approaches to Evaluation: Formative Evaluation; Summative Evaluation
 - Types of Test: Essay Type; Objective Type: Multiple Choice, True-False Items, Matching Type; Principles of Construction of these Test
 - Characteristics of a Good Test: Validity, Reliability, Objectivity, Usability
- IV. **Research Methods in Education**
 - Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
 - Research Proposal and Report Writing.

SUGGESTED READINGS

S. No.	Title	Author
1.	Sociology : A down to earth approach	James M. Henslin
2.	Methods of Social Research	Baily
3.	Poverty Curtains	Dr. Mehboob-ul-haq
4.	Sociology	Ogburn & Nimkoff
5.	Feudal System in Pakistan	Nawab Haider Naqvi
6.	Sociology: An Introduction to the Science of Society	Koening Samuel
7.	The Design of Social Research,	Ackoff, Russel, L.
8.	An Introduction to the History of Sociology	Barnes, H.E. (Ed.)
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.4-74/2025-R
Particulars of post	2nd Engineer (Electronics) (System Engineer PCBRF) (BS-18), Naval Headquarters, Ministry of Defence.
Minimum Qualification & Experience:	i. Bachelor of Engineering in Electrical / Electronics / Computer or equivalent from the recognized University. ii. Five (5) 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.

Part-I: (MCQ) 25 Marks

- 25 MCQ Questions on Part-II.

Part-II: (Engineering) (Subjective)**75 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.4-75 (A)/2025-R
Particulars of post	Associate Professor (Female) (Islamiyat) (BS-19) , 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 eight (8) year post qualification teaching and administrative experience at College / University level. OR M. Phil degree in the relevant subject with ten (10) years post qualification teaching and administrative experience at College / University level. OR Second Class or Grade 'C' Master's degree in the relevant subject with Twelve (12) years post qualification teaching experience at College / University level.

Part-I: 25 Marks (MCQ)

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

Part-II: (Islamiyat) (Subjective): 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 Educationalist
- Revolutionary Leader

III. Islamic Civilization and Culture:

- Meanings and the vital elements
- The role of civilisation in the development of the human personality and communities
- Distinctions of Islamic Civilization;
 - Tauheed
 - 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.
- The role of Islam in the modern world.

I. اسلامی ضابطہ حیات

⇒ اسلامی نظام کی نمایاں خصوصیات:

- سماجی نظام
- سیاسی نظام
- اقتصادی نظام
- عدالتی نظام
- انتظامی نظام
- ⇒ سرکاری ملازمین کی ذمہ داریاں

II. سیرت النبی کا مطالعہ

⇒ سیرت النبی کے مطالعہ کی اہمیت اور ضرورت بطور:

- نمونہ عمل
- پیغمبر امن
- مسلخ
- سفارت کار
- معلم انسانیت
- انقلابی رہنما

III. اسلامی تہذیب و ثقافت

⇒ اسلامی تہذیب و ثقافت کے معانی اور اہم اجزاء

⇒ سماج اور انسانی شخصیت کی تعمیر میں تہذیب کا کردار

⇒ اسلامی تہذیب کے نمایاں اوصاف:

- توحید
- رسالت
- عزیمت نفس
- انسانی عزت و وقار
- مساوات
- سماجی انصاف
- اعتدالی اقدار
- صبر و برداشت
- قانون کی حکمرانی

IV. اسلام اور دنیا:

⇒ اسلامی تہذیب کے مغرب اور مغرب کے اسلامی تہذیب پر اثرات

⇒ اسلام اور عصر حاضر کے چیلنجز

⇒ مشرق اور مغرب کے درمیان بات چیت

⇒ جدید دنیا میں اسلام کا مقام

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

- I. Development of Curriculum and Instructional Material
- Elements of Curriculum.

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

II. Process of Teaching and Teaching Strategies

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

III. Educational Assessment and Evaluation

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

IV. Research Methods in Education

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

SUGGESTED READINGS

S. No.	Title	Author
1.	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.	Tahzeeb o Tamaddon e Islami	Rasheed Akhter Nadvi
8.	Islamic Civilization: Foundations Belief & Principles	Abul A' la Mawdudi
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.4-75 (B)/2025-R
Particulars of post	Associate Professor (Female) (Mathematics) (BS-19) , 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 eight (8) year post qualification teaching and administrative experience at College / University level. OR M. Phil degree in the relevant subject with ten (10) years post qualification teaching and administrative experience at College / University level. OR Second Class or Grade 'C' Master's degree in the relevant subject with Twelve (12) years post qualification teaching experience at College / University level.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (Mathematics) (Subjective)**50 Marks****I. Vector Calculus**

Vector algebra; scalar and vector products of vectors; gradient divergence and curl of a vector; line, surface and volume integrals; Green's, Stokes' and Gauss theorems.

