



**REVISED SYLLABI FOR  
CSS COMPETITIVE EXAMINATION, CE-2016**

**FPSC, F-5/1, AGA KHAN ROAD, ISLAMABAD**

**Updated on: 7<sup>th</sup> July, 2015**

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## FEDERAL PUBLIC SERVICE COMMISSION

### REVISED SCHEME OF CSS COMPETITIVE EXAMINATION MAIN EXAMINATION (1200 MARKS)

#### A: COMPULSORY SUBJECTS (600 MARKS)

Code No.	Subjects	Marks
1.	English Essay	100
2.	English (Precis and Composition)	100
3.	General Science & Ability	100
4.	Current Affairs	100
5.	Pakistan Affairs	100
6.	Islamic Studies <b>OR</b> Comparative Study of Major Religions (For Non Muslims)	100
<b>Total</b>		600

#### B: OPTIONAL SUBJECTS (600 MARKS)

**Group-I:** (To select one subject of (200 marks) only)

Code No.	Subject	Marks
11.	Accountancy & Auditing	200
12.	Economics	200
13.	Computer Science	200
14.	Political Science	200
15.	International Relations	200

**Group-II:** (To select subject(s) of 200 marks only)

Code No.	Subject	Marks
16.	Physics	200
17.	Chemistry	200
18.	Applied Mathematics	100
19.	Pure Mathematics	100
20.	Statistics	100
21.	Geology	100

**Group-III:** (To select one subject of **100 marks** only)

Code No.	Subject	Marks
22.	Business Administration	100
23.	Public Administration	100
24.	Governance & Public Policies	100
25.	Town Planning & Urban Management	100

**Group-IV:** (To select one subject of **100 marks** only)

Code No.	Subject	Marks
26.	History of Pakistan & India	100
27.	Islamic History & Culture	100
28.	British History	100
29.	European History	100
30.	History of USA	100

**Group-V:** (To select one subject of **100 marks** only)

Code No.	Subject	Marks
31.	Gender Studies	100
32.	Environmental Sciences	100
33.	Agriculture & Forestry	100
34.	Botany	100
35.	Zoology	100
36.	English Literature	100
37.	Urdu Literature	100

**Group-VI:** (To select one subject of **100 marks** only)

Code No.	Subject	Marks
38.	Law	100
39.	Constitutional Law	100
40.	International Law	100
41.	Muslim Law & Jurisprudence	100
42.	Mercantile Law	100
43.	Criminology	100
44.	Philosophy	100

**Group-VII:** (To select one subject of **100 marks** only)

Code No.	Subject	Marks
45.	Journalism & Mass Communication	100
46.	Psychology	100
47.	Geography	100
48.	Sociology	100
49.	Anthropology	100
50.	Punjabi	100
51.	Sindhi	100
52.	Pashto	100
53.	Balochi	100
54.	Persian	100
55.	Arabic	100

Note-1: The question papers in Urdu or other Pakistani regional languages (Punjabi, Sindhi, Pashto and Balochi), Persian and Arabic should be answered in the respective languages. However, question relating with translation from respective language into English or vice versa may be answered as directed in the question paper.

Note-2: There will be two papers of 100 marks each of the subject which carry 200 marks. In other subjects of 100 marks there will be one paper. Each paper will be of 3 hours duration.

Note-3: Ratio of MCQs in compulsory papers for CE-2016 will be 20 MCQs in each paper except in the paper of Essay. Similarly there will be 20 MCQs from each optional paper except Pure Mathematics and Applied Mathematics.

Note-4: The question paper in Islamic Studies OR Comparative Study of Major Religions (For Non Muslims) is to be answered in English or Urdu only. All other papers must be answered in English unless otherwise directed in the Question Paper.

Note-5: Non Muslim Candidates may either opt Islamic Studies OR Comparative Study of Major Religions as may suit to them.

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**PAPER: ENGLISH ESSAY (100 MARKS)**

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Candidates will be required to write one or more Essay in English. A wide choice of topics will be given.

Candidates are expected to reflect comprehensive and research based knowledge on a selected topic. Candidate's articulation, expression and technical treatment of the style of English Essay writing will be examined.

**PAPER: ENGLISH (PRECIS & COMPOSITION) (100 MARKS)**

The examination in this subject will be based upon a paper carrying 100 marks to Test the candidate's abilities to handle Precis Writing, Reading Comprehension, Sentence Structuring, Translation, Grammar and Vocabulary, etc.

**I. Precis Writing (20 marks)**

A careful selected passage with an orientation of generic understanding and enough flexibility for compression shall be given for précising and suggesting an appropriate title. Out of the total 20 marks allocated to this question, 15 shall go to précising the text and 5 to suggesting the title.

