

Syllabus for Descriptive Test of case Nos.
F.4-51/2020-R (Appraising/Valuation Officer), F.4-52/2020 (Preventive Officer)

Max Marks: 100

Qualifying Standard 40%

Time Allowed: 3 Hours

Part-I (English Essay): 40 Marks

Candidates will be required to write an Essay in English comprising **1000 words** from a set of **four given topics**. Candidates are expected to reflect comprehensive knowledge on a selected topic. Candidate's articulation, expression and technical approach to the style of English Essay writing will be examined.

Part-II (Current Affairs): 30 Marks

Candidates will be expected to demonstrate knowledge on current affairs related to the following:

- CPEC and Pakistan,
- Kashmir Issue,
- Pak US relations
- Afghanistan Crisis

Part-III (Islamic Studies/Pakistan Studies): 30 Marks

I. Islamic Studies

Introduction to Islam, Seerah of the Prophet Muhammad (PBUH) as Role Model, Status of Woman in Islam, Articles of Faith, Islamic Code of Life, Islamic Concept of Human Rights

II. Pakistan Studies

Parliamentary democracy in Pakistan under 1973 Constitution, Salient features of the Constitution of Pakistan 1973, Economic Challenges for Pakistan, Major social problems of Pakistan.

SUGGESTED READINGS

S.No.	Title	Author
1.	Pakistan and World Affairs	Shamshad Ahmad (Edition-2015)
2.	Constitution of Pakistan 1973	
3.	Kashmir in Conflict: India, Pakistan and the Unending War.	Schofield, Victoria. New York: I.B.Tauria, 2003.
4.	Modern South Asia: History, Culture, Political Economy.	Jalal, Aisha and Bose, Sugata. New York: Routledge, 1998.
5.	Federalism and Ethnic Conflict Regulation in India and Pakistan.	Adeney, Katharine. , New York: Palgrave Macmillan, 2007.
6.	Pakistan's Energy Sector: From Crisis to Crisis-Breaking the Chain	Zaid Alahdad
For Islamic Studies		
7.	Introduction to Islam	Dr. Hamidullah
8.	Islam: its meaning and Message	Khurshid Ahmad
9.	Insan e Kamil	Dr Khalid Alvi
10.	Islami Tehzeeb Kay Chund Darakhshan Pehloo	Mustafa Sabali

Syllabus for Descriptive Test of case No. F.4-12/2020-R, (Statistical Officer)

Max Marks: 100

Qualifying Standard 40%

Time Allowed: 3 Hours

Statistics: 100 Marks

I. Probability Distributions

Discrete and continuous Probability Distributions. Properties, applications of Binomial, Poisson, Hyper-geometric, Normal Distribution and its properties, Standard Normal Curve, Normal approximation to Binomial and Poisson distribution.

II. Regression Analysis & Correlation Analysis

Concepts of Regression and Correlation and their application, Simple and Multiple Linear Regression (upto three variables), Estimation of the Parameters, Method of least square, Inference regarding regression parameters. Correlation, Correlation Coefficient, Properties of Correlation Coefficient, Inference regarding correlation coefficient, Partial Correlation and Multiple Correlation (upto three variables).

III. Sampling & Sampling Distributions

Population and Sample, Advantages of Sampling, Sampling Design, Probability & Non-Probability Sampling techniques. Brief Concepts of Simple Random, Stratified, Systematic, Cluster, Multiple and Multistage Sampling. Purposive, Quota Sampling, Convenience & Accidental Sampling. Sampling with and without replacement, Application of Central Limit Theorem in Sampling, Sampling Distribution of Mean, difference between two Means, Proportion, difference between two Proportion and Variance.

IV. Statistical Inferences

Estimation: Point Estimation, Properties of a good Estimator. Interval Estimation. Interval Estimation of Population mean. Large and small sample confidence intervals for Population Mean. Hypothesis Testing: Types of errors. Hypothesis Testing for Population Mean. Inferences for Two Population Means. Inferences for the Mean of Two Normal Populations using Independent Samples (variances are assumed Equal). Inference for Two Populations Mean using Paired Samples. Inferences for Population Proportions. Confidence Intervals and hypothesis Testing for Population Proportion. Inferences for Two Populations Proportions using Independent Samples, Estimation of sample size. Analysis of categorized data. Goodness of fit tests. Contingency tables. Test of independence in contingency tables.