II. Statics

Composition and resolution of forces; parallel forces and couples; equilibrium of a system of coplanar forces; centre of mass of a system of particles and rigid bodies; equilibrium of forces in three dimensions.

III. Dynamics

- Motion in a straight line with constant and variable acceleration; simple harmonic motion; conservative forces and principles of energy.
- Tangential, normal, radial and transverse components of velocity and acceleration; motion under central forces; planetary orbits; Kepler laws;

IV. Ordinary differential equations

- Equations of first order; separable equations, exact equations; first order linear equations; orthogonal trajectories; nonlinear equations reducible to linear equations, Bernoulli and Riccati equations.
- Equations with constant coefficients; homogeneous and inhomogeneous equations; Cauchy-Euler equations; variation of parameters.
- Ordinary and singular points of a differential equation; solution in series; Bessel and Legendre equations; properties of the Bessel functions and Legendre polynomials.

V. Fourier series and partial differential equations

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

VI. Numerical Methods

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

Part-III (Professional) (Subjective) : 25 Marks**I. Development of Curriculum and Instructional Material**

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

II. Process of Teaching and Teaching Strategies

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

III. Educational Assessment and Evaluation

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

IV. Research Methods in Education

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

SUGGESTED READINGS

S. No.	Title	Author
1.	An Introduction to Vector Analysis	Khalid Latif,
2.	Introduction to Mechanics	Q.K. Ghor
3.	An Intermediate Course in Theoretical Mechanics	Khalid Latif,
4.	Differential Equations with Boundary Value Problems	D. G. Zill and M. R. Cullen
5.	Elementary Differential Equations	E.D. Rainville, P.E. Bedient and R.E. Bedient
6.	Elements of Numerical Analysis	F. Ahmad and M.A Rana
7.	Mathematical Methods	S. M. Yousaf, Abdul Majeed and Muhammad Amin
8.	Research in Education	JW Best
9.	Integrating Education Technology into Teaching	Roblyer
10.	Curriculum Development	S.M. Shahid
11.	Educational Measurement and Evaluation	S.M. Shahid
12.	Educational Administration	S.M. Shahid

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

Case No.	F.4-75 (C)/2025-R
Particulars of post	Associate Professor (Female) (Pak Studies) (BS-19) , 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 eight (8) year post qualification teaching and administrative experience at College / University level. OR M. Phil degree in the relevant subject with ten (10) years post qualification teaching and administrative experience at College / University level. OR Second Class or Grade 'C' Master's degree in the relevant subject with Twelve (12) years post qualification teaching experience at College / University level.

Part-I: 25 Marks (MCQ)

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

Part-II: (Pak Studies) (Subjective) : 50 Marks

- Ideology of Pakistan-----definition and elucidation, historical aspects: Muslim rule in the Sub-Continent, its downfall and efforts for Renaissance. Movements for reforms-- Shaikh Ahmad Sarhindi, Shah Waliullah, Sayyid Ahmad Shaheed, Aligarh, Deoband, Nadwah, and other educational institutions-----Sindh Madrassah and Islamia College Peshawar. Ideology of Pakistan in the light of Speeches and statements of Allama Iqbal and Quaid- i Azam Muhammad Ali Jinnah.
- Changing Security Dynamics for Pakistan: Challenges to National Security of Pakistan
- Pakistan War on Terror
- Foreign Policy of Pakistan Post 9/11
- Evolution of Democratic System in Pakistan
- Hydro Politics ; Water Issues in Domestic and Regional Context
- Pakistan's Energy Problems and their Effects
- Pakistan's Relations with Neighbours
- Pakistan and India Relations Since 1947
- Kashmir Issue
- The war in Afghanistan since 1979 and its impact on, and challenges to Pakistan.
- War against Terrorism since 2001 onwards
- The Prevailing Social Problems of Pakistan and the Strategies to Deal with them: Over Population, Poverty, Education, Health and Sanitation.

