**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. 02/2019**

<table>
<thead>
<tr>
<th>S. No</th>
<th>Case No. F.4-</th>
<th>Particulars of Post(s)</th>
<th>Qualifications for Posts</th>
<th>Test Specification</th>
<th>Topics of Syllabi</th>
</tr>
</thead>
</table>
| 1.    | 02/2019      | **Junior Scientific Officer**  
(BS-16), Armed Forces Institute of Pathology, GHQ Medical Directorate, Ministry of Defence. | Second Class or Grade ‘C’ M.Sc. Degree in Chemistry/ Biochemistry/ Microbiology or equivalent qualification from a university recognized by the Higher Education Commission. | Objective Type Test (MCQ)  
**Part-I**  
English = 20 marks  
**Part-II**  
General Science Test=80 marks | Part-I  
Grammar Usage, Sentence Structuring.  
**Part-II**  
- Thermodynamics  
- Nature, Properties and States of Matter  
- Gases, Liquids & Solids  
- Organic Chemistry  
- In-Organic Chemistry  
- Biochemistry  
- Human Physiology  
- Immunology  
- Mycology |
| 2.    | 08/2019      | **Junior Scientific Officer**  
(BS-17), Pakistan Navy, Ministry of Defence. | Bachelor’s Degree in Engineering in Electronics/ Chemical/ Electrical.  
OR  
i. Second Class or Grade ‘C’ Master’s Degree in Physics/ Chemistry/Textile Chemistry/ Metallurgy.  
ii. In case of Metallurgy knowledge of Ferrous and Non Ferrous materials and modern special technique.  
iii. In case of Textile Chemistry two (2) years post qualification experience in Textile Chemistry. | Objective Type Test (MCQ)  
**Part-I**  
English = 20 marks  
**Part-II**  
General Science Test=80 marks | Part-I  
Vocabulary, Grammar Usage, Sentence Structuring.  
**Part-II**  
- Matter and its Properties  
- Atomic Structure  
- Compounds and Bonding  
- Chemical Reactions  
- Aqueous Solutions  
- Acids and Bases  
- Phases of Matter  
- Organic Molecules  
- Organic Products (Polymers, Oil, Soaps, Paints, Varnishes and Detergents)  
- Radioactivity and its Applications  
- Ferrous and Non Ferrous marterials  
- Instrumentation (UV/Visible, FTIR, GC, HPLC, XRF, XRD, Pollution (Water and Air)) |
<table>
<thead>
<tr>
<th>S. No</th>
<th>Case No.</th>
<th>Particulars of Post(s)</th>
<th>Qualifications for Posts</th>
<th>Test Specification</th>
<th>Topics of Syllabi</th>
</tr>
</thead>
</table>
| 3.    | 20/2019  | **Scientific Officer** (BS-17), National Veterinary Laboratory, Ministry of National Food Security and Research | Second Class or Grade C Master’s Degree in Pharmacology/ Parasitology/ Bacteriology/ Microbiology/ Biochemistry/ Epidemiology.  
OR  
Second Class or Grade C Bachelor’s Degree in Animal Husbandry/ Veterinary Sciences/ DVM.  
OR  
B. Pharmacy. | Objective Type Test (MCQ)  
**Part-I**  
English ≥20 marks  
**Part-II**  
Professional Test ≥80 marks | **Part-I**  
Vocabulary, Grammar Usage, Sentence Structuring  
**Part-II**  
- Animal Breeding Plans & Policies in Pakistan  
- Animal Feed Resources  
- Histology & Embryology  
- Pharmacology & Toxicology  
- Livestock Economics & Business Management  
- Principles of Animals Nutrition  
- Systematic Virology, Histology & Pathology  
- Veterinary Entomology, Epidemiology & Public Health |
| 4.    | 28/2019  | **Programmer** (BS-17) Pakistan Meteorologist Department, Cabinet Secretariat (Aviation Division) | 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 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**  
- Fundamental Programming,  
- Data types,  
- Program Logic,  
- Development of Basic Algorithms,  
- Computer Networks and Internet,  
- Designing Solution & Testing,  
- Visual Basic, C++, Java, Unix/Red Hat Linux Operating System,  
- Multiple Browsers,  
- Search Engine Optimization,  
- Web Development |
| 5.    | 34/2019  | **Medical Officer** (Female) (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**  
- Core courses of MBBS Degree Program.  
- Care vs Cure for Health Management.  
- Major Challenges being faced by the Health Sector. |
<table>
<thead>
<tr>
<th>S. No</th>
<th>Case No.</th>
<th>Particulars of Post(s)</th>
<th>Qualifications for Posts</th>
<th>Test Specification</th>
<th>Topics of Syllabi</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>38/2019</td>
<td>Research Officer (BS-17), Industries &amp; Commerce Section, Ministry of Planning, Development and Reform.</td>
<td>Second Class or Grade ‘C’ Master’s Degree or equivalent qualifications in any of the following subjects: Economics (with Industrial Economics), Agricultural Economics, Physics, Chemistry, Mathematics, Mineral Science, Geology, Business Administration, Commerce and Accounting. <strong>OR</strong> Second Class or Grade ‘C’ Bachelor’s Degree or equivalent qualifications in Production/ Mechanical/ Chemical/ Textile/ Electrical/ Mining Engineering.</td>
<td>Objective Type Test (MCQ) <strong>Part-I</strong> English = 20 marks  <strong>Part-II</strong> Professional Test=80 marks</td>