**II. Reading Comprehension (20 marks)**

A carefully selected passage that is rich in substance but not very technical or discipline-specific shall be given, followed by five questions, each carrying 4 marks.

**III. Grammar and Vocabulary (20 marks)**

Correct usage of Tense, Articles, Prepositions, Conjunctions, Punctuation, Phrasal Verbs, Synonyms and Antonyms etc.

**IV. Sentence Correction (10 marks)**

The 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 making 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.

**V. Grouping of Words (10 marks)**

A random list of twenty 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.

**VI. Pairs of Words (10 marks)**

Ten 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.



**VII. Translation (10 marks)**

Ten short Urdu sentences involving structural composition, significant terms and figurative/idiomatic expressions shall be given, to be accurately translated into English.

**SUGGESTED READINGS**

S.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.)

**PAPER: GENERAL SCIENCE & ABILITY (100 MARKS)**

**Part-I (General Science) 60 Marks**

**I. Physical Sciences**

- **Constituents and Structure:**-Universe, Galaxy, Light Year, Solar System, Sun, Earth, Astronomical System of Units.
- **Process of Nature:** - Solar and Lunar Eclipses, Rotation and Revolution, Weather Variables (Global Temperature, Pressure, Circulation, Precipitation, Humidity) and Weather Variations.
- **Natural Hazards and Disasters:** - Earth Quake, Volcanic Eruption, Tsunami, Floods, Avalanche, Travelling Cyclone (Tropical Cyclone, Middle Latitude Cyclone and Tornadoes), Drought, Wildfire, Urban Fire. Disaster Risk Management.
- **Energy Resources:** - Sources of Energy (Renewable i.e. LED Energy, Solar Energy, Wind Energy and Non-Renewable Energy conservation and its sustainable use.
- **Atomic Structure**, Chemical Bonding, Electromagnetic Radiations.
- **Modern Materials/Chemicals:** - Ceramics, Plastics, Semiconductors. Antibiotics, Vaccines, Fertilizers, Pesticides.

**II. Biological Sciences**

- **The Basis of Life:** - Cell Structures and Functions (Subcellular Organelles such as Nucleus, Mitochondria and Ribosomes).
- **Biomolecules:** - Proteins, Lipids, Carbohydrates and Enzymes.
- **Plant and Animal Kingdom:** - A brief survey of plant and animal kingdom to pinpoint similarities and diversities in nature.
- **A Brief Account of Human Physiology.**
- **Common Diseases and Epidemics:** - Polio, Diarrhea, Malaria, Hepatitis, Dengue their Causes and Prevention.
- **New Model Concept of Producing BIO Fuel Method**

**III. Environmental Science**

- **Environment:** - The Atmosphere (Layered Structure and Composition), Hydrosphere (Water Cycle, Major Water Compartments), Biosphere (Major Biomes) and Lithosphere (Minerals and Rocks, Rock Types, Plate Tectonics).
- **Atmospheric Pollution:** - Types, Sources, Causes and effects of major air pollutants (CO<sub>x</sub>, Particulate Matter, NO<sub>x</sub>, SO<sub>x</sub>, Tropospheric Ozone, Volatile Organic Compounds, Dioxins). Regional and Global air pollution issues (Acid-rain, Ozone Depletion, Greenhouse Effect and Global Warming). International agreements on air pollution control (Montreal Protocol and Kyoto Protocol).
- **Water Pollution:**- Types, sources, causes and effects of major water pollutants (Synthetic Organic Chemicals, Oxygen Demanding Wastes, Plant Nutrients, Thermal Pollution, Infectious Agents, Sediments, Radioactivity, Heavy Metals and Acids). Drinking water quality and standards.
- **Land Pollution:** - Solid waste management and disposal.

- Role of Remote Sensing and GIS in Environmental Science.
- Population Planning.

#### IV. Food Science

- **Concept of Balance Diet:** - Vitamins, Carbohydrates, Protein, Fats and oil, Minerals, Fiber.
- **Quality of Food:-** Bioavailability of Nutrients, Appearance, Texture, Flavor, Quality of Packed and Frozen Food, Food Additives, Preservatives and Antioxidants
- **Food Deterioration and its Control:** - Causes of Food Deterioration, Adulteration, Food Preservation.

#### V. Information Technology

- **Computer (Hardware & Software Fundamentals);** I/O Processing and data storage, Networking & Internet Standards, Application and business Software, Social Media Websites. Information Systems. Fundamentals of artificial intelligence.
- **Telecommunications:** - Basics of Wireless Communication (Mobile, Satellite, Surveillance and GPS and Fiber Optic etc.

