

**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. 07/2020**

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
1.	109/2020	Lecturer (Home Economics) (Female) (BS-17) Federal Government Colleges for Women, Federal Directorate of Education, Ministry of Federal Education And Professional Training.	Second Class or Grade 'C' Master's degree or equivalent in the relevant subject.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Subject Test = 50 marks Part-III Professional Test = 30 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring Part-II (Masters Level) <ul style="list-style-type: none"> ▪ Introduction to Home Economics ▪ Fundamentals of Food and Nutrition ▪ Nutrition Health and Prevention ▪ Entrepreneurship for home based industry ▪ House Keeping Management ▪ Methods of Research in Home Economics ▪ Childcare and Development Guidance ▪ Family Problems and Intervention strategies Part-III <ul style="list-style-type: none"> ▪ Teaching Techniques and Methodology ▪ Classroom Management and Discipline ▪ Testing and Evaluation
2.	110/2020	System Operator (BS-16), Federal Public Service Commission.	Second Class or Grade 'C' Bachelor's Degree in Computer Science or Information Technology or equivalent qualification from a University recognized by the HEC.	Objective Type Test (MCQ) Part-I English =20 marks Part-II Professional Test=80 marks	Part-I Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> • Use of Microsoft Office • Application and System Software • Arithmetic Logical Unit, Memory (RAM, ROM) Types of RAM, Ports etc • Input and Output Devices • Storage and Multimedia • Network & Security Issues • Microsoft Windows

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
3.	124/2020	Project Officer (BS-17), Anti-Narcotics Force, Ministry of Narcotics Control.	i. Second Class or Grade 'C' Master's Degree in Sociology/ Anthropology/ Social Work. ii. Two (2) years post qualification experience in one of the above fields.	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"> Community Organization and Development, Social Research & Statistics, Social Welfare Policy and Administration, Methods of Counselling & Guidance Services Institution of Family & Marriage: Types, Structure, Family Organization Methods and scope of Rehabilitation Social Problems in Pakistan
4.	125/2020	Assistant Architect (BS-17), Pak PWD, Ministry of Housing & Works.	Bachelor's Degree in Architecture or equivalent OR Associate of the Royal Institute of British Architects OR Member of a recognized Institute of Architects	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"> Theory of Architecture Architectural Design Materials & Construction Structure for Architects Urban Design and Planning Landscape Architecture Computer Applications in Architecture
5.	130/2020	Librarian (BS-16), Directorate General of Special Education, Ministry of Human Rights.	Second Class or Grade 'C' Bachelor's Degree in Library Science or equivalent OR Second Class or Grade 'C' Bachelor's Degree with one year Diploma in Library Science.	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"> Information Sources and Services Cataloguing: Theory and Practice Procurement and Maintenance of Library Books Library Automation/Information Storage & Retrieval Research Methods & Techniques for Librarians Public Records, Rare Material & their Conservation Management of Serials Publications Rules & Procedure regarding Write Off the Library Losses

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
6.	131/2020	Inspector Customs/ Intelligence Officer (BS-16), Revenue Division, Federal Board of Revenue.	i. Second Class or Grade 'C' Bachelor's degree from a recognized University with Economics, Commerce, Statistics, Accounting, Computer Science, Law, Pharmacy, Chemistry or Physics as one of the subjects or B.Sc. Engineering in any specialty. ii. Computer literacy up to the level of MS Word, MS Power Point and MS Excel.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II General Intelligence Test = 80 marks	Part-I Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> ▪ Basic Arithmetic <ul style="list-style-type: none"> – Algebra – Ratios – Percentages – Arithmetic Means ▪ Current Affairs. <ul style="list-style-type: none"> – Issues/Challenges at National and International Level during the last 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)
7.	133/2020	Assistant Director (BS-17) Pakistan Manpower Institute, Ministry of Federal Education & Professional Training.	i. Second Class or Grade 'C' Master's Degree in Economics/ Statistics/ Management Science/ Public Administration/ Business Administration/ International Relation/ Sociology/ Political Science/ Computer Science or equivalent from any recognized University. ii. Two (2) years post qualification experience in research or training in relevant field.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring, Part-II <ul style="list-style-type: none"> • Research Methodologies • Report Writing and Presentation Skill, • Secretariat Instructions & Office Procedure • Rules of Business • Government Servants (Efficiency & Discipline) Rules, 1973 • Project management • Human Recourse Management/Development • Rules for use of Staff Cars • Revised Leave Rules 1980 • Public Procurement Rules, 2004 • Harassment of Women at the Work Place Act, 2010
8.	134/2020	Dental Surgeon (BS-17), National Institute of Rehabilitation Medicine, Islamabad, Ministry of National Health Services, Regulations & Coordination.	BDS 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 BDS Degree Program. • Health Policies of the Government of Pakistan. • Care vs Cure for Health Management. • Major Challenges being faced by the Health Sector in Pakistan.

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
9.	135/2020	Certified Orthotist (BS-17) National Institute of Rehabilitation Medicine, Islamabad, Ministry of National Health Services, Regulations & Coordination.	Second Class or Grade 'C' B.Sc./Bachelor's Degree in Orthotic Science from HEC recognized institution.	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"> Anatomy Physiology Material Technology Biomechanics Clinical Orthopaedics Physiotherapy Workshop management Mechanics
10.	136/2020	Principal Technician (Bio Technology) (BS-17) , National Institute of Rehabilitation Medicine, Islamabad, Ministry of National Health Services, Regulations & Coordination.	M.Sc in respective discipline OR B.Sc in respective discipline with five (5) years post qualification experience in the relevant filed.	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"> Microbiology Biochemistry Immunology Basic Genetics Quality Control Biomedical Engineering
11.	137/2020	Pharmacist (BS-17) , National Institute of Rehabilitation Medicine, Islamabad, Ministry of National Health Services, Regulations & Coordination.	i. Second Class or Grade 'C' Bachelor's Degree in Pharmacy. ii. Two (2) years post qualification experience in the relevant field.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring. Part-II <ul style="list-style-type: none"> Organic Chemistry Pharmaceutical Engineering Biochemistry Hospital Pharmacy Management Dispensing Pharmacy Anatomy, Physiology & Pathophysiology Molecular Biology
12.	138/2020	Statistical Officer (BS-17) , National Institute of Rehabilitation Medicine, Islamabad, Ministry of National Health Services, Regulations & Coordination.	i. Second Class or Grade "C" Master's Degree in Statistics/ Mathematics/ Economics. ii. Two (2) years post qualification experience in the relevant field.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring. Part-II <ul style="list-style-type: none"> Presentation of Data, Measures of Central Tendency and Dispersion, Index Numbers and Time Series Analysis Estimation and testing of hypothesis Regression and Correlation, Sampling Techniques, Experimental Design and analysis of Variance