Part-III (Professional) (Subjective) : 25 Marks**I. Development of Curriculum and Instructional Material**

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

II. Process of Teaching and Teaching Strategies

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

III. Educational Assessment and Evaluation

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

IV. Research Methods in Education

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

SUGGESTED READINGS

S. No.	Title	Author
1.	Federalism and Ethnic Conflict Regulation in India and Pakistan.	Adeney, Katharine.
2.	Labour, Democratization and Development in India and Pakistan.	Candland, Christopher,
3.	Frontline Pakistan: The Struggle with Militant Islam.	Hussian, Zahid.
4.	Modern South Asia: History, Culture, Political Economy	Jalal, Aisha and Bose, Sugata.,
5.	Back to Pakistan: A Fifty Year Journey.	Mass, Leslie Noyes.
6.	Pakistan: Manifest Destiny.	Qureshi, Atiff.
7.	Pakistan, America, and Future of Global Jihad	Riedel, Bruce. Deadly Embrace:
8.	Kashmir in Conflict: India, Pakistan and the Unending War.	Schofield, Victoria.
9.	The Emergence of Pakistan	Ch. Muhammad Ali
10.	The Last Mughal	William Dalrymple
11.	Jinnah of Pakistan	Stanley Wolpert
12.	A Brief History of Pakistan.	Wynbrandt, James.
13.	Pakistan's Energy Sector: From Crisis to Crisis-Breaking the Chain	Zaid Alahdad
14.	Research in Education	JW Best
15.	Integrating Education Technology into Teaching	Roblyer
16.	Curriculum Development	S. M. Shahid
17.	Educational Measurement and Evaluation	S. M. Shahid
18.	Educational Administration	S. M. Shahid

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

Case No.	F.4-75 (D)/2025-R
Particulars of post	Associate Professor (Female) (Physics) (BS-19) , 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 eight (8) year post qualification teaching and administrative experience at College / University level. OR M. Phil degree in the relevant subject with ten (10) years post qualification teaching and administrative experience at College / University level. OR Second Class or Grade 'C' Master's degree in the relevant subject with Twelve (12) years post qualification teaching experience at College / University level.

Part-I: 25 Marks (MCQ)

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

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

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

II. Fluid Mechanics

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

III. Waves and Oscillation

- Free oscillation with one and two degrees of freedom; forced and damped oscillations and phenomenon of resonance. Simple harmonic motion. Traveling waves and transmission of energy; Phase and Group velocity; standing waves. Basics of sound waves.
- Reflection, Refraction, Interference, Diffraction and Polarization of waves; interferometer and Newton's rings; Diffraction Gratings and their resolving power; spectrometers. Electromagnetic wave equation; normal and anomalous dispersion; coherence, lasers and applications.

IV. Heat and Thermodynamics

Perfect gas and Van der Waals equation; Three Laws of Thermodynamics, internal energy, temperature, entropy. Thermal properties of Simple system production and measurement of low temperatures; kinetic theory of gases;

Maxwellian distribution of molecular velocities; Brownian motion; Transport phenomena. Classical Maxwell-Boltzmann Statistics and its application; Quantum Bose—Einstein and Fermi—Dirac Statistics.

V. Electricity and Magnetism

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

VI. Modern and Quantum Physics

Operators and quantum states, observables, time dependent and independent Schrodinger equation, angular momentum, spin-1/2 particle in a magnetic field, wave mechanics, particle in a box, tunneling, one-dimensional harmonic oscillator, Heisenber's uncertainty relationship and indeterminacy based on commutation properties of operators, Bohr theory and quantum numbers including electron spin; Pauli's exclusion principle; Spectra of simple systems with one or two valence electrons. Photo electric effect Compton scattering; pair production; Lande's g factor and Zeeman effect. Raman effect; Waves and particles and De Broglie's Hypothesis.

VII. Solid State Physics

Crystal lattice and structure, Bravais lattice, free electron model, Band theory and electron in a periodic potential, Fermi energy and density of states, n and p type semiconductors, physics of the transistor and MOSFET, dielectric properties, magnetic properties and origin of magnetism.

VIII. Nuclear Physics

Structure of Nuclei; Methods of detection, Mass Sepectrometer. Accelerators. Phenomenon of fission; reactor and nuclear power, nuclear fusion and its application, Elementary particles and their properties.