### Part-II (General Ability) 40 Marks

#### VI. Quantitative Ability/Reasoning

- Basic Mathematical Skills.
- Concepts and ability to reasons quantitatively and solve problems in a quantitative setting.
- Basic Arithmetic, Algebra and Geometry (Average, Ratios, Rates, Percentage, Angles, Triangles, Sets, Remainders, Equations, Symbols, Rounding of Numbers
- Random Sampling

#### VII. Logical Reasoning and Analytical Reasoning/Ability

- **Logical Reasoning** includes the process of using a rational, systematic series of steps based on sound mathematical procedures and given statements to arrive at a conclusion
- **Analytical Reasoning/Ability** includes visualizing, articulating and solving both complex and uncomplicated problems and concepts and making decisions that are sensible based on available information, including demonstration of the ability to apply logical thinking to gathering and analyzing information.

#### VIII. Mental Abilities

- Mental Abilities Scales that measures specific constructs such as verbal, mechanical, numerical and social ability.

**SUGGESTED READINGS**

<b>S. No.</b>	<b>Title</b>	<b>Authors</b>
1.	Asimov's New Guide to Science 1993	Isaac Asimov
2.	Science Restated: Physics and Chemistry for the Non-Scientist 1970	Harold Gomes Cassidy
3.	Eminent Muslim Scientists 1991	S. Fakhre Alam Naqvi
4.	Exploring Life Science 1975	Walter A. Thurber, Robert E. Kilburn, Peter S. Howell
5.	Exploring Physical Science 1977	Walter A. Thurber, Robert E. Kilburn, Peter S. Howell
6.	Principles of Animal Biology 2011	Lancelot Hogben
7.	The Impact of Science on Society 2005	Isaac Asimov, A. S. a. N. A. S. a.
8.	Fundamentals of Forensic Science 2010	Max M. Houck, Jay A. Siegal
9.	Forensic Science Fundamentals & Investigation 2008	Anthony J. Bertino
10.	Physical Geography 2013	Harm J. de Blij, Peter O. Muller, James E. Burt, Joseph A. Mason
11.	Physical Geography-Science and Systems of the Human Environment 2009	Alan H. Strahler, Arthur N. Strallar.
12.	Introduction to Information Technology 2005	I. T. L. Education Solutions Limited, I.T.L.
13.	Management Information Systems 2014	Ken Sousa, Effy Oz
14.	Fundamentals of Telecommunications 2005	Roger L. Freeman
15.	Basics of Environmental Science 2002	Michael Allaby
16.	Food Science 1998	Norman N. Potter, Joseph H. Hotchkiss
17.	Environmental Science: Systems and Solutions. 5 <sup>th</sup> ed. 2013	Michael L. McKinney, Robert Schoch and Logan Yonavjak
18.	Environmental Science: A Global Concern 2012	William P. Cunningham, Barbara Woodworth Saigo
<b>Books for Logical Reasoning</b>		
19.	Logical Reasoning	Rob P. Nederpelt, Farouz D. Kamareddine
20.	Elements of Logical Reasoning	Jan Von Plato
21.	Reasoning Builder for Admission and Standardized Test	Staff of Research Education
22.	Test of Reasoning	Thorpe
23.	Mental Ability	Dr. Lal & Jain
24.	The Brain Book: Know Your Own Mind and How to Use it	Edgar Thorpe

**PAPER: CURRENT AFFAIRS (100 MARKS)**

Candidates will be expected to display such general knowledge of history, politics and International Affairs, as deemed necessary to interpret current affairs.

**I. Pakistan's Domestic Affairs (20 marks)**

- Political
- Economic
- Social

**II. Pakistan's External Affairs (40 marks)**

- Pakistan's relations with its Neighbors (India, China, Afghanistan, Russia)
- Pakistan's relations with the Muslim World (Iran, Saudi Arabia, Indonesia, Turkey)
- Pakistan's relations with the United States
- Pakistan's relations with Regional and International Organizations (UN, SAARC, ECO, OIC, WTO, GCC)

**III. Global Issues (40 marks)**

- International Security
- International Political Economy
- Human Rights
- Environment: Global Warming, Kyoto Protocol, Copenhagen Accord
- Population: world population trends, world population policies
- Terrorism and Counter Terrorism
- Global Energy Politics
- Nuclear Proliferation and Nuclear Security
- Nuclear Politics in South Asia
- International Trade (Doha Development Round and Bali Package)
- Cooperation and Competition in Arabian Sea, Indian and Pacific Oceans.
- Millennium Development Goals, Current Status
- Globalization
- Middle East Crisis
- Kashmir Issue
- Palestine Issue

