

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. 04/2020

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
1.	33/2020	Inspector (BS-16), Airports Security Force, Cabinet Secretariat, (Aviation Division).	Bachelor's Degree.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II General Intelligence/ Professional Test = 80 marks	Part-I Grammar Usage, Sentence Structuring. Part-II <ul style="list-style-type: none"> • Basic Arithmetic <ul style="list-style-type: none"> – Algebra – Ratios – Percentages – Arithmetic Means • Current Affairs. <ul style="list-style-type: none"> – Issues/Challenges at National and International Level during the last 2 years • Pakistan Affairs & Islamic Studies <ul style="list-style-type: none"> – Basic Level knowledge • Security Measures to Maintain Law & Order Note : (Equal weightage for each topic at Part-II)
2.	36/2020	Computer Instructor (Male), (BS-17), F.G. High Schools, Directorate of Federal Government Educational Institutions, (Cantts/ Garissons), Ministry of Defence.	Second Class or Grade 'C' Master's Degree in Computer Science/ Information Technology or equivalent from a University recognized by the Higher Education Commission (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 Structure, Part-II (Masters Level) <ul style="list-style-type: none"> • Generations of Computer • Computer Hardware/Software, • Number System • C/C++ Language, • Visual Basic, • Windows 7, 8 or 10 Part-III <ul style="list-style-type: none"> • Teaching Techniques and Methodology, • Classroom Management and Discipline, • Testing and Evaluation,

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
3.	49/2020	Medical Officer (BS-17), Medical Department of Pakistan Railways (Railway Board), Ministry of Railways	MBBS or equivalent qualifications recognized by PMDC	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structure. 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.
4.	52/2020	Preventive Officer (BS-16) Federal Board of Revenue, Revenue Division.	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 speciality. 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 2 years • Pakistan Affairs & Islamic Studies <ul style="list-style-type: none"> – Basic Level knowledge • Basic MS Office Operation Note : (Equal weightage for each topic at Part-II)
5.	55/2020	Assistant Electronic Engineer (BS-16), Pakistan Meteorological Department, Cabinet Secretariat (Aviation Division).	i. Three (3) years post Matric Diploma in Electronics/ Instruments/ Mechatronics from a recognized institution. ii. Three (3) years post qualification experience in Operation & maintenance of electronic 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"> • Kirchhof's Law • Principle of Transformer • Diodes and Transistors • Illumination and its Unit • Rectifiers • Star and Delta Connections • Router and Armature • Impedance • Lightening Arrestor • Isolators and its Types. • PNP and NPN Junctions • Type of Oil used in Transformers

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
6.	56/2020	Assistant Communication Security Officer (BS-16) , Department of Communication Security, Cabinet Division.	Second Class or Grade 'C' Bachelor's Degree with Mathematics/ Electronics/ Physics/ Statistics or BCS or equivalent from a University recognized by the HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Operating System & System Software • Database Management • Probability • Number Theory • Basic Electronics • Boolean Algebra • Cryptographic Techniques
7.	58/2020	Communications Security Officer (BS-17) , Department of Communication Security, Cabinet Division.	Second Class or Grade 'C' Master's Degree in Computer Science/ Information Security/Information Technology/ Mathematics/Statistics/ Physics/ Electronics or equivalent from a University recognized by the HEC. OR Second Class or Grade 'C' Bachelor's Degree in Electrical/ Electronics/ Telecom/ Software/ Computer 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 <ul style="list-style-type: none"> • Operating System & System Software • Object Oriented Programming Languages • Database management • Digital Electronics • Data Communication • Algorithm Structure • Number Theory, Modular Maths and Finite Fields • Probability & Random Variables • Key Management • Boolean Algebra • Cryptographic Techniques
8.	67/2020	Medical Officer (Male) (BS-17 Plus 25% Special Pay), Health Department, Gilgit Baltistan, Ministry of Kashmir Affairs and Gilgit Baltistan.	MBBS or equivalent qualification from a recognized University/ College by 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.