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

I. Development of Curriculum and Instructional Material

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

II. Process of Teaching and Teaching Strategies

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

III. Educational Assessment and Evaluation

- Concept of Classroom Assessment and Evaluation
- Distinction between Assessment, Evaluation and Measurement
- Approaches to Evaluation: Formative Evaluation; Summative Evaluation

- Types of Test: Essay Type; Objective Type: Multiple Choice, True-False Items, Matching Type; Principles of Construction of these Test
- Characteristics of a Good Test: Validity, Reliability, Objectivity, Usability

IV. Research Methods in Education

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

SUGGESTED READINGS

S. No.	Title	Author
1.	Perspectives of Modern Physics.	A. Beiser.
2.	Fundamentals of Physics.	Halliday & Resnick
3.	Introduction to Electromagnetic Fields and Waves	D. Corson & P. Lorrain.
4.	Heat and Thermodynamics.	D. Zemansky
5.	Introduction to Quantum Mechanics	D. Griffiths
6.	Modern Physics	Serway, Moses, Moyer.
7.	Solid State Physics	C. Kittel
8.	The Cosmic Code: Quantum Physics as the Language of Nature	Heinz R. Pagets
9.	Physics of the Life Science	Jay Newman
10.	Research in Education	JW Best
11.	Integrating Education Technology into Teaching	Roblyer
12.	Curriculum Development	S. M. Shahid
13.	Educational Measurement and Evaluation	S. M. Shahid
14.	Educational Administration	S. M. Shahid

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

Case No.	F.4-76/2025-R
Particulars of post	Assistant Professor (Islamiyat) (BS-18) , Naval Headquarters, Ministry Of Defence.
Minimum Qualification & Experience:	a. Second Class or Grade 'C' Master's Degree in relevant subject. b. Five (5) years post qualification teaching experience at College level in the relevant subject. OR M. Phil with three (3) years post qualification teaching experience at College level in the relevant subject. OR Ph.D. in the relevant subject.

Part-I: 25 Marks (MCQ)

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

Part-II: (Islamiyat) (Subjective): 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 Educationalist
- Revolutionary Leader

III. Islamic Civilization and Culture:

- Meanings and the vital elements
- The role of civilisation in the development of the human personality and communities
- Distinctions of Islamic Civilization;
 - Tauheed
 - 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.
- The role of Islam in the modern world.

I. اسلامی ضابطہ حیات

⇒ اسلامی نظام کی نمایاں خصوصیات:

- سماجی نظام
- سیاسی نظام
- اقتصادی نظام
- عدالتی نظام
- انتظامی نظام

⇒ سرکاری ملازمین کی ذمہ داریاں

II. سیرت النبی کا مطالعہ

⇒ سیرت النبی کے مطالعہ کی اہمیت اور ضرورت بطور:

- نمونہ عمل
- پیغمبر امن
- مسلخ
- سفارت کار
- معلم انسانیت
- انقلابی رہنما

III. اسلامی تہذیب و ثقافت

⇒ اسلامی تہذیب و ثقافت کے معانی اور اہم اجزاء

⇒ سماج اور انسانی شخصیت کی تعمیر میں تہذیب کا کردار

⇒ اسلامی تہذیب کے نمایاں اوصاف:

- توحید
- رسالت
- عزیمت نفس
- انسانی عزت و وقار
- مساوات
- سماجی انصاف
- اعتدالی اقدار
- صبر و برداشت
- قانون کی حکمرانی

IV. اسلام اور دنیا:

⇒ اسلامی تہذیب کے مغرب اور مغرب کے اسلامی تہذیب پر اثرات

⇒ اسلام اور عصر حاضر کے چیلنجز

⇒ مشرق اور مغرب کے درمیان بات چیت

⇒ جدید دنیا میں اسلام کا مقام

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

- I. Development of Curriculum and Instructional Material
- Elements of Curriculum.

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

II. Process of Teaching and Teaching Strategies

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

III. Educational Assessment and Evaluation

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

IV. Research Methods in Education

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

SUGGESTED READINGS

S. No.	Title	Author
1.	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.	Tahzeeb o Tamaddon e Islami	Rasheed Akhter Nadvi
8.	Islamic Civilization: Foundations Belief & Principles	Abul A' la Mawdudi
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.4-79/2025-R
Particulars of post	Human Resource Advisor (BS-19) , Ministry of Overseas Pakistanis and Human Resource Development.
Minimum Qualification & Experience:	i. LLM degree from a University recognized by the Higher Education Commission. ii. Eight (8) years post qualification experience in Labour Administration. OR i. Second Class or Grade 'C' Master degree in Social Sciences or LLB from a University recognized by the Higher Education Commission. ii. Twelve (12) years post qualification experience in Labour Administration.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