<td><strong>Part-I</strong> Vocabulary, Grammar Usage, Sentence Structuring,  <strong>Part-II</strong> - Project Management and Evaluation tools - Project Evaluation, - Research Methodologies, - Economic Development of Pakistan with special focus on Industrial and Agricultural Sectors. - Organization of Economic Research, - Collection and Compilation of Data, - Methods of Data Analysis,</td>
</tr>
</tbody>
</table>
| 7.    | 41/2019  | Assistant Private Secretary (BS-16), Federal Investigation Agency, Ministry of Interior | i. Second Class or Grade ‘C’ Bachelor’s degree from a University recognized by HEC.  
ii. Minimum shorthand speed: 100 w.p.m. and typing speed: 50 w.p.m.  
iii. Must be computer literate.  
**Note:** Computer literacy means proficiency in M.S Office (M.S Word, Power Point & Excel). | - Typing Test with minimum Speed of 50 W.P.M  
- Shorthand Test with minimum Speed of 100 W.P.M  
- 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 |
| 8.    | 42/2019  | Medical Officer (BS-17), Pakistan Post Office Department, Ministry of Postal Services | i. MBBS Degree.  
i. Registration with PMDC 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** - 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. |
<table>
<thead>
<tr>
<th>S. No</th>
<th>Case No.</th>
<th>Particulars of Post(s)</th>
<th>Qualifications for Posts</th>
<th>Test Specification</th>
<th>Topics of Syllabi</th>
</tr>
</thead>
</table>
| 9.    | 44/2019  | Inspector (Tech) (BS-16), Intelligence Bureau. | i. B. Tech. in Electronics or equivalent in relevant subject from Government recognized Institute/University.  
ii. Two (2) years post qualification practical experience in the field of Electronics.  
OR  
Retired JCOs/Retired Foreman of Corps of Signals with ten (10) years experience in the related field. | Objective Type Test (MCQ)  
**Part-I**  
English = 20 marks  
**Part-II**  
General Intelligence=80 marks | **Part-I**  
Grammar Usage, Sentence Structuring  
**Part-II**  
• Basic Arithmetic.  
• Current Affairs.  
• Pakistan Affairs & Islamic Studies  
• Everyday/General Science  
• Basic Computer Operation in MS Office  
Note : (Equal weightage for each topic at Part-II) |
| 10.   | 47/2019  | Assistant Private Secretary (BS-16), Intelligence Bureau | i. Second Class or Grade ‘C’ Bachelor's degree from a University recognized by HEC.  
ii. Minimum shorthand speed: 100 w.p.m. and typing speed: 50 w.p.m.  
iii. Must be computer literate.  
**Note:** Computer literacy means proficiency in M.S Office (M.S Word, Power Point & Excel). | • Typing Test with minimum Speed of 50 W.P.M  
• Shorthand Test with minimum Speed of 100 W.P.M  
• Computer Literacy Test:  
  i. Microsoft Word (Typing, Formatting)  
  ii. Microsoft Excel (Typing, Graph, Calculations)  
  iii. Microsoft Power Point (Typing, Formatting, Inserting Objects) | **Part-I**  
Vocabulary, Grammar Usage, Sentence Structuring.  
**Part-II**  
• Basic Arithmetic.  
• Current Affairs.  
• Pakistan Affairs & Islamic Studies  
• Everyday/General Science  
Note : (Equal weightage for each topic at Part-II) |
| 11.   | 48/2019  | Assistant Director (BS-17), Intelligence Bureau. | Second Class or Grade ‘C’ Master's Degree or equivalent. | 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**  
• Basic Arithmetic.  
• Current Affairs.  
• Pakistan Affairs & Islamic Studies  
• Everyday/General Science  
Note : (Equal weightage for each topic at Part-II) |
<table>
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<tr>
<th>S. No</th>
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<th>Topics of Syllabi</th>
</tr>
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<tbody>
<tr>
<td>12.</td>
<td>52/2019</td>
<td>Research Officer (Power) (BS-17), Energy Wing, Planning and Development Division</td>
<td>Bachelor’s Degree of Engineering or equivalent qualifications in Electrical (Power)</td>
<td>Objective Type Test (MCQ) <strong>Part-I</strong> English = 20 marks <strong>Part-II</strong> Professional Test=80 marks</td>
<td><strong>Part-I</strong> Vocabulary, Grammar Usage, Sentence Structuring, Sentence Structuring <strong>Part-II</strong> Core courses of B.E Electrical, Planning, Policy formulation and analysis of power sector issues of Pakistan, Collection and compilation of data, Methods of data analysis.</td>
</tr>
<tr>
<td>14.</td>
<td>54/2019</td>
<td>Demonstrator (Female) (BS-16), Directorate of Federal Government Educational Institution Cantts/Garrisons), Ministry of Defence.</td>
<td>Second Class or Grade ‘C’ Bachelor’s Degree with Diploma in Library Science. OR Bachelor of Library Science.</td>
<td>Objective Type Test (MCQ) <strong>Part-I</strong> English = 20 marks <strong>Part-II</strong> General Science Test=80 marks</td>