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
9.	70/2020	Meteorologist , (BS-17), Pakistan Meteorological Department, Aviation Division, Cabinet Secretariat	i. Second Class or Grade 'C' Master's Degree in Meteorology/ Seismology/ Hydro-Meteorology/ Hydrology/ Geo-Physics/ Geology/ Geography/ Physical Chemistry/ Physics/ Mathematics/ Environment/ Space Science/ Agriculture Meteorology/ Computer Science from a University recognized by HEC. ii. Graduation with Physics or Mathematics from a University recognized by HEC.	Objective Type Test (MCQ) Part-I English =20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Meteorology, • Climatology, • Basics of Physics, • Basic Maths, • Environmental Studies, • Research/Analysis.
10.	72/2020	Physical Training Instructor (Female)	Second Class or Grade 'C' Master's Degree in Health & Physical Education or equivalent qualification from a University/ Institution recognized by HEC.	Objective Type Test (MCQ) Part-I English =20 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring.
11.	73/2020	Physical Training Instructor (Male) (BS-16), Federal Government Educational Institutions (FGEI) (Cantts/ Garrisons), Ministry Of Defence.	OR Second Class or Grade 'C' Bachelor's degree with Diploma in Physical Education or equivalent qualification from a University/ Institution recognized by HEC	Part-II Professional Test=80 marks	Part-II (Masters Level) <ul style="list-style-type: none"> • Curriculum Development in Physical Education, • Rules of games (Hockey, Volley Ball) • Basics of Human Anatomy • Administrative and Management in Sports, • Sports Nutrition, • Trauma and Rehabilitation, • Test, Measurement and Evaluation in Physical Education & Sports • Athletic Injuries, • Handicap Sports Organization

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
12.	74/2020	Trained Graduate Teacher (Male) (BS-16),	Second Class or Grade 'C' Bachelor's Degree in the relevant subject with B.Ed. from a university recognized by HEC	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Subject Test = 40 marks Part-III Professional Test=40 marks ▪ Note: In Urdu English part for 20 marks will not be included. There will be 60% subject Test and 40% Professional Test.	A) Mathematics A & B and Physics Part-I Grammar Usage, Sentence Structuring Part-II (Bachelor's Level) • Algebra • Mechanics • Matrices, Determinants and Linear Equations • Work and Energy • Angular Momentum • Gravitation • Waves, Sound and Light • Thermodynamics Part-III • Educational Psychology, • Class Room Management and Discipline, • Instructional Planning and Teaching Strategies, • Students Evaluation and Examination System, • Educational Guidance and Counselling.
13.	79/2020	Trained Graduate Teacher (Female) (BS-16), A) Mathematics A & B and Physics B) Chemistry, Botany, Zoology C) Computer Science with Math & Physics or Statistics D) English Literature E) Urdu F.G. Schools, Directorate of Federal Government Educational Institutions (Cantts/Garrisons), Ministry of Defence.			B) Chemistry, Botany and Zoology Part-I Grammar Usage, Sentence Structuring Part-II (Bachelor's Level) • Thermodynamics • Chemical Equilibrium • Atomic Structure & Periodic Table • Chemical Bonding • Algae & Fungi, • Bryophytes • Gymnosperms, • Angiosperms, • Plant Physiology, • Ecology • Viruses & Algae • Bryophyte & Protozoa Part-III • Educational Psychology, • Class Room Management and Discipline, • Instructional Planning and Teaching Strategies, • Students Evaluation and Examination System, • Educational Guidance and Counselling.

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
					<p>C) Computer Science with Math & Physics or Stat.</p> <p>Part-I Grammar Usage, Sentence Structuring</p> <p>Part-II (Bachelor's Level)</p> <ul style="list-style-type: none"> • Computer Architecture, • Operating System concepts, • Windows XP, Windows 7& 8, • System Analysis & Design, • Software Engineering, • Artificial Intelligence, • Security and Ethical issues • Data Structures, • Algebra • Mechanics • Ordinary Differential Equations • Matrices, Determinants and Linear Equations <p>Part-III</p> <ul style="list-style-type: none"> • Educational Psychology, • Class Room Management and Discipline, • Instructional Planning and Teaching Strategies, • Students Evaluation and Examination System, • Educational Guidance and Counselling. <hr/> <p>D) English Literature</p> <p>Part-I Grammar Usage, Sentence Structuring</p> <p>Part-II (Bachelor's Level)</p> <ul style="list-style-type: none"> • Vocabulary, • Syntax, • English Language Teaching, • Literacy Theory & Criticism • Short Stories (G.K.Chesterton (A Somewhat Improbable Story), O'Henry (The Gift of the Magi)) <p>Part-III</p> <ul style="list-style-type: none"> • Educational Psychology, • Class Room Management and Discipline, • Instructional Planning and Teaching Strategies, • Students Evaluation and Examination System, • Educational Guidance and Counselling.

