

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. 03/2021

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
1.	70/2021	Network Engineer (BS-17), Directorate General, Immigration & Passports, Ministry of Interior.	i. 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 of four (4) years duration in Computer Science/ IT or equivalent from a University recognized by HEC. OR Second Class or Grade 'C' Bachelor's of Engineering in Electrical/ Electronics/ Software Engineering/ Computer Engineering/ System Engineering or equivalent. PEC registration required. 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	<u>Part-I</u> Vocabulary, Grammar Usage, Sentence Structuring <u>Part-II</u> <ul style="list-style-type: none"> • Introduction to Information Technology and Computers, • Computer HW & SW details, • Computer System Components and Communication System, • Information Security/Privacy, • Basic Concepts and Classification of Networks, • Layering: OSI, TCP/IP, Application Layer (Network application architectures, HTTP, FTP, Email, DNS), Transport Layer (Multiplexing in UDP and TCP) • Network Layer (The Internet Protocol, IPv4 Datagram, • Computer Organization & Architecture • Roles of an Operating Systems, • Web Application Issues (Accessibility, testing, performance, operation, maintenance, security)

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
2.	71/2021	Hardware Engineer (BS-17), Directorate General, Immigration & Passports, Ministry of Interior.	i. Second Class or Grade 'C' Bachelor's of Engineering in Electrical/ Electronics/ Computer Engineering / System Engineering or equivalent. PEC registration required. ii. Two (2) years post qualification experience in the relevant field.	Objective Type Test (MCQ) <u>Part-I</u> English =20 marks <u>Part-II</u> Professional Test =80 marks	<u>Part-I</u> Vocabulary, Grammar Usage, Sentence Structuring <u>Part-II</u> <ul style="list-style-type: none"> • Introduction to Information Technology and Computers, • Computer HW & SW details, • Computer System Components and Communication System, • Information Security/Privacy, • Basic Concepts and Classification of Networks, • Layering: OSI, TCP/IP, Application Layer (Network application architectures, HTTP, FTP, Email, DNS), Transport Layer (Multiplexing in UDP and TCP) • Network Layer (The Internet Protocol, IPv4 Datagram, • Computer Organization & Architecture • Roles of an Operating Systems, • Web Application Issues (Accessibility, testing, performance, operation, maintenance, security)
3.	72/2021	System Incharge (BS-17), Directorate General, Immigration & Passports, Ministry of Interior.	i. 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 of four (4) years duration in Computer Science/ IT or equivalent from a University recognized by HEC. OR Second Class or Grade 'C' Bachelor's of Engineering in Electrical/ Electronics/ Software Engineering/ Computer Engineering/ System Engineering or equivalent. PEC registration required. ii. Two (2) years post qualification experience in the relevant field.	Objective Type Test (MCQ) <u>Part-I</u> English =20 marks <u>Part-II</u> Professional Test =80 marks	<u>Part-I</u> Vocabulary, Grammar Usage, Sentence Structuring <u>Part-II</u> <ul style="list-style-type: none"> • Introduction to Information Technology and Computers, • Computer HW & SW details, • Computer System Components and Communication System, • Information Security/Privacy, • Basic Concepts and Classification of Networks, • Layering: OSI, TCP/IP, Application Layer (Network application architectures, HTTP, FTP, Email, DNS), Transport Layer (Multiplexing in UDP and TCP) • Network Layer (The Internet Protocol, IPv4 Datagram, • Computer Organization & Architecture • Roles of an Operating Systems, • Web Application Issues (Accessibility, testing, performance, operation, maintenance, security)