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
13.	139/2020	Head Nurse (BS-17), Federal Government Polyclinic, Ministry of National Health Services, Regulations & Coordination.	Bachelor's Degree in Nursing or equivalent qualification recognized by the Pakistan Nursing Council.	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 Medical Sciences • General Nursing • Ward Administration • Hospitality of the Patients • Care vs. Cure for Health Management
14.	145/2020	Junior Civilian Security Officer (JCSO) (BS-16), OS Directorate, GHQ, Ministry of Defence.	Retd. JCO or equivalent of the Armed Forces. OR i. Second Class or Grade 'C' Bachelor's Degree or equivalent qualification from a University recognized by the HEC. ii. Two (2) years post qualification experience as Security Supervisor.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II General Intelligence & Professional Test = 80 marks	Part-I Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> ▪ Basic Arithmetic <ul style="list-style-type: none"> – Algebra – Ratios – Percentages – Arithmetic Means ▪ Current Affairs. <ul style="list-style-type: none"> – Issues/Challenges at National and International Level during the last 2 years ▪ Pakistan Affairs & Islamic Studies <ul style="list-style-type: none"> – Basic Level knowledge • Security Measures to maintain law & order Note : (Equal weightage for each topic at Part-II)
15.	146/2020	Medical Officer (BS-17), Federal Government Polyclinic, Ministry of National Health Services, Regulations & Coordination.	i. MBBS or equivalent qualification recognized by PM&DC. ii. One (1) 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 <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
16.	149/2020	Officer Incharge Laundry (BS-17) AFIC/NIHD Ministry of Defence.	Second Class or Grade 'C' Bachelor's Degree in Electrical Engineering from a University recognized by HEC. OR i. B. Tech. (Bachelor of Technology) in Electrical from an institute recognized by HEC. ii. First Class certificate in Boiler Engineering from a recognized institute. iii. Two (2) years post qualification practical experience in Mechanized Laundry.	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"> ▪ Logic Design & Switching Theory, ▪ Power & Digital Electronics, ▪ Electronic Devices and Structure, ▪ Oscillator & Circuit Theory, ▪ Electric Circuits, ▪ Electronic/ Electrical Instrumentation, ▪ Production Management & Quality Control ▪ Workshop Technology ▪ Power Transmission, ▪ AC. DC. Machines, ▪ Semiconductor Devices, ▪ Public Procurement Regulatory Authority (PPRA) Rules, 2004
17.	155/2020	Document Control Officer (BS-16), AFIC / NIHD, Ministry of Defence.	Second Class or Grade 'C' Bachelor's Degree in Social Sciences or equivalent qualification from a University recognized by HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II General Intelligence Test = 80 marks	Part-I Grammar Usage, Sentence Structuring Part-II <ul style="list-style-type: none"> ▪ Basic Arithmetic <ul style="list-style-type: none"> – Algebra – Ratios – Percentages – Arithmetic Means ▪ Current Affairs. <ul style="list-style-type: none"> – Issues/Challenges at National and International Level during the last 2 years ▪ Pakistan Affairs & Islamic Studies <ul style="list-style-type: none"> – Basic Level knowledge Note : (Equal weightage for each topic at Part-II)

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
18.	156/2020	Civilian Workshop Supervisor (CWS) Biomedical (BS-16), AFIC/NIHD, Ministry of Defence.	Second Class or Grade 'C' Master's Degree in Biomedical/ Electrical Engineering or equivalent qualification from a University recognized by HEC. OR i. Second Class or Grade 'C' Bachelor's Degree in Biomedical/ Electronics/ Electrical Engineering or equivalent qualification from a University recognized by HEC ii. Two (2) years post qualification experience in the operation maintenance and repair of Biomedical/ Electro Medical equipment.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Grammar Usage, Sentence Structuring. Part-II <ul style="list-style-type: none"> ▪ Biomechanics ▪ Bio-Instrumentation ▪ Rehabilitation Engineering: ▪ Electric Circuits ▪ Advanced Manufacturing Design Technology ▪ Electronic Devices and Circuits ▪ Workshop Practice ▪ Manufacturing Processes ▪ Digital Logic Design
19.	157/2020	Secretary Intensive Care (ITC Department) (BS-16), AFIC/NIHD, Ministry of Defence.	Second Class or Grade 'C' Master's Degree in Nursing or equivalent qualification from a University recognized by PNC. OR i. Second Class or Grade 'C' Bachelor's Degree in Nursing or equivalent qualification from a University recognized by PNC. ii. One (1) year diploma in Intensive Care Unit/ Coronary Care Unit from a recognized Institute.	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 Bachelor's degree in Nursing • Core courses of diploma in Intensive Care Unit/Coronary Care Unit. • Care vs Cure for Health Management. • Major Challenges being faced by the Health Sector in Pakistan.
20.	158/2020	Assistant Manager Marketing (BS-17), AFIC / NIHD, Ministry of Defence.	Second Class or Grade 'C' Master's Degree in Business Administration (Marketing) or equivalent qualification from a University recognized by HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring. Part-II <ul style="list-style-type: none"> • Principles of Marketing • Marketing Management • Consumer Behaviour • Sales Management • Industrial Marketing • Marketing Research