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi												
					<p>E) Urdu. Part-I (Bachelor's Level)</p> <table border="0"> <tr> <td>اروڈ ڈیگرہ الفاظ</td> <td>☆</td> </tr> <tr> <td>اروڈ پتے کا ڈھانچہ</td> <td>☆</td> </tr> <tr> <td>اروڈ قواعد کا استعمال</td> <td>☆</td> </tr> <tr> <td>غالبیات</td> <td>☆</td> </tr> <tr> <td>اقبالیات</td> <td>☆</td> </tr> <tr> <td>مدرس حالی</td> <td>☆</td> </tr> </table> <p>Part-II</p> <ul style="list-style-type: none"> • Educational Psychology, • Class Room Management and Discipline, • Instructional Planning and Teaching Strategies, • Students Evaluation and Examination System, • Educational Guidance and Counselling. 	اروڈ ڈیگرہ الفاظ	☆	اروڈ پتے کا ڈھانچہ	☆	اروڈ قواعد کا استعمال	☆	غالبیات	☆	اقبالیات	☆	مدرس حالی	☆
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14.	75/2020	Computer Instructor (Female), (BS-17), F.G. High Schools, Directorate of Federal Government Educational Institutions, (Cantts/Garrisons), Ministry of Defence.	Second Class or Grade 'C' Master's Degree in Computer Science/ Information Technology or equivalent from a University recognized by the Higher Education Commission (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 Structure, Part-II (Masters Level) <ul style="list-style-type: none"> • History of Computers • Generations of Computer • Computer Hardware/Software, • Number System • C/C++ Language, • Visual Basic, • Windows 7, 8 or 10 Part-III <ul style="list-style-type: none"> • Teaching Techniques and Methodology, • Classroom Management and Discipline, • Testing and Evaluation, 												

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
15.	77/2020	Secondary School Teacher (SST) (Female) (BS-17),	Second Class or Grade 'C' Master's Degree with B.Ed or equivalent qualification from a University recognized by HEC.	Objective Type Test (MCQ) Part-I English =20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> Perspectives of Education in Pakistan School Administration & Supervision Planning & Management in Education Educational Psychology Curriculum Development & Assessment Teaching Methodology Classroom Management Educational Measurement & Evaluation Research Techniques in Education Educational System in Pakistan Educational Guidance & Counselling
16.	78/2020	Secondary School Teacher (SST) (Male) (BS-17), F.G. Schools, Directorate of Federal Government Educational Institutions (Cants/ Garrisons), Ministry of Defence.	OR M.A (Education)/ M.A (EPM) from a University recognized by HEC.		
17.	80/2020	MIS Officer (BS-16), Federal Board of Revenue, Revenue Division.	Second Class or Grade 'C' Master's degree in Computer Science/Information Technology or equivalent from a University recognized by HEC. OR Second Class or Grade 'C' Bachelor's Degree in Computer science/ Information Technology or equivalent from a University recognized by HEC.	Objective Type Test (MCQ) Part-I English =20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structure, Part-II (Masters Level) <ul style="list-style-type: none"> Software Research and Development, Program Logic, Visual Basic, C++, Java, Unix/Red Hat Linux , Operating System, Computer Network and Internet, Computer Graphics and Algorithms, Development of Basic Algorithm, Analyzing Problems.
18.	82/2020	Assistant Director (BS-17), Federal Public Service Commission.	Second Class or Grade 'C' Master's 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 2 years Pakistan Affairs & Islamic Studies <ul style="list-style-type: none"> Basic Level knowledge Basic IT knowledge. FPSC Ordinance 1977

Schemes and Syllabi for Written Examination (Descriptive) for All Posts in BS-18 & BS-19 included in Consolidated Advertisement No. 04/2020

PAPER-I: ENGLISH

Max Marks: 100

Time Allowed: 3 Hours

(i) **English Essay-50 Marks:** Candidates will be required to write an Essay in English comprising **1500 words** from a set of **six given topics**. Candidates are expected to reflect comprehensive and research based knowledge on a selected topic. Candidate's articulation, expression and technical approach to the style of English Essay writing will be examined.

(ii) **English (Composition and Précis)-50 Marks:**

The examination will test the candidate's abilities to handle Précis Writing, Reading Comprehension, Sentence Structuring, Translation, Grammar and Vocabulary, etc.

Précis Writing (10 marks): A selected passage with an orientation of generic understanding and enough flexibility for compression shall be given for précising and suggesting an appropriate title.

Reading Comprehension (10 marks)

A selected passage that is rich in substance but not very technical or discipline-specific shall be given, followed by five questions, each carrying 2 marks.