<td><strong>Part-I</strong> Grammar Usage, Sentence Structuring <strong>Part-II</strong> Information Sources and Services, Cataloguing: Theory and Practice, Procurement and Maintenance of Library Books, Library Automation/Information Storage &amp; Retrieval, Research Methods &amp; Techniques for Librarians, Public Records, Rare Material &amp; their Conservation, Management of Serials Publications, Rules &amp; Procedure regarding Write Off the Library Losses</td>
</tr>
<tr>
<td>15.</td>
<td>55/2019</td>
<td>Librarian (Male) (BS-16), Federal Government Educational Institution (Cantts/ Garrisons), Ministry of Defence.</td>
<td>Second Class or Grade ‘C’ Bachelor’s Degree with Diploma in Library Science. OR Bachelor of Library Science.</td>
<td>Objective Type Test (MCQ) <strong>Part-I</strong> English = 20 marks <strong>Part-II</strong> Professional Test=80 marks</td>
<td><strong>Part-I</strong> Grammar Usage, Sentence Structuring <strong>Part-II</strong> Information Sources and Services, Cataloguing: Theory and Practice, Procurement and Maintenance of Library Books, Library Automation/Information Storage &amp; Retrieval, Research Methods &amp; Techniques for Librarians, Public Records, Rare Material &amp; their Conservation, Management of Serials Publications, Rules &amp; Procedure regarding Write Off the Library Losses</td>
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<td>S. No</td>
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<td>16.</td>
<td>58/2019</td>
<td><strong>Medical Officer (Male)</strong>&lt;br&gt;(BS-17 Plus 25% Special Pay), Health Department, Gilgit Baltistan, Ministry of Kashmir Affairs and Gilgit Baltistan.</td>
<td>MBBS or equivalent qualification from a recognized University/College by PMDC.</td>
<td>Objective Type Test (MCQ)&lt;br&gt;&lt;strong&gt;Part-I&lt;/strong&gt; English =20 marks&lt;br&gt;&lt;strong&gt;Part-II&lt;/strong&gt; Professional Test =80 marks</td>
<td><strong>Part-I</strong>&lt;br&gt;Vocabulary, Grammar Usage, Sentence Structuring&lt;br&gt;&lt;strong&gt;Part-II**&lt;br&gt;- Core courses of MBBS Degree Program.&lt;br&gt;- Health Policies of the Government of Pakistan.&lt;br&gt;- Care vs Cure for Health Management.&lt;br&gt;- Major Challenges being faced by the Health Sector.</td>
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<tr>
<td>17.</td>
<td>59/2019</td>
<td><strong>Senior Auditor</strong>&lt;br&gt;(BS-16), Pakistan Military Accounts Department, Ministry of Defence</td>
<td>Second Class or Grade ‘C’ Bachelor’s Degree in Business Administration (Finance/Accounting)/Commerce/Economics/Statistics/Mathematics or equivalent from a University recognized by HEC. OR ICMA Operational Level Certificate from ICMA after Graduation</td>
<td>Objective Type Test (MCQ)&lt;br&gt;&lt;strong&gt;Part-I&lt;/strong&gt; English = 20 marks&lt;br&gt;&lt;strong&gt;Part-II&lt;/strong&gt; Professional Test=80 Marks</td>
<td><strong>Part-I</strong>&lt;br&gt;Grammar Usage, Sentence Structuring&lt;br&gt;&lt;strong&gt;Part-II**&lt;br&gt;- Accounting Principles &amp; Procedures,&lt;br&gt;- Scrutiny of Record for Audit Purpose,&lt;br&gt;- Journal, ledger &amp; Cash Book,&lt;br&gt;- Annual Budget,&lt;br&gt;- Adjustment &amp; Depreciation,&lt;br&gt;- Financial Planning &amp; Cost Accounting,&lt;br&gt;- Head of Accounts, Re-appropriation of Accounts and Supplementary Grant,&lt;br&gt;- Settlement of Audit Objections&lt;br&gt;- Preparation of Pension Documents.&lt;br&gt;- Public Procurement Rules, 2004</td>
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<tr>
<td>S. No</td>
<td>Case No.</td>
<td>Particulars of Post(s)</td>
<td>Qualifications for Posts</td>
<td>Test Specification</td>
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</table>
| 18.   | 61/2019  | **Data Control Officer** (BS-16), Pakistan Military Accounts Department, 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.  
OR  
i. Second Class or Grade ‘C’ Bachelor’s degree in Mathematics/Statistics/Physics or equivalent with one (1) year post graduate diploma in Computer Science from an Institute/University recognized by the Higher Education Commission  
OR  
ii. Second Class or Grade ‘C’ Bachelor’s Degree in Computer Science/Information Technology or equivalent from a University recognized by the Higher Education Commission | Objective Type Test (MCQ)  
**Part-I**  
English =20 marks  
**Part-II**  
Professional Test=80 marks | Part-I  
Grammar Usage, Sentence Structuring  
Part-II  
- Electronic Data Processing  
- Management Information System  
- Networking  
- Data Communication  
- Introduction to Database  
- Operating System  
- Introductory Hardware & Software Concepts  
- Introductory Programming Concepts |
Scheme and Syllabus for Written Examination (Descriptive) for all Posts in BS-20 advertised under Consolidated Advertisement No. 02/2019