S. No	Case No. F.4-	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
21.	159/2020	Physicist/ Radiation Protection Officer (BS-16) AFIC/NIHD, Ministry of Defence.	Second Class or Grade 'C' Bachelor's Degree in Nuclear Engineering or Second Class or Grade 'C' Bachelor's Degree in Nuclear Physics or equivalent qualification from a University recognized by HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Grammar Usage, Sentence Structuring. Part-II <ul style="list-style-type: none"> • Introduction to Nuclear Physics • Radiation Interaction & Detection • Radiation Biology • Radiation Safety Principles and Techniques • Physics of Nuclear Medicine
22.	160/2020	Clinical Dietitian (BS-17) , AFIC/ NIHD, Ministry of Defence.	i. Second Class or Grade 'C' Master's Degree in Nutrition and Dietetics or equivalent qualification from a University recognized by HEC. ii. Two (2) years post qualification practical experience in the relevant field.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring. Part-II <ul style="list-style-type: none"> • Fundamentals of Food & Nutrition • Principles of Diet Therapy. • Planning & Preparation of Balanced Diet. • Physiological aspect of Nutrition • Energy Value of Foods • Sanitation and Hygiene • Regulation of food intake, • Nutritional requirements • Nutrition Health & Prevention
23.	161/2020	Statistical Officer (BS-17) , AFIC / NIHD, Ministry of Defence.	Second Class or Grade 'C' Master's Degree in Statistics or equivalent qualification from a University recognized by the HEC.	Objective Type Test (MCQ) Part-I English = 20 marks Part-II Professional Test=80 marks	Part-I Vocabulary, Grammar Usage, Sentence Structuring. Part-II <ul style="list-style-type: none"> • Presentation of Data, • Measures of Central Tendency and Dispersion, • Index Numbers and Time Series Analysis • Estimation and testing of hypothesis • Regression and Correlation, • Sampling Techniques, • Experimental Design and analysis of Variance

**Schemes and Syllabi for Written Examination (Descriptive) for Posts in
BS-20 advertised under Consolidated Advertisement No. 07/2020**

Case No.	F.4-118/2020-R
Particulars of post	Professor (BS-20 Plus Special Allowance Rs. 80,000/- and Health Allowance Rs.36,000/- per month), Federal Medical & Dental College, Ministry of National Health Services, Regulations & Coordination.
Minimum Qualification & Experience:	<ul style="list-style-type: none"> i. MBBS or equivalent medical qualifications recognized/ registered by the Pakistan Medical & Dental Council (PM&DC). ii. PM&DC recognized Level II b or Level III qualifications in the respective basic subjects. Or Equivalent PM&DC Level II b or Level III qualifications in the respective specialty approved for teaching by SRC and recognized/ registered by PM&DC. iii. Three (3) years post qualification teaching experience as Associate Professor in the respective subject or Nine (9) years post qualification teaching experience as an Assistant Professor in the respective subject. iv. A total of at least five research publications published in a medical journal approved by the PM&DC shall be acceptable. Dissertation/ Thesis shall not be counted. <p>CATEGORIES: (A) ANATOMY (B) BIOCHEMISTRY (C) COMMUNITY MEDICINE (D) FORENSIC MEDICINE (E) PHARMACOLOGY (F) PHYSIOLOGY</p>

PAPER: PROFESSIONAL (100 MARKS)

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

OR

Case Study: Candidates will be given real situation case studies related to advertised posts/ organization concerned and will be expected 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. 07/2020

PAPER-I: ENGLISH

Max Marks: 100

Time Allowed: 3 Hours

- (i) **English Essay-50 Marks:** Candidates will be required to write an Essay in English comprising **1500 words** from a set of **six given topics**. Candidates are expected to reflect comprehensive and research based knowledge on a selected topic. Candidate's articulation, expression and technical approach to the style of English Essay writing will be examined.
- (ii) **English (Composition and Précis)-50 Marks:**
The examination will test the candidate's abilities to handle Précis Writing, Reading Comprehension, Sentence Structuring, Translation, Grammar and Vocabulary, etc.
- Précis Writing (10 marks):** A selected passage with an orientation of generic understanding and enough flexibility for compression shall be given for précising and suggesting an appropriate title.
- Reading Comprehension (10 marks)**
A selected passage that is rich in substance but not very technical or discipline-specific shall be given, followed by five questions, each carrying 2 marks.
- Grammar and Vocabulary (10 marks):** Correct usage of Tense, Articles, Prepositions, Conjunctions, Punctuation, Phrasal Verbs, Synonyms and Antonyms etc.
- Sentence Correction (5 marks):** Ten sentences shall be given each having a clear structural flaw in terms of grammar or punctuation. The candidates shall be asked to rewrite them with really needed correction only, without marking unnecessary alterations. No two or more sentences should have exactly the same problem, and 2-3 sentences shall be based on correction of punctuation marks.
- Grouping of Words (5 marks):** A random list of ten words of moderate standard (neither very easy nor utterly unfamiliar) shall be given, to be grouped by the candidates in pairs of those having similar or opposite meaning, as may be clearly directed in the question.
- Pairs of Words (5 marks):** Five pairs shall be given of seemingly similar words with different meanings, generally confused in communication, for bringing out the difference in meaning of any five of them by first explaining them in parenthesis and then using them in sentences.
- Translation (5 marks):** Ten short Urdu sentences involving structural composition, significant terms and figurative/idiomatic expressions shall be given, to be accurately translated in English.