Grammar and Vocabulary (10 marks): Correct usage of Tense, Articles, Prepositions, Conjunctions, Punctuation, Phrasal Verbs, Synonyms and Antonyms etc.

Sentence Correction (5 marks): Ten sentences shall be given each having a clear structural flaw in terms of grammar or punctuation. The candidates shall be asked to rewrite them with really needed correction only, without marking unnecessary alterations. No two or more sentences should have exactly the same problem, and 2-3 sentences shall be based on correction of punctuation marks.

Grouping of Words (5 marks): A random list of ten words of moderate standard (neither very easy nor utterly unfamiliar) shall be given, to be grouped by the candidates in pairs of those having similar or opposite meaning, as may be clearly directed in the question.

Pairs of Words (5 marks): Five pairs shall be given of seemingly similar words with different meanings, generally confused in communication, for bringing out the difference in meaning of any five of them by first explaining them in parenthesis and then using them in sentences.

Translation (5 marks): Ten short Urdu sentences involving structural composition, significant terms and figurative/idiomatic expressions shall be given, to be accurately translated in English.

SUGGESTED READINGS

Sr. No.	Title	Author
1.	English Grammar in Use	Raymond Murphy (Cambridge University Press)
2.	Practical English Usage	M. Swan (Oxford University Press)
3.	The Little, Brown Handbook	H. Ramsey Flower & Jane Aaron (The Little, Brown & Co; Harper Collins)
4.	A University English Grammar	R. Quirk & S. Greenbaum (ELBS; Longmans)
5.	Write Better, Speak Better	Readers Digest Association
6.	Modern English in Action	Henry Christ (D.C. Heath & Co.)
7.	Exploring the World of English	Syed Saadat Ali Shah

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

Case No.	F.4-34/2020-R
Particulars of post	2nd Engineer (Electronics) (System Engineer PCBRF) (BS-18), Pakistan Navy, Ministry of Defence.
Minimum Qualification & Experience:	i. Bachelor of Engineering in Electrical/ Electronics/ Computer or equivalent from the recognized University. ii. Five (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: 25 Marks (MCQ)

- 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, LIFI 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.4-44/2020-R
Particulars of post	Senior Registrar (BS-18), Federal Government Polyclinic, Ministry of National Health Services, Regulations & Coordination. A. Gynae & Obstt B. Medicine C. Peads D. General Surgery
Minimum Qualification & Experience:	i. MBBS or equivalent qualification recognized by PMDC. ii. PM&DC level III qualification in respective subject like FCPS/ MD/ MS or other equivalent level III qualifications in the specialty recognized/ registered by the PM&DC. iii. Three (3) years post qualification experience as Registrar in any Government or Semi Government or Autonomous Organization.

For (A) Gynae/OBS**Part-I: 25 Marks (MCQ)**

- 25 MCQ Questions on Part-II & III.

Part-II: (Qualification Based) (Subjective)**50 Marks**Core courses of **MBBS Degree****Part-III: (Professional) (Subjective)****25 Marks**Core courses of Level III qualification in **Gynae/OBS**.**For (B) Medicine****Part-I: 25 Marks (MCQ)**

- 25 MCQ Questions on Part-II & III.

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

For (C) Paeds

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (Qualification Based) (Subjective)

50 Marks

Core courses of **MBBS Degree**

Part-III: (Professional) (Subjective)

25 Marks

Core courses of Level III qualification in **Paeds.**

For (D) General Surgery

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: (Qualification Based) (Subjective)

50 Marks

Core courses of **MBBS Degree**

Part-III: (Professional) (Subjective)

25 Marks

Core courses of Level III qualification in **General Surgery.**

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

Case No.	F.4-59/2020-R
Particulars of post	Deputy Director (Engineering) (BS-18), Pakistan Meteorological Department, Cabinet Secretariat (Aviation Division).
Minimum Qualification & Experience:	i. Ph.D in Electronics/ Instrument/ Mechatronics/ Mechanical from a university recognized by HEC. ii. One (1) year post qualification experience in Installation and maintenance of Electronics/ Mechanical equipment. OR i. M.S/ M.Phil in Electronics/ Instrument/ Mechatronics/ Mechanical from a university recognized by HEC. ii. Three (3) years post qualification experience in installation and maintenance of Electronics/ Mechanical equipment. OR i. B.E/ B.Sc. Engineering in Mechanical/ Electrical/ Electronics/ Instruments from a university recognized by HEC. ii. Five (5) years post qualification experience of repairing / Maintenance/ installation of Electronics/ Mechanical equipment.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