Part-II: 50 Marks

(Public Administration & Office Management)

- I. **Public Administration:** Nature and scope, Role of Public Administration in a modern Welfare State;
- II. **Bureaucracy:** Concept of Bureaucracy, Theories of Bureaucracy, Ecology of Bureaucracy; Bureaucracy of Pakistan as a Change Agent;
- III. **Administrative Leadership:** Approaches to the study of Leadership, Forms of Leadership, Leadership qualities;
- IV. **Administrative Accountability:** Internal and External Controls; Executive Control, Legislative Control, Judicial Control, Ombudsman, Public Opinion and Pressure Groups; Problems of Administrative Accountability in Pakistan;
- V. **Planning:** Types of Plans, Planning Process; Principles of Planning, Planning Machinery in Pakistan;
- VI. **Controlling and Co-Ordination:** Forms of Controls, Control Mechanism, Process of Control, Principles of Controlling; Principles Coordination; Machinery for Coordination; Problems of Coordination in Public Administration in Pakistan.
- VII. Civil Servants Act 1973 and Rules made thereunder;
- VIII. Rules of Business 1973;
- IX. Secretariat Instructions and Office Procedures;
- X. PPRA Ordinance 2002 and Rules 2004.
- XI. Labour Laws in Pakistan

Part-III: 25 Marks (Descriptive)

(Human Resource, Financial Management and Quality Management)

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

SUGGESTED READINGS

S. No.	Title	Author
1.	An Introduction to the Public Administration	E.N. Cladden
2.	Bureaucracy: Modern Society	Pebr, M.Blau.
3.	Public Administration for a Welfare State	Paul Abbleby
4.	The Bureaucracy of Pakistan	Charles F. Kennedy
5.	Human Resource Management	H.T.Graham & Roger Bennett
6.	Management	James A.F.Stoner, R.Eward Freeman, Daniel R.Gilbert Jr.

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

Case No.	F.4-80/2025-R
Particulars of post	Civilian Store Officer, Grade-I (BS-19) , Corps of EME, Ministry of Defence
Minimum Qualification & Experience:	<p>Ph.D. in Engineering Management or equivalent qualification from a University recognized by the PEC with Eight (8) years post qualification experience in BS-17 & above or equivalent relating to store supply and Logistics/ Engineering Management matters in a Government/ Semi-Government/ Autonomous/ Public/ Private Organization.</p> <p>OR</p> <p>M. Phil. in Engineering Management or equivalent qualification from a University recognized by the PEC with Ten (10) years post qualification experience in BS-17 & above or equivalent relating to store supply and Logistics/ Engineering Management matters in a Government/ Semi-Government/ Autonomous/ Public/ Private Organization.</p> <p>OR</p> <p>Second Class or Grade 'C Master's degree in Business Administration (Supply Chain Management) or equivalent qualification from a University recognized by the HEC with Twelve (12) years post qualification experience in BS-17 & above or equivalent relating to store supply and Logistics/ Engineering Management matters in a Government/ Semi-Government/ Autonomous/ Public/ Private Organization. OR Colonel/ Lieutenant Colonel (Retired) from EME Corps with requisite qualification and experience of the post.</p>

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: 50 Marks (Descriptive)

(Public Administration, Office Management & Professional)

- I. **Public Administration:** Nature and scope, Role of Public Administration in a modern Welfare State; Issues & Challenges of Public Administration in Pakistan;
- II. **Administrative Accountability:** Internal and External Controls; Executive Control, Legislative Control, Judicial Control, Ombudsman, Public Opinion and Pressure Groups; Problems of Administrative Accountability in Pakistan;
- III. **Planning:** Types of Plans, Planning Process; Principles of Planning, Planning Machinery in Pakistan;
- IV. PPRA Ordinance 2002 and Rules 2004.
- V. Procedures for Receipt and Issue of Stores
- VI. Stores procedures with relation to following:-
 - Stock Taking
 - Care and Preservation of Military Stores
- VII. Ware House Management

Part-III: 25 Marks (Descriptive)

(Human Resource, Financial Management and Quality Management)

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

SUGGESTED READINGS

S. No.	Title	Author
1.	An Introduction to the Public Administration	E.N. Cladden
2.	Public Administration for a Welfare State	Paul Abbleby
3.	Warehouse Distribution & Operation Handbook	Mulcahy, D.E.
4.	Inventory Control and Management	Walters, D.
5.	The Bureaucracy of Pakistan	Charles F. Kennedy
6.	Human Resource Management	H.T.Graham & Roger Bennett
7.	Management	James A.F.Stoner, R.Eward Freeman, Daniel R.Gilbert Jr.

