

FEDERAL PUBLIC SERVICE COMMISSION
(Curriculum & Research Wing)

Schemes and Syllabi for Screening/Professional Tests as well as Descriptive Examination
Relating to Posts Advertised under Consolidated Advertisement No. 08/2021

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
1.	130/2021	Assistant Director (Admin) (BS-17) , Plant Breeders Rights Registry, Ministry of National Food, Security & Research.	Second Class or Grade 'C' Master's degree in Public Administration / Business Administration / Commerce 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 1. Principles of Management 2. Human Resource Management 3. Financial Accounting 4. Rules of Business (as amended) 5. System of Financial Control and Budgeting 2006 6. Public Procurement Rules, 2004
2.	132/2021	Drug Inspector (BS-17) , Health Department, GB, Ministry of Kashmir Affairs and Gilgit Baltistan.	i. Second Class or Grade 'C' Master's Degree in Pharmacy recognized by Pharmacy Council of Pakistan. ii. Two (2) years post qualification experience in Pharmaceutical field. OR i. Second Class or Grade 'C' basic degree in Pharmacy recognized by Pharmacy Council of Pakistan. ii. Four years post qualification experience in Pharmaceutical 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 1. Physical Pharmacy, 2. Hospital Pharmacy, 3. Pharmaceutical Chemistry, 4. Pharmaceutical Quality Control & Management, 5. Physiology & Histology, 6. Application of Computer in Pharmacy.
3.	133/2021	Instructor (English) (BS-16) , Staff Welfare Organization, Establishment Division.	i. Bachelor's degree from a recognized University. ii. Speed of 80 w.p.m. in Shorthand (English) and 40 w.p.m in typing at 90% accuracy of actual test. iii. Two (2) years post qualification practical experience as English Stenographer.	1. Typing Test with minimum Speed of 40 W.P.M 2. Shorthand Test with minimum Speed of 80 W.P.M 3. Computer Literacy Test: i Microsoft Word (Typing, Formatting) ii Microsoft Excel (Typing, Graph, Calculations) iii Microsoft Power Point (Typing, Formatting, Inserting Objects)	35 Marks 35 Marks 10 Marks 10 Marks 10 Marks

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
4.	134/2021	Electronic Engineer (BS-17) , Pakistan Meteorological Department, Cabinet Secretariat (Aviation Division).	B.E. / B.Sc. Engineering in Mechanical / Electrical / Electronics / Instruments 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 1. Power & Digital Electronics. 2. Electronic Instrumentations. 3. Logic Design & Switching Theory. 4. Circuit Theory, Electric Current and Ohm's law 5. Electrostatics 6. Magnetic Circuits 7. Electrical Engineering Materials 8. Instruments and Measurements 9. Mechanical behaviour of materials 10. Heat transfer, Conduction & Convection 11. DC Generators. 12. Transformers. 13. Transmission and Distribution Cables. 14. High Voltage Engineering 15. Rectifiers and Convertors.
5.	135/2021	Administrative Officer (BS-17) , Pakistan Meteorological Department, Cabinet Secretariat (Aviation Division).	i. Second Class or Grade 'C' Master's Degree from a University recognized by the HEC. ii. Two (2) years post qualification experience in Admin./ Establishment/ Recruitment of Personnel / Budget & Accounts.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II 1. Human Resource Management 2. Civil Servants Act, 1973 and Rules made thereunder 3. Rules of Business, 1973 4. System of Financial Control and Budgeting 5. Public Procurement Rules, 2004 6. Basic Arithmetic & Computer/IT.
6.	136/2021	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 1. Kirchoff's Law 2. Principle of Transformer 3. Diodes and Transistors 4. Illumination and its Unit 5. Rectifiers 6. Star and Delta Connections 7. Router and Armature 8. Impedance 9. Isolators and its Types. 10. PNP and NPN Junctions 11. Type of Oil used in Transformers