SUGGESTED READINGS

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

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

Case No.	132/2020
Particulars of post	Associate Professor (BS-19 Plus Special Allowance Rs. 65,000/- and Health Allowance Rs. 31,000/- Per Month), (a) Anatomy (b) Biochemistry (c) Community Medicine (d) Forensic Medicine (e) Pharmacology Federal Medical & Dental College, Ministry of National Health Services, Regulations & Coordination.
Minimum Qualification & Experience:	i. MBBS or equivalent medical qualifications recognized/registered by the Pakistan Medical & Dental Council (PM&DC). ii. PM&DC recognized Level II b or Level III qualifications in the respective basic subjects. or Equivalent PM&DC Level II a,b or level III qualifications in the respective specialty approved for teaching by SRC and recognized/ registered by PM&DC. iii. Five (5) years post qualification teaching experience as an Assistant Professor in the relevant subjects. iv. A total of at least three research publications are required. Only an original articles published in a medical journal approved by the PM&DC shall be acceptable. Dissertation/Thesis shall not be counted.

For (A) ANATOMY**Part-I: (MCQ)****25 Marks**

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

Part-II: (Qualification Based) (Descriptive)**50 Marks**Core courses of **MBBS Degree****Part-III: (Professional) (Descriptive)****25 Marks**Core courses of Level II (b) qualification in **Anatomy**.**For (B) BIOCHEMISTRY****Part-I: (MCQ)****25 Marks**

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

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

For (C) COMMUNITY MEDICINE

Part-I: (MCQ) 25 MCQ Questions on Part-II & Part-III.	25 Marks
Part-II: (Qualification Based) (Descriptive) Core courses of MBBS Degree	50 Marks
Part-III: (Professional) (Descriptive) Core courses of Level II (b) qualification in Community Medicine .	25 Marks

For (D) FORENSIC MEDICINE

Part-I: (MCQ) 25 MCQ Questions on Part-II & Part-III.	25 Marks
Part-II: (Qualification Based) (Descriptive) Core courses of MBBS Degree	50 Marks
Part-III: (Professional) (Descriptive) Core courses of Level II (b) qualification in Forensic Medicine .	25 Marks

For (E) PHARMACOLOGY

Part-I: (MCQ) 25 MCQ Questions on Part-II & Part-III.	25 Marks
Part-II: (Qualification Based) (Descriptive) Core courses of MBBS Degree	50 Marks
Part-III: (Professional) (Descriptive) Core courses of Level II (b) qualification in Pharmacology .	25 Marks

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

Case No.	140/2020
Particulars of post	Deputy Director (Training) (BS-18), Secretariat Training Institute, Cabinet Secretariat, Establishment Division.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Master's Degree from University recognized by HEC. ii. Five (5) years post qualification Instructional/ Administrative/ Research experience at BS-17 level. OR Ph. D Degree with one year or M. Phil Degree with two years post qualification Instructional/ Administrative/ Research experience respectively at BS-17 level.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: 25 Marks (Descriptive)

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

I. Human Resource and Financial Management

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

II. Basic Concept of Quality Management

ISO-9000, 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, Characteristics of Computer and related material; 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;

Part-III: (Professional) 50 Marks (Descriptive)**I. Curriculum Development and Implementation**

- Elements of Curriculum.
- Foundations of Curriculum: Philosophical Foundations; Psychological Foundations; Sociological Foundations; Economic Foundations and Technological Foundations.

- Relationship of Education and Curriculum
- Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials, Selection of Teaching-Learning Strategies, Implementation of the Curriculum, Evaluation of Curriculum
- Process of Curriculum Development in Pakistan
- Process of Development of Test books and National Textbook Policy

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
- Information and Communication Technologies (ICTs)

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

IV. Educational Administration and Supervision

- The Concept of Administration
- Educational Planning and Organization in Pakistan
- Approaches to Educational Administration: Democratic; Authoritarian; Laissez-faire
- Function of Administration
- Educational Supervision
- Agencies and Organizations promoting Education in Pakistan

V. Research Methods in Education

- Scientific Method and its Application in Education
- Sampling Techniques:
 - Probability Sampling Techniques: Random Sampling; Stratified Sampling; Cluster Sampling
 - Non-Probability Sampling Techniques: Systematic Sampling; Convenience Sampling; Purposive Sampling;
- Research Instruments: Questionnaire; Interview; Tests; Observation; Rating Scale
- Types of Research: Basic/Applied Research; Historical Research; Descriptive Research; Correlation Research; Causal-Comparative Research; Experimental Research; Action Research; Qualitative and Quantitative Research
- Research Proposal and Report Writing.

SUGGESTED READINGS

S. No.	Title	Author
1.	Human Resource Management	H.T.Graham & Roger Bennett
2.	Management	James A.F.Stoner, R.Eward Freeman, Daniel R.Gilbert Jr.
3.	Understanding Computer: Today and Tomorrow	Deborah Morley, Charles Parker
4.	MS Office 365 Handbook: 2013 Edition	Kevin Wilson
5.	Governance	Anne Mette Kjær
6.	Research in Education	JW Best
7.	Integrating Education Technology into Teaching	Roblyer
8.	Curriculum Development	S. M. Shahid
9.	Educational Measurement and Evaluation	S. M. Shahid
10.	Educational Administration	S. M. Shahid

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

Case No.	141/2020
Particulars of post	Director (BS-19), Pakistan Manpower Institute, Ministry of Federal Education & Professional Training.
Minimum Qualification & Experience:	<p>i. Second Class or Grade 'C' Master's Degree in Economics/ Statistics/ Human Resource Development/ Public Administration/ Business Administration/ International Relations/ Sociology/ Social Work/ Anthropology/ Political Science/ Computer Science or equivalent from any recognized University.</p> <p>ii. Twelve (12) years post qualification experience of teaching and/ or research and/ or training in the discipline of Human Resource Development/ Economics/ Labour Economics/ Economic Development.</p> <p>iii. Three research papers published in any reputed journal and/ or first author of 2 research studies published/ approved for documentation by any research and Development agency of repute or any research work or published academic work of equivalence in the discipline concerned.</p>

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II & III.