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<th>(i)</th>
<th>Case No.</th>
<th>F.4-27/2019-R</th>
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<tbody>
<tr>
<td>Particulars of post</td>
<td><strong>Chief /Joint Economic Adviser/Economic Consultant (BS-20), Economists Group, Ministry of Planning, Development and Reform.</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Minimum Qualification & Experience: | i. Second Class or Grade ‘C’ Master’s degree in Economics or equivalent qualifications in Economics from a University recognized by HEC.  

<table>
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<tr>
<th>(ii)</th>
<th>Case No.</th>
<th>F.4-37/2019-R</th>
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</thead>
<tbody>
<tr>
<td>Particulars of post</td>
<td><strong>Director General (BS-20), National Archives of Pakistan, Cabinet Division</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Minimum Qualification & Experience: | i. Second Class or Grade ‘C’ Master’s degree in Chemistry/ History/ Political Science/Pakistan Studies from a recognized University.  
ii. Two publications in the field of Archives.  
iii. Seventeen (17) years post qualification experience in a post in BS-17 and above OR equivalent including twelve (12) years experience in the Archives Management. |

**PAPER: ENGLISH (100 MARKS)**

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

**OR**

**Case Study:** Candidates will be given real situation case studies related to advertised posts/organization concerned and will be expected from the candidates to present (i) identification of issues (ii) evaluation of issues (iii) legal or case related theories (iv) evaluation of case facts if required and (v) possible solution of the case or writing judicial order, if the case so requires.
Schemes and Syllabi for Written Examination (Descriptive) for All Posts in BS-18 & BS-19 included in Consolidated Advertisement No. 02/2019

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**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Title</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>English Grammar in Use</td>
<td>Raymond Murphy (Cambridge University Press)</td>
</tr>
<tr>
<td>2.</td>
<td>Practical English Usage</td>
<td>M. Swan (Oxford University Press)</td>
</tr>
<tr>
<td>4.</td>
<td>A University English Grammar</td>
<td>R. Quirk &amp; S. Greenbaum (ELBS; Longmans)</td>
</tr>
<tr>
<td>5.</td>
<td>Write Better, Speak Better</td>
<td>Readers Digest Association</td>
</tr>
</tbody>
</table>
PAPER-II: PROFESSIONAL

Max Marks: 100
Time Allowed: 3 Hours

Case No. F.4-29/2019-R

<table>
<thead>
<tr>
<th>Particulars of post</th>
<th>Deputy Chief (BS-19), Water Resources Section, Ministry of Planning, Development and Reform.</th>
</tr>
</thead>
</table>

Minimum Qualification & Experience:

i. Second Class or Grade “C” Bachelor’s Degree or equivalent qualifications in Civil Engineering or Agricultural Engineering.

ii. Ten (10) years post qualification experience of operation, maintenance, drainage or research or planning relating to irrigation, drainage or flood control works of similar matters.

Part-I: (Research and Planning) 50 Marks

i. Communication Skills, Technical Writing and Presentation Skills

Paragraph writing, Essay writing, CV and job application, Translation skills, Study skills, Academic skills, Essay writing, Academic writing, Technical Report writing, Progress report writing, Presentation skills

ii. Planning and Management

a) Project Management


b) Scope Management

Initiation, Scope Planning, Scope Definition, Scope Verification and Scope Change Control.

c) Communications Management

Communications Planning, Information Distribution, Performance Reporting and Administrative Closure.

d) Risk Management

Risk Identification, Risk Quantification, Risk Response Development and Risk Response Control.

e) Lab Work

Computing Project Management Software, PERT, Gantt Chart/ Network, CPM, etc.

f) Statistical Techniques

All statistical techniques related to Planning & Research

Part-II: (Engineering) 50 Marks

I. Civil Engineering Fundamentals:

Structures; stress, strain, shearing force and bending moment concepts, beams, columns, footing. Simply supported and Cantilever beams, Pulleys and gears. Estimation, Quantity Surveying, Composite Schedule of Rates, Surveying and Levelling, Plain Tabling, Theodolite Survey;

II. Fundamental of Irrigation

Definition of irrigation, need for irrigation, sources of irrigation water, (surface water, groundwater and rainfall), utilization of water for agricultural purposes.
III. Indus Basin Irrigation System:
Components, operation and maintenance of Indus basin irrigation system, conveyance and distribution of irrigation water.

IV. Irrigation Structures:
Dams, barrages, Headworks, diversion structures, types and functions of outlets, desirable features/characteristics of outlets, design and construction of outlets, water measurement structures, energy dissipater, transition and erosion protection.

V. Canal Design and Maintenance:
Layout of canals, design of canals, Kennedy's and Lacy's theories, silt factor and friction factors, canal lining and its advantages, maintenance of canals.

VI. Water Losses:
Water losses in canals and watercourses, measurement of water losses and methods to alleviate water losses.