V. Design of Experiments

One-way and Two-way Analysis of Variance, Design of Experiments, Concepts of Treatment, Replication, Blocking, Experimental Units and Experimental Error, Basic Principles of Design of Experiments, Description, Layout and Statistical Analysis of Completely Randomized Design (CRD), Randomized Complete Block Design (RCBD), Multiple Comparison tests (LSD test).

SUGGESTED READINGS

S. No.	Titles	Author
1.	Principles and Procedures of Statistics	Steel, R and Torrie, J.H.
2.	Introduction to Statistical Theory, Part-I & II	Chaudhry, S.M. and Kamal, S.
3.	Fundamentals of Modern Statistical Methods	Wilcox, R.
4.	Statistical Methods	Aggarwal, Y.P.

Syllabus for Descriptive Test of case No. F.4-09/2020-R, (Administrative Officer)

Max Marks: 100

Qualifying Standard 40%

Time Allowed: 3 Hours

Professional: 100 Marks

I. Human Resource Management

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

II. Financial Management

Elements of Financial Administration, Performance Programmed Budgeting, Capital Budget, Principles of Budgeting, Auditing and Accounting.

III. 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;

IV. Information Technology and MS Office

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

SUGGESTED READINGS

S. No.	Title	Author
1.	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

Syllabus for Descriptive Test of case No. F.4-80/2020-R, (MIS Officer)

Max Marks: 100

Qualifying Standard 40%

Time Allowed: 3 Hours

Professional: 100 Marks

I. Introduction to Computing

Introduction to Information Technology and Computers, Computer HW and SW Details, Computer System Components and Communication System, Storage Media and their types, Types of Computer Hardware, Information Security/Privacy, Computer Crimes and Ethical Challenges, Trees (Binary Trees, Binary Search trees, AVL Trees, Encryption Algorithms (DES, RSA), Design Concepts, Architectural Design, Design & Implementation, Project Management, Instruction Processing, Processor Structure & Function, Control Unit Operation, Micro-programmed Control, Instruction-Level Parallelism And Superscalar Processors, Parallel Processing, Multi-Processor and Multi-core Systems.

II. Computer Communications & Networks

Basic Concepts and Classification of Networks, Multiplexing (TDM, FDM), Layering: OSI and TCP/IP, Application Layer (Network application architectures, HTTP, FTP, Email, DNS, P2P applications), Transport Layer (Multiplexing in UDP and TCP, Connectionless Transport: UDP, Reliable data transfer and TCP, Congestion avoidance and control), Network Layer (The Internet Protocol, IPv4 Datagram, Special IP Addresses ARP, IPv6, ICMP, Network Address Translation (NAT), Internet Routing Protocols and Algorithms, X.25, Frame relay and ATM, MPLS), Physical & Link Layer Functionalities (Error Detection & Control, ARQ, Link layer addressing, LAN Technologies, Multiple Access), Special topics (Security, Overlay networks, naming, Content distribution networks, Peer to peer systems, DHTs, Network Attacks).

III. Database Systems

Introduction to Database Systems, Relational Data Model & Relational Database Constraints, Relational Data Model, SQL, Relational Algebra & Calculus, ER Model, ER to Relational Mapping, PL/SQL Stored Procedures & Triggers, Functional Dependencies and Normalization, Storage & Indexing, Indexing Structure, XML documents & Web Services, Query Processing & Evaluation, Query Optimization, Transaction processing, Object-Oriented Databases, Distributed Databases, Database Security & Access Control

IV. Operating Systems & Web

Roles of an Operating System, Operating-System Evolution, Memory Management, File Systems (UNIX and Windows Systems), Web applications Issues (Accessibility, testing, performance, operation, maintenance, security).

SUGGESTED READINGS

S. No.	Title	Author
1.	Computer System Architecture	M. Morris Mano
2.	Software Engineering	Ian Sommerville
3.	Computer Networking: A Top Down approach featuring the Internet	James F. Kurose and Keith W. Ross
4.	Data and Computer Communications	William Stallings
5.	Database Systems Concepts	Silberchatz, Abraham & Korth, Sudarshan
6.	Computer Networks	Andrew Tanenbaum
7.	Web Services: Principles and Technology	Michael Papazoglu