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7.	137/2021	Seed Analyst (BS-17) , Federal Seed Certification and Registration Department, Ministry of National Food Security & Research.	Second Class or Grade 'C' Master's Degree in Agriculture in one of the subjects of Seed Technology, Plant Breeding, Plant Pathology, Horticulture, Plant Protection, Agriculture Extension, Entomology or M.Sc. (Botany).	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=60 marks Part-III General Intelligence Test=20 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II 1. Plant Breeding & Genetics 2. Plant varietal development 3. Plant varietal maintenance and propagation 4. Crop production Technology 5. Plant taxonomy 6. Seed Theology & Seed Physiology 7. Horticulture, Fruit plant production 8. Stress management in plants 9. Genetic modification in plants 10. Common pests and diseases in Pakistan Part-III 11. General Knowledge 12. Current Affairs. – Developments at National and International Levels in the last 1 year 13. Logical Reasoning and Analytical Ability
8.	138/2021	Dentist (BS-17) , Airports Security Force, Cabinet Secretariat (Aviation Division).	i. BDS or equivalent qualification recognized by PM&DC. ii. One (01) year House Job.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II 1. Core courses of BDS Degree Program. 2. Health Policies of the Government of Pakistan. 3. Care vs Cure for Health Management. 4. Major Challenges being faced by the Health Sector in Pakistan.

Schemes and Syllabi for Written Examination (Descriptive) for All Posts in BS-18 & BS-19 included in Consolidated Advertisement No. 08/2021

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.4-131/2021-R
Particulars of post	Assistant Scientific Adviser (BS-18) , Ministry of Science & Technology.
Minimum Qualification & Experience:	i Second Class or Grade 'C' M.Sc. in Natural Sciences or equivalent qualification from University recognized by HEC. ii Five (5) years post qualification experience in Research & Development/ Science & Technology Management.

Part-I: 25 Marks (MCQ)

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

Part-II: (Research and Planning) 25 Marks (Descriptive)**i. Communication Skills, Technical Writing and Presentation Skills**

Paragraph writing, Essay writing, Translation skills, , Academic writing, Technical Report writing, Progress report writing,

ii. Planning and Managementa) Project Management

Project Management. Processes Integration Management, Project Plan Development, Project Plan Execution and Overall Change Control.

b) Time Management

Activity Definition, Activity Sequencing, Activity Duration Estimation, Schedule Development and Schedule Control.

c) Statistical Techniques

All statistical techniques related to Planning & Research

Part-III: 25 Marks (Descriptive)

(General Science)

I. Basic Inorganic Chemistry

Types of chemical bonding, ionic and covalent bonding, localized bond approach, theories of chemical bonding, valence bond theory (VBT), hybridization and resonance, prediction of molecular shapes using valence-shell electron-pair repulsion (VSEPR) model, Molecular orbital theory (MOT) applied to diatomic molecules, delocalized approach to bonding, bonding in electron deficient compounds, hydrogen bonding, Physical and chemical properties of p-block elements with emphasis on oxygen, carbon, chlorine, silicon, nitrogen, phosphorus and some of their representative compounds.

II. Metabolism

Digestion; absorption and transport of proteins, carbohydrates, lipids and nucleic acids. Glycolysis; citric acid cycle, gluconeogenesis, glycogenesis, glycogenolysis and photosynthesis.

Biosynthesis of triglycerides, phosphides, steroids and bile acids and ketone bodies.

Biochemical reaction of amino acids: decarboxylation, deamination, transamination and transmethylation, etc., urea cycle, creatine and uric acid synthesis.

Catabolism of nucleosides, DNA polymerases and other enzymes involves in metabolism.

III. **Mechanics**

- 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.

IV. **Modern and Quantum Physics**

- Waves and particles and De Broglie's Hypothesis; 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's 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;

Part-IV: 25 Marks (Descriptive)

(Human Resource, Financial Management & 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,

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.	Practical English Grammar	A.J. Thomson and A.V. Martinet.
2.	Reading. Advanced	Brian Tomlinson and Rod Ellis.
3.	Study Skills	Richard Yorky
4.	Writing. Advanced	Ron White.
5.	College Writing Skills	John Langan.
6.	Project Management Body of Knowledge	Project Management Institute (PMI) standards committee
7.	Software Project Management	S.A. Kelkar, A Concise Study, Prentice Hall of India.
8.	Textbook of Inorganic Chemistry 2013	Chaudhary, S. U.
9.	Stereochemistry (Basic Concepts in Chemistry) 2002	Morris, D. G.
10.	Perspectives of Modern Physics.	A. Beiser.
11.	Introduction to Quantum Mechanics	D. Griffiths
12.	Human Resource Management	H.T. Graham & Roger Bennett
13.	Management	James A.F. Stoner, R. Eward Freeman, Daniel R. Gilbert Jr.
14.	Governance	Anne Mette Kjær