VII. Flood Protection:
Importance of floods in irrigation system operation, types of floods, damages caused by floods, methods of flood control and costing of flood protection structures.

SUGGESTED READINGS

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Title</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>Reading. Advanced</td>
<td>Brian Tomlinson and Rod Ellis.</td>
</tr>
<tr>
<td>5.</td>
<td>Study Skills</td>
<td>Riahard Yorky</td>
</tr>
<tr>
<td>7.</td>
<td>College Writing Skills</td>
<td>John Langan.</td>
</tr>
<tr>
<td>8.</td>
<td>Patterns of College Writing</td>
<td>Laurie G. Kirszner and Stephen R. Mandell.</td>
</tr>
<tr>
<td>10.</td>
<td>Project Management Body of Knowledge,</td>
<td>Project Management Institute (PMI) standards committee</td>
</tr>
<tr>
<td>15.</td>
<td>Irrigation and Drainage Engineering</td>
<td>Siddiqui, I. H.</td>
</tr>
<tr>
<td>16.</td>
<td>Irrigation Design and Practice</td>
<td>Withers, Bruce &amp; Vipond, S</td>
</tr>
<tr>
<td>17.</td>
<td>Irrigated Agriculture of Pakistan</td>
<td>Ahmad, N. and Chaudhry, G.R.</td>
</tr>
<tr>
<td>18.</td>
<td>Water Resources of Pakistan</td>
<td>Ahmad, N.</td>
</tr>
<tr>
<td>19.</td>
<td>Irrigation Theory and Practice</td>
<td>Michal, A.M.</td>
</tr>
<tr>
<td>20.</td>
<td>Irrigation and Water Power Engineering</td>
<td>Arora, R.K.</td>
</tr>
</tbody>
</table>
PAPER-II: PROFESSIONAL

Max Marks: 100  
Time Allowed: 3 Hours

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<tr>
<th>Case No.</th>
<th>F.4-32/2019-R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Particulars of post</td>
<td>Assistant Professor (Mathematics) (BS-18), Military College Jhelum, Ministry of Defence.</td>
</tr>
</tbody>
</table>
| 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 from a university recognized by HEC with five (5) year post qualification teaching experience at College/ University level. |

Part-I: (Mathematics)  
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-II: (Professional) 50 Marks

I. Development of Curriculum and Instructional Material

- Elements of Curriculum.
- Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives.

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
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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
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<td>1.</td>
<td>An Introduction to Vector Analysis</td>
<td>Khalid Latif,</td>
</tr>
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<td>2.</td>
<td>Introduction to Mechanics</td>
<td>Q.K. Ghorı</td>
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<td>3.</td>
<td>An Intermediate Course in Theoretical Mechanics</td>
<td>Khalid Latif,</td>
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<td>4.</td>
<td>Differential Equations with Boundary Value Problems</td>
<td>D. G. Zill and M. R. Cullen</td>
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<td>5.</td>
<td>Elementary Differential Equations</td>
<td>E.D. Rainville, P.E. Bedient and R.E. Bedient</td>
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<td>6.</td>
<td>Elements of Numerical Analysis</td>
<td>F. Ahmad and M.A Rana</td>
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<td>7.</td>
<td>Mathematical Methods</td>
<td>S. M. Yousaf, Abdul Majeed and Muhammad Amin</td>
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**PAPER-II: PROFESSIONAL**

Max Marks: 100

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<th>Particulars of post</th>
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<tbody>
<tr>
<td>Assistant Professor (Female) (Biology) (BS-18), Directorate of Federal Government Educational Institutions (Cantt/Garrisons) Colleges, Ministry of Defence.</td>
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**Part-I: (Biology) 50 Marks**

I. **Anatomy and Embryology**
   - Micro and megasporogenesis, pollination mechanism, fertilization, development of Embryo and Endosperm, Seed dispersal.

II. **Plant Physiology**
   - Photosynthesis: Plant pigments, Light reaction, CO2 fixation, Mechanism of photophosphorylation.
   - Respiration: Glycolysis, Kreb 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.
   - Introduction of Evolution, Evolutionary history, 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
- Nervous Coordination: Nervous system and Senses: Functional units of nervous system, Synapses junctions between nerves.
- Chemical Coordination: Endocrine System; Vertebrate endocrine glands and types of hormones, Mechanism of hormones action,

Part-II: (Professional) 50 Marks

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- Elements of Curriculum.

II. Process of Teaching and Teaching Strategies

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- Factors affecting Classroom Communication
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<td>5.</td>
<td>Growth and Differentiation in Plants</td>
<td>Phillips and Wareings</td>
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<td>6.</td>
<td>Animal behavior:- An Evolutionary Approach</td>
<td>John Alcock</td>
</tr>
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<td>7.</td>
<td>Biology</td>
<td>Campbell, N.A.</td>
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PAPER-II: PROFESSIONAL

Max Marks: 100

Time Allowed: 3 Hours

Case No. F.4-33-B/2017-R

Particulars of post
Assistant Professor (Female) (Computer Science) (BS-18), Directorate of Federal Government Educational Institutions (Cantt/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) year post qualification teaching experience at College/ University level
OR
Second Class or Grade ‘C’ Master’s Degree in the relevant subject from a University recognized by HEC with five (5) year post qualification teaching experience at College/ University level

Part-I: (Computer Science)

50 Marks

I. Computer Architecture
Microprocessor Bus Structure (Address/Data/Control), Registers and Flags, Storage Hierarchy (Main/Virtual/Cache/Secondary memory), Peripheral communication, CPU, ALU, Principles of Instruction Set Design, Multiprocessors & Thread Level Parallelism.