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

Case No.	F.4-81/2025-R
Particulars of post	Boiler Engineer (BS-18) , Pakistan Institute of Medical Sciences (PIMS), Islamabad, Ministry of National Health Services, Regulations & Coordination.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Bachelor's degree in Mechanical / Electrical Engineering or equivalent qualification from a University recognized by HEC. ii. First Class Certificate of Competency as Boiler Engineer from any recognized Government Institute. iii. Five (5) years practical experience in the relevant field in a recognized Hospital / Firm.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

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

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

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

IV. Boilers Management

Fundamental Design of Boiler, Boiler Mountings, Accessories and Auxiliaries, Draught System of Boilers, Boiler Performance, Steam Engines and Condensers, Boiler Operation & Maintenance, Boiler Safety, Boiler Metallurgy, Boiler Protection and Interlocks, Boiler Controls, Boiler Pollution Control, Liquid/Solid Fuel Handling

SUGGESTED READINGS

S. No.	Title	Author
1.	Electrical Technology	B.L. Theraja
2.	DC Machines	P.C. Sen
3.	Semiconductors	Manzar Saeed
4.	Fluid mechanics with engineering applications	Finnemore/ Franzini.
5.	Schaum Outline Series; Strength of Materials	William A. Nash
6.	Fluid Mechanics	Lewitt
7.	Manufacturing Processes for Engineering Materials	Kalpakjian
8.	Boiler Operator's Hand Book	Ken Heselton
9.	Boiler Operator's Guide	Ray Wohlfarth & Anthony L. Kohan

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

Case No.	F.4-83/2025-R
Particulars of post	Head of Department (Commerce) (Female) (BS-18) , Government Polytechnic Institute for Women, Ministry of Federal Education & Professional Training.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Master's degree in Commerce or an equivalent qualification from a recognized University. ii. Five (5) years post qualification teaching experience in the field of Commerce in BS-16 and above or equivalent in Educational Institutions in Government/ Semi Government/ Reputable Private Organization.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (Commerce) 50 Marks (Descriptive)

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

- I. Development of Curriculum and Instructional Material**
- Elements of Curriculum.
 - Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives, Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials.
- II. Process of Teaching and Teaching Strategies**
- Process of Classroom Communication
 - Factors affecting Classroom Communication
 - Barriers to Classroom Communications
 - Use of Instructional Materials and Media
- III. Educational Assessment and Evaluation**
- Concept of Classroom Assessment and Evaluation
 - Distinction between Assessment, Evaluation and Measurement
 - Approaches to Evaluation: Formative Evaluation; Summative Evaluation
 - Types of Test: Essay Type; Objective Type: Multiple Choice, True-False Items, Matching Type; Principles of Construction of these Test
 - Characteristics of a Good Test: Validity, Reliability, Objectivity, Usability
- IV. Research Methods in Education**
- Research Instruments: Questionnaire: Interview; Test; Observation; Rating Scale
 - Research Proposal and Report Writing

SUGGESTED READINGS

S. No.	Title	Author
1.	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: PROFESSIONAL**Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-86/2025-R
Particulars of post	Principal (Male) (BS-19) , Islamabad Model Schools/Colleges (ex- F.G schools), Federal Directorate of Education, Ministry of Federal Education & Professional Training.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Master's degree / Bachelor's degree (4 years duration) with Second Class or Grade 'C' M.Ed / B.Ed. (Hons) or equivalent qualification from a University recognized by HEC. Requirement of M.Ed / B.Ed. (Hons) is exempted for those having Master's / M.Phil / Ph.D. degree in Education. ii. Twelve (12) years post qualification experience in Teaching and Administration in a recognized Educational Institution.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: 25 Marks (Descriptive)

(Human Resource, Financial Management and Quality Management)

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

Part-III: (Professional) 50 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. Educational Administration and Supervision

- The Concept of Administration
- Educational Supervision

V. Research Methods in Education

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

SUGGESTED READINGS

S. No.	Title	Author
1.	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

FEDERAL PUBLIC SERVICE COMMISSION
(Curriculum & Research Wing)

Schemes and Syllabi for Written Examination (Descriptive) for all Posts of Doctors in BS-18 & BS-19 included in Consolidated Adv. No. 02/2025