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

IV. Electricity and Magnetism

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

V. 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.

VI. Information Technology and MS Office

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

VII. Computer Communication & Networks

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

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

SUGGESTED READINGS

S. No.	Title	Author
1.	Electrical Technology	B.L. Theraja
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.	Fluid mechanics with engineering applications	Finnemore/ Franzini.
7.	Schaum Outline Series; Strength of Materials	William A. Nash
8.	Fluid Mechanics	Lewitt
9.	Manufacturing Processes for Engineering Materials	Kalpakjian
10.	MS Office 365 Handbook : 2013 Edition	Kevin Wilson
11.	Modern Operating Systems	Andrew S. Tanenbaum
12.	Introduction to Computer Networks	A. S. Tanenbaum
13.	Computer Networks and Internets	Douglas E. Comer
14.	Computer Architecture: A Quantitative Approach	Hennessy & Patterson
15.	Human Resource Management	H.T.Graham & Roger Bennett
16.	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.4-81/2020-R
Particulars of post	Director (BS-19), Management Services Wing, Establishment Division
Minimum Qualification & Experience:	i Second Class or Grade 'C' Master's degree in Public Administration/ Business Administration/ Administrative Science/ Economics/ Statistics/ Computer Science/ ACMA. ii Twelve (12) years post qualification experience in Management Analysis/ Financial Management/ Project Management/ Personnel Management/ Administrative Research/ Collection, Analysis, Interpretation of Statistical Data and Report Writing.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: 50 Marks (Subjective)

(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, the process of Control, Principles of Controlling; Principles Coordination; Machinery for Coordination; Problems of Coordination in Public Administration in Pakistan.
- VII. Civil Servant Act 1973 and Rules made thereunder;
- VIII. Public Procurement Ordinance and Rules 2004.

Part-III: 25 Marks (Subjective)
(Human Resource, Financial Management,
Quality Management and Information Technology)

I. Human Resource and Financial Management

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

II. Basic Concept of Quality Management

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

III. Information Technology and MS Office

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

SUGGESTED READINGS

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

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

Case No.	F.4-83/2020-R
Particulars of post	Principal/ Vice Principal/Headmaster (BS-19 Plus 25% Special Pay), Education Department, Gilgit Baltistan, Ministry of Kashmir Affairs and Gilgit Baltistan.
Minimum Qualification & Experience:	<p>i. Second Class or Grade 'C' Master's degree with B.Ed. (Hons)/ B.Ed./ M.Ed. or equivalent qualification from a university recognized by the HEC.</p> <p>ii. Twelve (12) years post qualification teaching experience including at least 3 ½ years of administrative experience in recognized educational Institutions.</p>

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: 50 Marks (Descriptive)

(Human Resource, Financial Management,
Quality Management and Information Technology)

I. Human Resource and Financial Management

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

II. Basic Concept of Quality Management

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

III. Information Technology and MS Office

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

Part-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.	Human Resource Management	H.T.Graham & Roger Bennett
2.	Management	James A.F.Stoner, R.Eward Freeman, Daniel R.Gilbert Jr.
3.	Understanding Computer: Today and Tomorrow	Deborah Morley, Charles Parker
4.	MS Office 365 Handbook: 2013 Edition	Kevin Wilson
5.	Research in Education	JW Best
6.	Integrating Education Technology into Teaching	Roblyer
7.	Curriculum Development	S. M. Shahid
8.	Educational Measurement and Evaluation	S. M. Shahid
9.	Educational Administration	S. M. Shahid

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

Case No.	F.4-84/2020-R
Particulars of post	Principal/ Vice Principal/Headmistress (BS-19 Plus 25% Special Pay), Education Department, Gilgit Baltistan, Ministry of Kashmir Affairs and Gilgit Baltistan.
Minimum Qualification & Experience:	<p>i. Second Class or Grade 'C' Master's degree with B.Ed. (Hons)/ B.Ed./ M.Ed. or equivalent qualification from a university recognized by the HEC.</p> <p>ii. Twelve (12) years post qualification teaching experience including at least 3 ½ years of administrative experience in recognized educational Institutions.</p>

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: 50 Marks (Descriptive)

(Human Resource, Financial Management,
Quality Management and Information Technology)

I. Human Resource and Financial Management

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

II. Basic Concept of Quality Management

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

III. Information Technology and MS Office

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

Part-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.	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