II. Object Oriented Programming
Data types, control structures, functions, arrays, classes, methods, object and encapsulation; constructors and destructors, operator and function overloading, virtual functions, derived classes, inheritance and polymorphism, I/O and file processing.

III. Data Structure and Algorithms
Stack and Queue, Sequential Search, Binary Search, Bubble sort, Merge sort, Quick sort, Insertion sort, Selection Sort, Linked Lists, Infix to postfix conversions, Expression tree construction, Tree traversals, Graph representation and traversal, Minimum spanning tree.

IV. Database Management Systems
Entity Relationship modeling, Relational data model and algebra, Structured Query language, Database design, functional dependencies and normal forms, concurrency control and recovery techniques, Database security and authorization.

V. Computer Communications and Networks

VI. Operating Systems
Process and CPU management, Multithreading, Deadlocks, Memory management and virtual memory, External Fragmentation, Paging and Demand Paging, File management systems, Scheduling and dispatch, Introduction to concurrency.
Part-II: (Professional) 50 Marks

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

II. Process of Teaching and Teaching Strategies
   ▪ Process of Classroom Communication
   ▪ Factors affecting Classroom Communication
   ▪ Barriers to Classroom Communications
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<td>Modern Operating Systems</td>
<td>Andrew S. Tanenbaum</td>
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<td>2.</td>
<td>Operating System Concepts</td>
<td>Addison-Wesley</td>
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<td>3.</td>
<td>Algorithms and Data Structures</td>
<td>N. Wirth</td>
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<td>4.</td>
<td>Data structures</td>
<td>Aaron M. Tanenbaum,</td>
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<td>Implementation and Management</td>
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<td>6.</td>
<td>Introduction to Computer Networks</td>
<td>A. S. Tanenbaum</td>
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<td>Computer Networks and Internets</td>
<td>Douglas E. Comer</td>
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**PAPER-II: PROFESSIONAL**

Max Marks: 100  
Time Allowed: 3 Hours

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<td>Assistant Professor (Female) (Islamiyat) (BS-18), Directorate of Federal Government Educational Institutions (Cantt/Garrisons) Colleges, Ministry of Defence.</td>
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**Part-I: (Islamic Studies) 50 Marks**

I. **Islam: the Code of Life**
- Salient features of Islamic;
  - Social System
  - Political System
  - Economic System
  - Judicial System
  - Administrative System
- Responsibilities of Civil Servants

II. **Study of Seerah**

Need and importance of the study of Seerah Prophet Mohammad (PBAH) as:
- The Role Model
- Merciful for the universe.
- Preacher
- Diplomat
- Teacher and Educationist
- Revolutionary Leader

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

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

50 Marks

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

II. Process of Teaching and Teaching Strategies
   - Process of Classroom Communication
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V. Research Methods in Education
• Scientific Method and its Application in Education
• Sampling Techniques:
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<td>1.</td>
<td>Islam: its meaning and Message</td>
<td>Khurshid Ahmad</td>
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<td>Islam: The Misunderstood Religion</td>
<td>Muhammad Qutub</td>
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<td>Towards Understanding Islam</td>
<td>Abul Aala Moudoodi</td>
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<td>4.</td>
<td>Ideals and Realities of Islam</td>
<td>Hussain Nasr</td>
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<td>5.</td>
<td>A brief Survey of Muslim Science and Culture</td>
<td>Muhammad Abdur –Rahman</td>
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<td>6.</td>
<td>Quranic Sciences</td>
<td>Afzalur Rahman</td>
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**Case No.** F.4-33-D/2017-R

**Particulars of post**
Assistant Professor (Female) (Health & Physical Education)  
(BS-18), Directorate of Federal Government Educational Institutions (Cantt/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) year post qualification teaching experience at College/ University level **OR**  
Second Class or Grade ‘C’ Master’s Degree in the relevant subject from a University recognized by HEC with five (5) year post qualification teaching experience at College/ University level

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**Part-I: (Health and Physical Education)  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, Periodisation 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

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

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

II. **Process of Teaching and Teaching Strategies**
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<td>1.</td>
<td>Health &amp; Physical Education.</td>
<td>Dr. A. Waheed Mughal</td>
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<td>2.</td>
<td>Education in Physical Education.</td>
<td>Shamshad Ahmed</td>
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<td>4.</td>
<td>Modern Measurement.</td>
<td>Osterlind J. Steven</td>
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<td>5.</td>
<td>Introduction to Measurement in PE and Exercise Science</td>
<td>Margaret J. Safrit PhD, Terry M. Wood PhD</td>
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<td>Physiology of Sports</td>
<td>Reilly T and Williams</td>
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<td>Shaver</td>
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**Part-I: (History) 50 Marks**

I. **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. **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. **Separation of East Pakistan**: Causes and Effects.