PAPER-I: MBBS (Common for all posts of Doctor in BS-18 & 19)

Max Marks: 100

Time Allowed: 3 Hours

Part-I: (MCQ)**25 Marks**

25 MCQ Questions on Part-II

Part-II: (Qualification Based) (Descriptive)**75 Marks**Core courses of **MBBS Degree**

PAPER-II: PROFESSIONAL

Max Marks: 100

Time Allowed: 3 Hours

Case No.	F.4-31/2025-R
Particulars of post	Consultant Gynaecology (Female) (BS-18) , Health Department GB, Ministry of Kashmir Affairs & Gilgit Baltistan.
Minimum Qualification & Experience:	i. MBBS or equivalent qualification from a University / Institute recognized by the PM&DC. ii. PM&DC Level-II (a) or (b) / Level-III or equivalent qualification in the relevant subject / specialty recognized by the PM&DC with clinical experience of three (3) years with Level-II and two (2) years with Level-III in the relevant specialty / field.

Part-I: (MCQ)**25 Marks**

25 MCQ Questions on Part-II.

Part-II: (Professional) (Descriptive)**75 Marks**Core courses of Level-II qualification in **Gynaecology**

PAPER-II: PROFESSIONAL

Max Marks: 100

Time Allowed: 3 Hours

Case No.	F.4-32/2025-R
Particulars of post	Consultant Anesthesia (BS-18) , Health Department GB, Ministry of Kashmir Affairs & Gilgit Baltistan.
Minimum Qualification & Experience:	i. MBBS or equivalent qualification from a University / Institute recognized by the PM&DC. ii. PM&DC Level-II (a) or (b) / Level-III or equivalent qualification in the relevant subject / specialty recognized by the PM&DC with clinical experience of three (3) years with Level-II and two (2) years with Level-III in the relevant specialty / field.

Part-I: (MCQ)**25 Marks**

25 MCQ Questions on Part-II.

Part-II: (Professional) (Descriptive)**75 Marks**Core courses of Level-II qualification in **Anesthesia**

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

Case No.	F.4-33/2025-R
Particulars of post	Consultant Radiology (BS-18) , Health Department GB, Ministry of Kashmir Affairs & Gilgit Baltistan.
Minimum Qualification & Experience:	i. MBBS or equivalent qualification from a University / Institute recognized by the PM&DC. ii. PM&DC Level-II (a) or (b) / Level-III or equivalent qualification in the relevant subject / specialty recognized by the PM&DC with clinical experience of three (3) years with Level-II and two (2) years with Level-III in the relevant specialty / field.

Part-I: (MCQ)**25 Marks**

25 MCQ Questions on Part-II.

Part-II: (Professional) (Descriptive)**75 Marks**Core courses of Level-II qualification in **Radiology****PAPER-II: PROFESSIONAL**Max Marks: 100Time Allowed: 3 Hours

Case No.	F.4-34/2025-R
Particulars of post	Consultant Cardiology (BS-18) , Health Department GB, Ministry of Kashmir Affairs & Gilgit Baltistan.
Minimum Qualification & Experience:	i. MBBS or equivalent qualification from a University / Institute recognized by the PM&DC. ii. PM&DC Level-II (a) or (b) / Level-III or equivalent qualification in the relevant subject / specialty recognized by the PM&DC with post qualification clinical experience of three (3) years with Level-II and two (2) years with Level-III in the relevant specialty / field.

Part-I: (MCQ)**25 Marks**

25 MCQ Questions on Part-II.

Part-II: (Professional) (Descriptive)**75 Marks**Core courses of Level-II qualification in **Cardiology**

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

Case No.	F.4-35/2025-R
Particulars of post	Consultant Surgery (BS-18) , Health Department GB, Ministry of Kashmir Affairs & Gilgit Baltistan.
Minimum Qualification & Experience:	i. MBBS or equivalent qualification from a University / Institute recognized by the PM&DC. ii. PM&DC Level-II (a) or (b) / Level-III or equivalent qualification in the relevant subject / specialty recognized by the PM&DC with clinical experience of three (3) years with Level-II and two (2) years with Level-III in the relevant specialty / field.