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
4.	73/2021	Assistant Director/ Research Officer (BS-17), Akhtar Hameed Khan, National Centre for Rural Development, Establishment Division.	Second Class or Grade 'C' Master's degree in any Social or Physical Science, Administrative Science, Agriculture and/ or its allied field or B.E., B.Sc Engineering or Agriculture.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II General Intelligence 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 Computer Operation in MS Office Note : (Equal weightage for each topic at Part-II)
5.	74/2021	Transport Officer (BS-16), Federal Public Service Commission.	i. Three years Post Matric Diploma in Automobile Engineering. ii. Five (5) years post qualification experience in the field of maintenance of vehicles.	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"> • Applied Mechanics • Automobile Engineering Drawing • Thermal and Hydraulic Engineering • Automotive Materials • Auto Engine • CAD in Automobile Engineering • Auto Repair/Maintenance • Vehicle and Transport Management
6.	76/2021	Medical Officer (BS-17), Federal General Hospital, Chak Shahzad, Islamabad. Ministry of National Health Services, Regulations & Coordination.	MBBS or equivalent qualification recognized by PM&DC.	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
7.	77/2021	Research Officer (BS-17), MVRDE, Ministry of Defence Production.	Bachelor's Degree in Computer System Engineering or Computer Software Engineering. OR Second Class or Grade 'C' M.Sc in Physics/ Chemistry/ Maths/ Computer Sciences/ Metallurgy	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"> • Basic principles of Physics and Chemistry • Linear Differential Equations • Linear Algebra • Vector Determinants • Integration and Power series solutions • Introduction to electronics: voltage sources, current sources, and Thevenin's theorem. • Data Transmission: Digital Signals, Analog Signals, Data encoding, Digital Data Communication techniques, Packet switching
8.	79/2021	Assistant Water Management Engineer (BS-17), Federal Water Management Cell, Ministry of National Food Security & Research.	i. Bachelor's degree in Civil/ Mechanical/ Agricultural Engineering or equivalent from the recognized University. ii. Registration with PEC.	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"> • Integrated Water Resource Management • Water Saving Techniques • Climate change impact on Agriculture and irrigation water • Farm Mechanization and Resource Conservation Techniques. • Climate smart technologies for agriculture • Alternative energy resources for agriculture • Food Security and Water nexus
9.	80/2021	Research Officer (BS-17), Devolution & Area Development (Rural Development and Local Planning Section), Ministry of Planning, Development and Special Initiatives.	Second Class or Grade 'C' Master's degree or equivalent qualifications in any of the following subjects: Agricultural Economics/ Economics/ Social Work/ Sociology / Rural Development. OR Bachelor's degree or equivalent qualifications in Civil Engineering or Agricultural Engineering.	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"> • Determinants of Rural Development. • Approaches to rural development. • Rural development program and policies in Pakistan. • Crop Management • Livestock Management • Resource Management • Methods of Sociological Research

Schemes and Syllabi for Written Examination (Descriptive) for All Posts in BS-18 & BS-19 included in Consolidated Advertisement No. 03/2021

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.	69/2021
Particulars of post	Senior Librarian (BS-18) , Akhtar Hameed Khan National Centre for Rural Development, Establishment Division.
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 Library Management.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

Part-II (Library and Information Science): 75 Marks (Descriptive)**I. 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.

II. 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.

III. 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.

IV. 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

V. 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.

VI. 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.	75/2021
Particulars of post	Deputy Agricultural Development Commissioner (BS-19) , Ministry of National Food, Security & Research.
Minimum Qualification & Experience:	<p>i. Second Class or Grade 'C' Master's degree in Agriculture/ Agricultural Economics or equivalent qualification from a University recognized by HEC.</p> <p style="text-align: center;">OR</p> <p>Second Class or Grade 'C' B.Sc (Hons.) degree in Agriculture/ Agricultural Economics (16 years qualification) or equivalent qualification from a University recognized by HEC.</p> <p>ii. Twelve (12) years post qualification experience in the field of Survey/ Agricultural Planning/ Production/ Marketing/ Research in the respective crops in Agricultural Extension/ Development.</p>

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

Part-II (Professional): 75 Marks (Descriptive)

- I. Challenges in Pakistan's Agriculture:** Present scenario and future prospects. Analytical overview: issues and strategies for improvement of crop management, livestock management, fisheries, resource management and rural development. Efficacy and strengthening of the R & D eco-system in Agriculture. Issues in Agricultural Extension. Farm mechanization in context of fragmented land holding. Issues in Post-harvest management of Agriculture Products.
- II. Elements of Climate and Relationship with Crop Growth:** Farming Systems, biological nitrogen fixation, soil profile, structure and texture, soil fertility, soil erosion and conservation, water logging and salinity
- III. Agricultural Economics:** Definition, nature and scope of agricultural economics; Agriculture as an industry, its peculiarities & role in national economy; Organization and structure of the agricultural Sector; Factors of production and their rewards; Theory of Production; Laws of return, and its significance in agriculture; Land utilization and land use policy;
- IV. Agricultural Marketing:** Basic concepts and principles of Agricultural Marketing and its role in Agricultural development; Marketing Infrastructure, Marketing Approaches and problems; Standardization and grading, Storage, transportation, and management. Marketing margins and profitability; market functionaries, marketing channels, price variation and stabilization; Review of agricultural marketing systems in Pakistan. Current Legislation; emerging trends in regulation of agri-markets; empowering the farmers through ICT.
- V. Nutrition:** Ecological problems of food resource production, resources and quality of foods, solutions in food insecurity, sustainable agriculture and food systems,

international programmes for improving malnutrition situation. Statistics on Nutrition in Pakistan.

VI. Agricultural Policies (Provinces): Agricultural policies of the provinces of Pakistan, Existing legislation and modern trends, Agri-Taxation and subsidies, trade policies for agricultural commodities, rural development policies.