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

I. **Development of Curriculum and Instructional Material**
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<td>1</td>
<td>India’s Struggle for Independence</td>
<td>Chandre Bipin, 1989</td>
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<td>2</td>
<td>Wavell and the Days of the Raj: Britain’s Penultimate Viceroy in India,</td>
<td>Chawla, Muhammad Iqbal, 2011</td>
</tr>
<tr>
<td>3</td>
<td>The Charismatic Leader: Jinnah and the Creation of Pakistan</td>
<td>Hayat, Sikandar, 2007</td>
</tr>
<tr>
<td>4</td>
<td>Muslim Civilization of Indo-Pakistan.</td>
<td>Ikram, Shaikh Muhammad, 1966</td>
</tr>
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<td>5</td>
<td>Constitutional and Political History of Pakistan</td>
<td>Khan, Hamid, 2005</td>
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<td>6</td>
<td>The Military and Politics in Pakistan 1947-86</td>
<td>Rizvi Hassan Askari</td>
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Max Marks: 100
Time Allowed: 3 Hours

Case No. F.4-36/2019-R

<table>
<thead>
<tr>
<th>Particulars of post</th>
<th>Assistant Electronics Adviser (BS-18), Ministry of Science &amp; Technology</th>
</tr>
</thead>
</table>

Minimum Qualification & Experience:

1) Second Class or Grade ‘C’ M.Sc. in Physics with specialization in Electrical/Electronics or equivalent qualification from University recognized by HEC.

OR

Second Class or Grade ‘C’ B.E/B.Sc. (Engineering) in Electrical/Electronics/Telecommunication/Instrumentation/Control System/ Power/ Aerospace/Avionics/Mechatronics recognized by Pakistan Engineering Council (PEC).

2) Five (5) years post qualification experience in Research & Development/Science & Technology Management.

Part-I: (Research and Planning) 50 Marks

i. Communication Skills, Technical Writing and Presentation Skills

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

ii. Planning and Management

a) Project Management


b) Time Management

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

c) Risk Management

Risk Identification, Risk Quantification, Risk Response Development and Risk Response Control.

d) Procurement Management


e) Statistical Techniques

All statistical techniques related to Planning & Research

Part-II: 50 Marks

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

I. Human Resource and Financial Management


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**

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<td>14.</td>
<td>Understanding Computer: Today and Tomorrow</td>
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<td>16.</td>
<td>Governance</td>
<td>Anne Mette Kjær</td>
</tr>
</tbody>
</table>
## PAPER-II: PROFESSIONAL

Max Marks: 100  
Time Allowed: 3 Hours

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<thead>
<tr>
<th>Case No.</th>
<th>F.4-39/2019-R</th>
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<tbody>
<tr>
<td>Particulars of post</td>
<td>Assistant Chief (BS-18), Health Section, Ministry of Planning, Development and Reform.</td>
</tr>
</tbody>
</table>
| Minimum Qualification & Experience: | i. Second Class or Grade ‘C’ Master’s degree or equivalent qualification in Health Planning, Nutrition Planning. OR M.B.B.S. or equivalent.  
ii. Three (3) years post qualification experience of work and/ or research relating to medicine, surgery or public health or in planning and development in these fields. |

### Part-I: (Research and Planning)  50 Marks

i. **Communication Skills, Technical Writing and Presentation Skills**
   - Paragraph writing, Essay writing, CV and job application, Translation skills, Study skills, Academic skills, Essay writing, Academic writing, Technical Report writing, Progress report writing, Presentation skills

ii. **Planning and Management**
   a) **Project Management**
   b) **Scope Management**
      - Initiation, Scope Planning, Scope Definition, Scope Verification and Scope Change Control.
   c) **Risk Management**
      - Risk Identification, Risk Quantification, Risk Response Development and Risk Response Control.
   d) **Lab Work**
      - Computing Project Management Software, PERT, Gantt Chart/ Network, CPM, etc.
   e) **Statistical Techniques**
      - All statistical techniques related to Planning & Research

### Part-II: (Public Health)  50 Marks

i. **Meaning and Significance of Health Education**
   a. Definition and scope of Health Education
   b. Relationship of Health Education with Physical Education
   c. Importance of Health Education in Community

ii. **Community Health**
   a. Concepts in Community Health
   b. Health & Welfare
   c. Health & Development
   d. Infectious diseases, Epidemiology
   e. Disease Transmission
   f. Immunity
   g. Disease prevention and control
   h. Disinfection
i. Symptoms, causes and prevention of most common communicable diseases
j. Epidemiology of non-communicable diseases and condition

iii. Environment and Human Health
a. Toxic pollutants and their effect on health
b. Mechanisms of action of drugs producing toxic effects of drugs on human body
c. Carcinogenic agents
d. Chemicals and pesticides residues in food.
e. Biological effects of Radiation
f. Sources of pollution: Air, Water, Noise

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<tr>
<td>13.</td>
<td>Health Factors for College Students.</td>
<td>Maude Lee &amp; Heredge E T.</td>
</tr>
<tr>
<td>15.</td>
<td>Community Health.</td>
<td>Anderson and Mortengreen</td>
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<td>16.</td>
<td>Environmental Health,</td>
<td>Willgoose</td>
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PAPER-II: PROFESSIONAL