Part-II: 25 Marks (Descriptive)

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

I. Human Resource and Financial Management

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

II. Basic Concept of Quality Management

ISO-9000, 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, Characteristics of Computer and related material; 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;

Part-III: (Professional) 50 Marks (Descriptive)

I. Curriculum Development and Implementation

- Elements of Curriculum.
- Foundations of Curriculum: Philosophical Foundations; Psychological Foundations; Sociological Foundations; Economic Foundations and Technological Foundations.
- Relationship of Education and Curriculum
- Curriculum Development Process: Need Assessment, Formulation of Aims and Objectives Taxonomies of Educational Objectives, Selection of Content, Development of Curricular Materials, Selection of Teaching-Learning Strategies, Implementation of the Curriculum, Evaluation of Curriculum
- Process of Curriculum Development in Pakistan
- Process of Development of Test books and National Textbook Policy

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
- Information and Communication Technologies (ICTs)

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

IV. Educational Administration and Supervision

- The Concept of Administration
- Educational Planning and Organization in Pakistan
- Approaches to Educational Administration: Democratic; Authoritarian; Laissez-faire
- Function of Administration
- Educational Supervision
- Agencies and Organizations promoting Education in Pakistan

V. Research Methods in Education

- Scientific Method and its Application in Education
- Sampling Techniques:
 - Probability Sampling Techniques: Random Sampling; Stratified Sampling; Cluster Sampling
 - Non-Probability Sampling Techniques: Systematic Sampling; Convenience Sampling; Purposive Sampling;

- Research Instruments: Questionnaire; Interview; Tests; Observation; Rating Scale
- Types of Research: Basic/Applied Research; Historical Research; Descriptive Research; Correlation Research; Causal-Comparative Research; Experimental Research; Action Research; Qualitative and Quantitative Research
- Research Proposal and Report Writing.

SUGGESTED READINGS

S. No.	Title	Author
1.	Human Resource Management	H.T.Graham & Roger Bennett
2.	Management	James A.F.Stoner, R.Eward Freeman, Daniel R.Gilbert Jr.
3.	Understanding Computer: Today and Tomorrow	Deborah Morley, Charles Parker
4.	MS Office 365 Handbook: 2013 Edition	Kevin Wilson
5.	Governance	Anne Mette Kjær
6.	Research in Education	JW Best
7.	Integrating Education Technology into Teaching	Roblyer
8.	Curriculum Development	S. M. Shahid
9.	Educational Measurement and Evaluation	S. M. Shahid
10.	Educational Administration	S. M. Shahid

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

Case No.	142/2020
Particulars of post	Deputy Director (Reviewers) (BS-18), Laws of Pakistan Cell, Ministry of Law and Justice.
Minimum Qualification & Experience:	i. Second Class or Grade "C" LLM or equivalent qualification from a University recognized by the HEC. ii. Five (5) years post qualification experience in the field of law.

Part-I: 25 Marks (MCQ)

25 MCQ Questions on Part-II.

Part-II LAW: 75 Marks (Descriptive)**I. Definitions of Crime****II. All Provisions of:**

- i. Concept of arbitration, arbitration with or without intervention of court and in civil suits.
- ii. Establishment of Civil Courts with their Original & Appellate Jurisdiction.
- iii. The Code of Civil Procedure, 1908
- iv. Pakistan Penal Code, 1860
- v. Qanun-e-Shahdat Order, 1984
- vi. Criminal Procedure Code, 1898

SUGGESTED READINGS

S.No.	Title	Author
1.	Pakistan Penal Code, 1860	M. Mahmood
2.	Criminal Procedure Code, 1898	Shaukat Mahmood
3.	Law of Evidence	Justice (R) Khalid ur Rahman Khan as adapted from Principles and Digest of the Law of Evidence by M. Monir
4.	Qanun-e-Shahdat Order, 1984	
5.	The Code of Civil Procedure, 1908	Aamir Raza A. Khan
6.	The Arbitration Laws in Pakistan	M. Mahmood
7.	Civil Courts Ordinance, 1962	Nisar Ahmad Nisar

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

Case No.	143/2020
Particulars of post	Chief Documentation Officer (BS-19) , Academy of Educational Planning and Management, Ministry of Federal Education And Professional Training.
Minimum Qualification & Experience:	Ph.D in Library Science with eight (8) years post qualification experience in the relevant field. OR M.Phil in Library Science with ten (10) years post qualification experience in the relevant field. OR Second Class or Grade 'C' Master's Degree in Library Science with twelve (12) years post qualification experience in the relevant field.

Part-I: 25 Marks (MCQ)

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

Part-II: 25 Marks (Descriptive)

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

I. Human Resource and Financial Management

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

II. Basic Concept of Quality Management

ISO-9000, 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, Characteristics of Computer and related material; 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;

Part-III: (Library/Information Science) 50 Marks**I. Use of Emerging Technologies in Library**

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

Databases. Library Security Systems. Tele-lifts. Digitization Hardware and Software. Reprographic Technology.

ii. Organization of Information

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

iii. Basic Reference Sources

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

iv. Management of Library and Information Services

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

SUGGESTED READINGS

S. No.	Title	Author
1.	Human Resource Management	H.T. Graham & Roger Bennett
2.	Management	James A.F. Stoner, R. Edward Freeman, Daniel R. Gilbert Jr.
3.	Understanding Computer: Today and Tomorrow	Deborah Morley, Charles Parker
4.	MS Office 365 Handbook: 2013 Edition	Kevin Wilson
5.	Governance	Anne Mette Kjær
6.	The Electronic Library.	Rowley, J. (2001).
7.	Role of ICTs in Library and Information Science	A. Kaliammal & G. Thamaraiselvi
8.	Discovering computers 2007: A gateway to information.	Shelly, G. B., Cashman, T. J., & Vermaat, M. (2007).
9.	Guide to selecting and cataloging quality WWW resources for the small library.	Coleman, A. (2004).
10.	Jadid Catalogue Sazi	Khurshid, Anis (1993)
11.	Reference and information services: An introduction.	Bopp, R. E., & Smith, L. C. (2001).
12.	Introduction to reference work: Vol. 1,	Katz, W. A. (2002).
13.	Management basics for information professionals	Evans, G. E., Layzell Ward, P., Rugaas, B., & Evans, G. E. (2007).
14.	The Practical Library Manager.	Massis, B. E. (2003).