VII. National Food Security Policy.

SUGGESTED READINGS

S. No.	Titles	Author
1.	Agriculture in Pakistan	Khan M. H.
2.	Manual of Plant Production	Abdul Manan.
3.	Principles of Field Crop Production	Martin., J.H. & Leonard, W.H.
4.	Diseases of Field Crops	Dickson, J.G
5.	Irrigation Principles & Practices	Isrealson, O.W. Vaughn, E. Hansen
6.	The Principles of Agronomy.	Harris, Franklin Stewart
7.	Food, Agriculture and Nutrition,	FAO. 1997. Italy
8.	Introduction to Agricultural Economics.	Penson, J. B., Capps, O. Rossen C. P. & Woodward, R.
9.	Principle of Marketing	Kotler, P. and Armstrong, G.
10.	Agricultural Policies in Developing Countries	Ellise, F.
11.	Agricultural Policy Manual: A discussion of Agricultural Policies for Development	Eckert, J. B.
12.	National Food Security Policy	Govt. of Pakistan www.mnfsr.gov.pk

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

Case No.	78/2021
Particulars of post	Deputy Food Security Commissioner (BS-19) , Ministry of National Food, Security & Research.
Minimum Qualification & Experience:	<p>i. Second Class or Grade 'C' Master's degree in Agriculture/ Agricultural Economics or equivalent qualification from a University recognized by HEC.</p> <p style="text-align: center;">OR</p> <p>Second Class or Grade 'C' B.Sc (Hons.) degree in Agriculture/ Agricultural Economics (16 years qualification) or equivalent qualification from a University recognized by HEC.</p> <p>ii. Twelve (12) years post qualification experience in the field of Survey/ Agricultural Planning/ Production/ Marketing/ Research in the respective crops in Agricultural Extension/ Development.</p>

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

Part-II (Professional): 75 Marks (Descriptive)

- I. Challenges in Pakistan's Agriculture:** Present scenario and future prospects. Analytical overview: issues and strategies for improvement of crop management, livestock management, fisheries, resource management and rural development. Efficacy and strengthening of the R & D eco-system in Agriculture. Issues in Agricultural Extension. Issues in Post-harvest management of Agriculture Product.
- II. Elements of Climate and Relationship with Crop Growth:** Farming Systems, biological nitrogen fixation, soil profile, structure and texture, soil fertility, soil erosion and conservation, water logging and salinity
- III. Agricultural Economics:** Definition, nature and scope of agricultural economics; Agriculture as an industry, its peculiarities & role in national economy; Organization and structure of the agricultural Sector; Factors of production and their rewards; Theory of Production; Laws of return, and its significance in agriculture; Land utilization and land use policy;
- IV. Agricultural Marketing:** Basic concepts and principles of Agricultural Marketing and its role in Agricultural development; Marketing Infrastructure, Marketing Approaches and problems; Standardization and grading, Storage, transportation, and management. Marketing margins and profitability; market functionaries, marketing channels, price variation and stabilization; Review of agricultural marketing systems in Pakistan. Current Legislation; emerging trends in regulation of agri-markets; empowering the farmers through ICT.
- V. Nutrition:** Ecological problems of food resource production, resources and quality of foods, solutions in food insecurity, sustainable agriculture and food systems, international programmes for improving malnutrition situation. Statistics on Nutrition in Pakistan.

VI. Agricultural Policies (Provinces): Agricultural policies of the provinces of Pakistan, Existing legislation and modern trends, Agri-Taxation and subsidies, trade policies for agricultural commodities, rural development policies.

VII. National Food Security Policy.

SUGGESTED READINGS

S. No.	Titles	Author
1.	Agriculture in Pakistan	Khan M. H.
2.	Manual of Plant Production	Abdul Manan.
3.	Principles of Field Crop Production	Martin., J.H. & Leonard, W.H.
4.	Diseases of Field Crops	Dickson, J.G
5.	Irrigation Principles & Practices	Isrealson, O.W. Vaughn, E. Hansen
6.	The Principles of Agronomy.	Harris, Franklin Stewart
7.	Food, Agriculture and Nutrition,	FAO. 1997. Italy
8.	Introduction to Agricultural Economics.	Penson, J. B., Capps, O. Rossen C. P. & Woodward, R.
9.	Principle of Marketing	Kotler, P. and Armstrong, G.
10.	Agricultural Policies in Developing Countries	Ellise, F.
11.	Agricultural Policy Manual: A discussion of Agricultural Policies for Development	Eckert, J. B.
12.	National Food Security Policy	Govt. of Pakistan www.mnfsr.gov.pk