Part-I: (MCQ)**25 Marks**

25 MCQ Questions on Part-II.

Part-II: (Professional) (Descriptive)**75 Marks**Core courses of Level-II qualification in **Surgery****PAPER-II: PROFESSIONAL****Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-36/2025-R
Particulars of post	Consultant Paediatrics (BS-18) , Health Department GB, Ministry of Kashmir Affairs & Gilgit Baltistan.
Minimum Qualification & Experience:	i. MBBS or equivalent qualification from a University / Institute recognized by the PM&DC. ii. PM&DC Level-II (a) or (b) / Level-III or equivalent qualification in the relevant subject / specialty recognized by the PM&DC with clinical experience of three (3) years with Level-II and two (2) years with Level-III in the relevant specialty / field.

Part-I: (MCQ)**25 Marks**

25 MCQ Questions on Part-II.

Part-II: (Professional) (Descriptive)**75 Marks**Core courses of Level-II qualification in **Paediatrics**.

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

Case No.	F.4-37/2025-R
Particulars of post	Consultant Medicine (BS-18) , Health Department GB, Ministry of Kashmir Affairs & Gilgit Baltistan.
Minimum Qualification & Experience:	i. MBBS or equivalent qualification from a University / Institute recognized by the PM&DC. ii. PM&DC Level-II (a) or (b) / Level-III or equivalent qualification in the relevant subject / specialty recognized by the PM&DC with post qualification clinical experience of three (3) years with Level-II and two (2) years with Level-III in the relevant specialty / field.

Part-I: (MCQ)**25 Marks**

25 MCQ Questions on Part-II.

Part-II: (Professional) (Descriptive)**75 Marks**Core courses of Level-II qualification in **Medicine****PAPER-II: PROFESSIONAL****Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-38/2025-R
Particulars of post	Rehabilitation Specialist (BS-18) , National Institute of Rehabilitation Medicine, Islamabad, Ministry of National Health Services, Regulations & Coordination.
Minimum Qualification & Experience:	i. MBBS or equivalent qualification recognized by PM&DC ii. PM&DC level III qualification in Rehabilitation Medicine recognized by PM&DC. iii. Two (2) years post qualification experience in the relevant field.

Part-I: (MCQ)**25 Marks**

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

Part-II: (Qualification Based) (Descriptive)**50 Marks**Core courses of **MBBS Degree****Part-III: (Professional) (Descriptive)****25 Marks**Core courses of Level III qualification in **Rehabilitation Medicine**.

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

Case No.	F.4-48/2025-R
Particulars of post	Paediatric Surgeon (BS-18) , National Institute of Rehabilitation Medicine, Ministry of National Health Services, Regulations & Coordination.
Minimum Qualification & Experience:	i. MBBS or equivalent qualification recognized by PM&DC. ii. PM&DC Level-III qualification in the related speciality with two (2) years post qualification experience in the relevant field. OR PM&DC Level II (a) or Level II (b) in the related speciality with four (4) years post qualification experience in the relevant field.

Part-I: (MCQ)**25 Marks**

25 MCQ Questions on Part-II.

Part-II: (Professional) (Descriptive)**75 Marks**Core courses of Level-II qualification in **Paediatric Surgery****PAPER-II: PROFESSIONAL****Max Marks: 100****Time Allowed: 3 Hours**

Case No.	F.4-59/2025-R
Particulars of post	General Staff Officer, Grade-I (Classified Radiologist) (BS-19) , PET CT Scan Department, Armed Forces Institute of Radiology And Imaging, Ministry of Defence.
Minimum Qualification & Experience:	i. MBBS or equivalent qualification from a University recognized by PM&DC. ii. FCPS (Radiology) or equivalent qualification recognized/ registered by the PM&DC. iii. One (1) year Fellowship degree/ OJT in PET CT . iv. Seven (7) years post qualification working experience at any renowned medical imaging setup.

Part-I: (MCQ)**25 Marks**

25 MCQ Questions on Part-II.

Part-II: (Professional) (Descriptive)**75 Marks**Core courses of Specialization in **Radiology & PET CT**.

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

Case No.	F.4-73 /2025-R
Particulars of post	Neuro Physician (BS-18) , National Institute of Rehabilitation Medicine, Ministry of National Health Services, Regulations & Coordination.
Minimum Qualification & Experience:	i. MBBS or equivalent qualification recognized by PM&DC. ii. PM&DC Level-III qualification in the relevant specialty. iii. Two (2) years post qualification experience in the relevant field.

Part-I: (MCQ)**25 Marks**

25 MCQ Questions on Part-II.

Part-II: (Professional) (Descriptive)**75 Marks**Core courses of Level III qualification in the field of **Neuro Physician**.