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

Case No.	144/2020
Particulars of post	Deputy Director (Urdu Stenography) (BS-18), Secretariat Training Institute, Islamabad, Establishment Division.
Minimum Qualification & Experience:	<ul style="list-style-type: none"> i. Second Class or Grade 'C' Bachelor's degree with Urdu as one of the subject from University recognized by HEC. ii. Minimum shorthand speed: 100 w.p.m. and typing speed: 40 w.p.m. with 90% accuracy iii. Certificate in Urdu Stenography from a recognized Institution. iv. Ten (10) years post qualification functional/ instructional experience of Urdu Stenography.

Professional Test: 100 Marks

S. No.	Detail of Topics	Marks
1.	Urdu Typing Test on Inpage with minimum speed of 40 w.p.m with 90% Accuracy	35
2.	Urdu Shorthand Test with minimum speed of 100 w.p.m	35
3.	Computer Literacy Test: (30 Marks)	
	i. In-page (Typing, Formatting)	10
	ii. Microsoft Excel (Typing, Calculation and Graphic)	10
	iii. Microsoft Power Point (Typing, Formatting, Inserting Objects)	10

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

Case No.	147/2020
Particulars of post	District Attorney (BS-18 Plus 25% Special Pay), Law & Prosecution Department, Gilgit Baltistan, Ministry of Kashmir Affairs and Gilgit Baltistan.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Bachelor's degree in law or equivalent qualification from a University/ College recognized by the HEC. ii. Five (5) years post qualification experience in Legal/ Judicial matters.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

Part-II (Law) (Subjective) : 75 Marks**I. Definitions of Crime****II. All Provisions of:**

- i. Concept of arbitration, arbitration with or without intervention of court and in civil suits.
- ii. Establishment of Civil Courts with their Original & Appellate Jurisdiction.
- iii. The Code of Civil Procedure, 1908
- iv. Pakistan Penal Code, 1860
- v. Qanun-e-Shahdat Order, 1984
- vi. Criminal Procedure Code, 1898

SUGGESTED READINGS

S.No.	Title	Author
1.	Pakistan Penal Code, 1860	M. Mahmood
2.	Criminal Procedure Code, 1898	Shaukat Mahmood
3.	Law of Evidence	Justice (R) Khalid ur Rahman Khan
4.	Qanun-e-Shahdat Order, 1984	as adapted from Principles and Digest of the Law of Evidence by M. Monir
5.	The Code of Civil Procedure, 1908	Aamir Raza A. Khan
6.	The Arbitration Laws in Pakistan	M. Mahmood
7.	Civil Courts Ordinance, 1962	Nisar Ahmad Nisar

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

Case No.	148/2020
Particulars of post	Chief Cardiac Perfusionist (BS-19), AFIC / NIHD, Ministry of Defence.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Master's Degree in Biological Sciences or equivalent qualification from a University recognized by HEC. OR Second Class or Grade 'C' Bachelor's Degree (16 years education) in Cardiac Perfusion or equivalent qualification from a University recognized by HEC. ii. Twelve (12) years post qualification experience in relevant field.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

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

- Cardiovascular Anatomy
- Cardiovascular Physiology
- Cardiovascular Microbiology
- Cardiovascular Haematology

II. Heart Diseases

- Congenital Heart Disease and Surgical Treatment
- Acquired Heart Disease and Surgical Treatment

III. Perfusion Technology

- The theoretical foundations of techniques and equipment for CPB
- The function, principles, problems, appropriate use and application of the various devices associated with CPB
- Various physical principles associated with pressure/flow relationships in the circulatory and extracorporeal systems
- Various devices and techniques utilized to reduce a patient's exposure to homologous blood transfusion
- Normal and the abnormal electrolyte values related to physiological disturbances caused by CPB, including the use of cardioplegic solutions
- The role of hyper-, hypo-, and normothermia during CPB,
- The application, calibration and use of various safety devices, measurement devices
- The ethical, professional and legal implications of the practice of perfusion care
- The interplay between and among the various participants within the surgical team
- Various techniques utilized in the preservation of the myocardium
- Basic Goals and Concepts In Myocardial Protection
- Heparinization anticoagulation and other methods of preserving the number and function of various coagulation processes within the blood during CPB
- The application of hemodilution CPB

- The benefits and detriments associated with CPB
- The various effects of CPB and air-blood interface
- The principles associated with ECMO support and its application as related to perfusion care

SUGGESTED READINGS

S. No.	Title	Author
1.	Cardiopulmonary Bypass: Current Concepts and Controversies.	John H Tinker
2.	Cardiovascular Physiology Concepts	Richard E Klabunde. Lippincott Williams& Wilkins
3.	Cardiopulmonary Bypass: Principles and Techniques of Extracorporeal Circulation	Christina T. Mora (Editor), R.A. Guyton, Springer
4.	Techniques in Extracorporeal Circulation	Philip Kay & Chris Munsch
5.	Daileys Notes on Blood	John F Dailey
6.	Cardiopulmonary Bypass Principles and Practice Second Edition,	Glenn P. Gravlee
7.	Mechanical Circulatory Support.	A Hodder Arnold Publication
8.	Manual of Clinical perfusion	

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

Case No.	150/2020
Particulars of post	Manager Food Services (BS-18), AFIC/NIHD, Ministry of Defence.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Master's Degree in Food Technology/ Nutrition and Dietetics or equivalent qualification from a University recognized by HEC. ii. Five (5) years post qualification experience in relevant field.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

Part-II (Professional) (Subjective) : 75 Marks**I. Nutrition and Dietetics**

Health and nutrition problems in Pakistan. Nutritional needs of vulnerable groups: infants, pregnant and lactating women, the aged. Dietary intolerance, disorders related to the affluent diet including coronary heart disease, dental caries, diabetes, hypertension and cancer. Problems of undernutrition including protein, energy, mineral and vitamin deficiencies. Physiological and nutritional aspects of dietary fibre, alcohol and food intolerance. Food as a source of nutrients: functions of nutrients, recommended dietary allowances. Diet, balanced diet, food groups (basic four, basic seven), food guide pyramid. Digestion: the alimentary tract, digestive juices and secretions. Absorption and metabolism of nutrients.