Max Marks: 100

Time Allowed: 3 Hours

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<tr>
<td>Particulars of post</td>
<td>Senior Librarian (BS-18), Intelligence Bureau</td>
</tr>
</tbody>
</table>
| Minimum Qualification & Experience: | i. Second Class or Grade ‘C’ Master’s degree in Library Science/ Information Science or equivalent qualification from a University recognized by HEC  
   ii. Five (5) years post qualification experience in BS-17 and above or equivalent in the relevant field.  
   OR  
   i. Second Class or Grade ‘C’ Bachelor’s Degree with Diploma in Library Science from a recognized University/ Institute.  
   ii. Eight (8) years post qualification experience in BS-17 and equivalent in the relevant field. |

Library and Information Science: 100 Marks

I. Information, Library and Society


II. Use of Emerging Technologies in Library


III. Organization of Information


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


SUGGESTED READINGS

<table>
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<tr>
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</table>
**Case No.** F.4-46/2019-R  
**Director (BS-19), Intelligence Bureau**

<table>
<thead>
<tr>
<th>Particulars of post</th>
<th>Minimum Qualification &amp; Experience:</th>
</tr>
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</table>
|                     | i. Second Class or Grade ‘C’ Master’s Degree in Strategic Studies/International Relations/Sociology/Political Science/History/ Pakistan Studies/Psychology/Public Administration/Economics/Electronics or equivalent qualification from a University recognized by HEC.  
  
ii. Twelve (12) years post qualification experience in BPS-17 and above in Government Department(s) including six (6) years experience in Intelligence functions. |
|                     | OR  
  
i. Ph. D. in Defence & Strategic Studies/International Relations/Political Science/History/Pakistan Studies from a University recognized by HEC.  
  
ii. Eight (8) years post qualification experience in BPS-17 and above in Government Department(s) including three (3) years experience in Intelligence functions. |

**Part-I: 50 Marks**  
(Human Resource, Financial Management, Quality Management and Information Technology)

I. **Human Resource and Financial Management**


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-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, the process of Control, Principles of Controlling; Principles of Coordination; Machinery for Coordination; Problems of Coordination in Public Administration in Pakistan.

VII. Civil Servant Act 1973 and Rules made thereunder;


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**PAPER-II: PROFESSIONAL**

Max Marks: 100  
Time Allowed: 3 Hours

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<tr>
<td>Particulars of post</td>
<td><strong>Deputy Director</strong> (BS-18), Intelligence Bureau</td>
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| Minimum Qualification & Experience: | i. Second Class or Grade ‘C’ Master’s Degree in Strategic Studies/International Relations/Sociology/Political Science/History/ Pakistan Studies/Psychology/Public Administration/Economics/Electronics or equivalent qualification from a University recognized by HEC.  
| | ii. Five (5) years post qualification experience in BPS-17 and above in Government Department(s) including three (3) years experience in Intelligence functions.  
| | OR  
| | i. M.Phil. in Defence & Strategic Studies/International Relations/Political Science/History/Pakistan Studies.  
| | ii. Three (3) years post qualification experience in BPS-17 and above in Government Department(s) including two (2) years experience in Intelligence functions. |

---

**Part-I: 50 Marks**  
(Human Resource, Financial Management, Quality Management and Information Technology)

**I. Human Resource and Financial Management**


**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**

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(Public Administration & Office Management)

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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;

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VII. Civil Servant Act 1973 and Rules made thereunder;


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PAPER-II: PROFESSIONAL

Max Marks: 100

Time Allowed: 3 Hours

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<td>Particulars of post</td>
<td>Assistant Chief (BS-18), Education Section, Ministry of Planning, Development and Reform.</td>
</tr>
<tr>
<td>Minimum Qualification &amp; Experience:</td>
<td>i. Second Class or Grade ‘C’ Master’s Degree or equivalent qualification in Education or Second Class or Grade ‘C’ Master’s Degree or equivalent qualification in any discipline with Bachelor’s Degree or equivalent qualification in Education.</td>
</tr>
<tr>
<td></td>
<td>ii. Three (3) years post qualification experience of work and/or research relating to Education or in planning or development in Education.</td>
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Part-I: (Research and Planning) 50 Marks

i. Communication Skills, Technical Writing and Presentation Skills

Paragraph writing, Essay writing, CV and job application, Translation skills, Study skills, Academic skills, Essay writing, Academic writing, Technical Report writing, Progress report writing, Presentation skills

ii. Planning and Management

a) Project Management


b) Scope Management

Initiation, Scope Planning, Scope Definition, Scope Verification and Scope Change Control.

c) Time Management

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

d) Risk Management

Risk Identification, Risk Quantification, Risk Response Development and Risk Response Control.

e) Lab Work

Computing Project Management Software, PERT, Gantt Chart/Network, CPM, etc.

f) Statistical Techniques

All statistical techniques related to Planning & Research

Part-II: (Education) 50 Marks

I. Development of Curriculum and Instructional Material

- Elements of Curriculum.

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

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