II. Food Processing and Preservation

Principles of food preservation. Preservation by high temperature. Canning, can manufacture. Preservation by low temperature: cold storage and freezing. Preservation by removal of moisture: sundrying, dehydration, freeze-drying, dehydrofreezing. Preservation by chemicals. Preservation by fermentation and irradiation.

III. Principles of Food Preservation

Preparatory operations. Browning – enzymatic and non-enzymatic. Preservation by canning; evaluation of canned foods, spoilage of canned foods. Preservation by low temperature: effect of temperature and relative humidity, cold storage temperature, effect of cold storage on food commodities and their packaging requirements. Defects in cold stored commodities. Calculation of refrigeration load. Preservation by freezing methods and equipment, packaging requirements, effects on foods, nutrient losses. Defects in frozen commodities. Use of chemical additives: non-preservative and preservative uses: application, properties, criteria for selection, mode of action, legitimate uses in food processing. Synthetic and natural food additives: Preservation by drying and dehydration; types of dryers, dehydration ratio, drying times, drying / dehydration of selected food commodities, packaging requirements, rehydration capacity, osmotic dehydration. Preservation by irradiation; applications, types and properties of radiations, Effect of radiation on food components, microbes, enzymes. Packaging requirements. Health hazards. Food preservation by fermentation; alcoholic, acetic and lactic acid fermentation.

SUGGESTED READINGS

S. No.	Title	Author
1.	Elements of Food and Nutrition	Awan, J.A.
2.	Textbook of Human Nutrition.	Bamji, M.S., N.P. Rao and V. Reddy (Eds.)
3.	Basic Nutrition and Diet Therapy	Williams, S.R.
4.	Nutrition and Diagnosis. Related Care	Escott-Stum P,S.
5.	Diet and Disease in Traditional and developing societies.	Harrison, G.A. and Waterlow, J.C.
6.	Food Science	Potter, N.N.
7.	Food Processing Operation and Scale-up.	Valentes, K.J., L. Levine and J.P. Clark.
8.	Principles of Food Preservation.	Kyzlink, V.
9.	The Technology of Food Preservation.	Desrosier, N.W. and J.N. Desrosier
10.	Food Engineering Operations	Brennan, J. G, J.R. Butters, N.D. Cowell and A.E.V. Lilly,

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

Case No.	151/2020
Particulars of post	Manager Finance (BS-18), AFIC/ NIHD, Ministry of Defence.
Minimum Qualification & Experience:	<p>i. Second Class or Grade 'C' Master's Degree in Business Administration (Finance)/ Commerce/ Accounting and Finance or equivalent qualification from a University recognized by HEC. OR Second Class or Grade 'C' Bachelor's Degree with ICMA or CA from an institute recognized by HEC.</p> <p>ii. Five (5) years post qualification experience in the field of Finance/ Accounts.</p>

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

Part-II (Professional) (Subjective) : 75 Marks**I. Financial Accounting**

Introduction: Purpose and Nature of Accounting, Various areas of Accounting, Forms of Business enterprises, Accounting Information users, GAAP, Conventions, Business transactions and Accounting equation;

Accounting Process: Recording changes in financial position, Double entry Accounting system, Journal, Ledger, Trial Balance, the Accounting cycle, Measuring business income, adjusting process, Completion of Accounting Cycle, Work sheet, Financial Statements, and Accounting for merchandize business;

Accounting Systems: Special Journals, and Internal control of Cash transactions, Bank Reconciliation, Accounts Receivables, and Inventories accounting Methods, Plant Assets, Depreciation, Intangible Assets, Amortization and Depletion Methods,

Liabilities; Partnership: Formation, Division of Income and Liquidation process;

Corporation: Organization, Classes of Stock, Stock holder's Equity statement, Stock value, Issuance of Stock, Stock Dividend, Treasury Stock, Stock split, Measuring Corporation Income, and Earnings Per Share;

Measuring Cash Flows: Statement of Cash Flows, and Classification of cash flows

II. Financial Management

Introduction: Nature, scope and functions, Financial decisions areas, Objectives of financial management, Framework for financial management,

Working Capital Management: Concepts and components, Determinants of working capital requirement, Working capital conversion cycle and identification of risk.

Cash and Marketable Securities Management: Objectives of cash management, Rational for holding cash, Determinants of cash needs, Cash management strategies.

Credit Policy: Optimal credit policy, Credit granting policy, Credit collection policy, Analysis of changes in credit policy

Financial Markets: Money market, Institutional framework with reference to Pakistan, Capital Markets, Primary vs secondary markets,

Sources of Finance: Short term financing: Trade credit, commercial bank loans, collateral supported loans and commercial paper, Intermediate financing.

The Valuation Concepts: Key concepts of value, Time-value concept, The valuation process, The fundamental valuation model, Valuation of securities.

Financial Forecasting: Short term financial projections: Cash budget and pro-forma financial statements, Long term financial projections.

Capital Budgeting: Nature & process, Estimation and identification of the relevant cash-flows, Capital budgeting evaluation techniques, Capital rationing.

Dividend Policy: Determinants of dividend policy, Alternate dividend policies.

III. Corporate Finance

Introduction to corporate finance, the role of Financial Manager, business finance, the goal of the firm, organization of the finance function, Valuation: concepts and critical analysis, CAPM, critical analysis and application in Pakistan economy, cash flow analysis, probability distribution and expected value, dividend policy, mergers, acquisitions, LBOs and business failure, emerging capital markets, convertibles, warrants, derivative securities.

IV. Accounting Systems and Procedures:

Principles of Double-entry Book-keeping; Accrual-based Accounting System; Adjusting, Closing and Reversing Entries; Methods of keeping and presenting Books of Prime Entry (Cash Book, Petty Cash Book, Sales Journal, Purchase Journal, Purchase and Sales Return Journals etc.); Principal and Subsidiary Ledgers; Trial Balance; Completion of Accounting Cycle; Components of Financial Statements; Responsibility, and Users of Financial Statements.

V. Preparation and Presentation of Financial Statements:

Preparation and Presentation of Financial Statements for Trading & Services Concerns; Elements/Components of Financial Statements in accordance with the format of IAS-I and Companies Ordinance; Financial Statements (Balance Sheet, Income Statement, Cash Flow Statement and Statement of Changes in Equity) in respect of Trading; and Services Enterprises.

SUGGESTED READINGS

S. No.	Title	Author
1.	Accounting: The Basis for Business Decisions	Robert F. Meigs and Walter B. Meigs
2.	Principle of Accounting	Flamholtz, Michael A. Diamond
3.	Business Accounting I & II	Frankwood:
4.	Essentials of Managerial Finance	Weston & Brigham
5.	Financial Management & Policy	James C. Van Horne
6.	Principles of Corporate Finance	Richard Brearly & Stewart Myers
7.	Fundamentals of Financial Management	Van Horne, J.C. and Wachowicz Jr.J.M.
8.	Principles of Managerial Finance	Wrance J.Gitman,
9.	Fundamentals of Corporate Finance	Ross, Stephen A. Westerfield, Randolph W. and Jordan, Bradford D
10.	Accounting Principles	Jerry. J, Weygandt, Paul D. Kimmel and Donald E. Kieso
11.	Financial Accounting,	Mark S. Bettner, Jack L. Smith

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

Case No.	152/2020
Particulars of post	Librarian (BS-18) , AFIC/NIHD, Ministry of Defence.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Master's Degree in Library Science/ Library and Information Science or equivalent qualification from a University recognized by HEC. ii. Five (5) years post qualification experience in the relevant field.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

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

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

II. Organization of Information

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

III. Basic Reference Sources

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

IV. Management of Library and Information Services

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

SUGGESTED READINGS

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

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

Case No.	153/2020
Particulars of post	Audio Visual Consultant (BS-18), AFIC / NIHD, Ministry of Defence.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Bachelor's Degree in Telecommunication or Electronics Engineering or equivalent qualification from a University recognized by HEC. ii. Five (5) years post qualification experience in handling Audio/ Visual equipments.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

Part-II (Professional) (Subjective) : 75 Marks**I. Audio Recording**

- Microphone types
- Placement
- Technical aspects
- Bit depth
- Proper levels
- Compression
- Importance of good audio

II. Digital Capture

- Digital Image formation – Image Sensors – Different Capturing Method: Digital camera – Scanner – Frame Grabber
- Digital Camera: Understanding how digital cameras work – Digital camera types: Flash Card type, Hard Disc type – Overview of current digital cameras.

III. Basic Properties of Light

- Spectrum
- Propagation, Absorption, reflection, refraction, dispersion
- Image formation
- Guiding laws
- Construction of photographic image
- Image size

IV. Camera Lens

- Variety of Camera Lens, Focal Length, Focal Point, Focal Plane
- Aperture: Effective & Relative – F/No – T/No
- Hyper Focal Distance
- Circle of Confusion
- Angle of View

V. Qualities & Drawbacks of Lens

- Resolving & Covering Power
- Depth of Focus

- Depth of Field: Factors influencing Depth of Field, Calculation of Depth of Field
- Draw Backs of Lens: Lens Aberration
- Lens Flare

VI. Exposure

- Exposure, It's definition, Law of Reciprocity
- Exposure Variables, Rule of Thumb for manual exposure measurement.
- Basic Sensitometry, Characteristics Curve
- Densitometry & Densitometer.

VII. Principles of Colour Photography

- Colour Synthesis: Additive & Subtractive, Basic Principles of colour photography
- Fundamental properties of colour: Hue, Saturation, Brightness
- Colour Gamut
- Colour Modes & Models

VIII. Chemical Reversal

- Steps for chemical reversal
- Dichromate reversing bath
- Permanganate reversing bath

IX. Print Toning

- Purpose of toning
- Toning in sepia, blue, green, red and gold.

X. Colour Reversal Film

- Steps for producing a coloured reversal from a colour subject
- Steps for reversal processing
- Chemical reactions that take place in development and bleach-fix baths
- Importance of pH and temperature control

SUGGESTED READINGS

S. No.	Title	Author
1.	Modern Recording Techniques	David Mile Huber
2.	Mixing Secrets for the Small Studio	Mike Senior
3.	Video Production Handbook	Jim Owens
4.	Introduction to Video Production	Ronald J. Compesi, Jaime S. Gomez
5.	Video Production: A basic Guide	Miriam S. Jersky

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

Case No.	154/2020
Particulars of post	Quality Management Representative (BS-18) , AFIC/NIHD, Ministry of Defence.
Minimum Qualification & Experience:	i. Second Class or Grade 'C' Master's Degree in Health Administration/ Quality Management from a University recognized by HEC. ii. Five (5) years post qualification experience of working in hospital management system.

Part-I: 25 Marks (MCQ)

- 25 MCQ Questions on Part-II.

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

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

II. Basic Information Technology

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

III. Principles of Management

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

IV. Quality Management

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

V. Health Policy and Management

Introduction to Health Management, Strategic Management, Planning, Organization, Monitoring, Evaluation, Pakistan Health Policy 2009, Health

Financing, Stewardship, History of Health Policy in Pakistan, Determinants of health policy

SUGGESTED READINGS

S. No.	Title	Author
1.	Guide to Quality Management Systems for the Food Industry	Early, R. 1995.
2.	Training manual on health manpower management	Gourlay R.
3.	Health Care Management	Shortell SM, Kaluzny AD.
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