**SUGGESTED READINGS**

<b>S.No.</b>	<b>Title</b>	<b>Author</b>
1.	Pakistan Foreign Policy 1947-2005: A Concise History, 2011	Abdul Sattar
2.	Issue in Pakistan's Economy, 2010	Akbar S. Zaidi
3.	Pakistan: A Hard Country, 2012	Anatol Lieven
4.	Government & Politics in South Asia, 6th ed., 2009	Baxter, Malik, Kennedy & Oberst,
5.	Introduction to International Political Economy, 2010	David Balaam & Bradford Dillman
6.	International Organization (Second Edition) 2012	Volker Rittberger, Bernhard Zangl and Andress Kruck
7.	The Age of Deception: Nuclear Diplomacy in Treacherous Times (2011)	Mohamed Elbaradei
8.	International Relations, 2012	Joshua Goldstein
9.	World Politics: Trends & Transformation, 2014-2015	Kegley & Blanton
10.	Pakistan Beyond the Crisis, 2011	Maleeha Lodhi
11.	Globalization in Question, 2009	Paul Hirst
12.	International Political Economy: Interests & Institutions in the Global Economy, 2010	Thomas Oatley
13.	Politics and Change in the Middle East, 10th Ed., Pearson, 2012	Andersen, Seibert, and Wagner
14.	Eating Grass: The Making of the Pakistani Bomb, (2012)	Feroz Khan
15.	Pakistan and World Affairs	Shamshad Ahmad (Edition-2015)
16.	World Times Magazine	...

**PAPER:** **PAKISTAN AFFAIRS** **(100 MARKS)**

- I. Ideology of Pakistan-----definition and elucidation, historical aspects: Muslim rule in the Sub-Continent, its downfall and efforts for Renaissance. Movements for reforms-- Shaikh Ahmad Sarhindi, Shah Waliullah, Sayyid Ahmad Shaheed, Aligarh, Deoband, Nadwah, and other educational institutions-----Sindh Madrassah and Islamia College Peshawar. Ideology of Pakistan in the light of Speeches and statements of Allama Iqbal and Quaid- i Azam Muhammad Ali Jinnah.
- II. Land and people of Pakistan----- Geography, Society, Natural resources, Agriculture, Industry and education with reference to characteristics, trends and problems.
- III. Pakistan and Changing Regional Apparatus
- IV. Nuclear Program of Pakistan, its Safety and Security; International Concerns
- V. Regional Cooperation Organizations (SAARC,ECO,SCO) and the Role of Pakistan
- VI. Civil-Military Relations in Pakistan
- VII. Economic Challenges in Pakistan
- VIII. Non-Traditional Security Threats in Pakistan: Role of Non-State Actors
- IX. Pakistan's Role in the Region
- X. The Palestine Issue
- XI. Changing Security Dynamics for Pakistan: Challenges to National Security of Pakistan
- XII. Political Evolution Since 1971
- XIII. Pakistan and US War on Terror
- XIV. Foreign Policy of Pakistan Post 9/11
- XV. Evolution of Democratic System in Pakistan
- XVI. Ethnic Issues and National Integration
- XVII. Hydro Politics ; Water Issues in Domestic and Regional Context
- XVIII. Pakistan's National Interest
- XIX. Challenges to Sovereignty
- XX. Pakistan's Energy Problems and their Effects
- XXI. Pakistan's Relations with Neighbors excluding India
- XXII. Pakistan and India Relations Since 1947
- XXIII. The Kashmir Issue
- XXIV. The war in Afghanistan since 1979 and its impact on, and challenges to Pakistan in the Post 2014 era.
- XXV. Proxy Wars: Role of External Elements

- XXVI. Economic Conditions of Pakistan, the Most Recent Economic Survey, the Previous and Current Budgets, and the Problems and Performance of Major Sectors of Economy.
- XXVII. The Recent Constitutional and Legal Debates, the Latest Constitutional Amendments and Important Legislations, Legal Cases and the Role of Higher Courts.
- XXVIII. The Prevailing Social Problems of Pakistan and the Strategies to Deal with Them, Poverty, Education, Health and Sanitation.

### SUGGESTED READINGS

S.No.	Title	Author
1.	Federalism and Ethnic Conflict Regulation in India and Pakistan.	Adeney, Katharine. , New York: Palgrave Macmillan, 2007.
2.	Labor, Democratization and Development in India and Pakistan.	Candland, Christopher, New York: Routledge, 2007.
3.	Perception, Politics and Security in South Asia: The Compound Crisis in 1990.	Chari, P.R. at al, New York: Routledge, 2003.
4.	The Future of Pakistan.	Cohen Stephen P. et al. Washington: Brookings Institute Press, 2011.
5.	Frontline Pakistan: The Struggle with Militant Islam.	Hussian, Zahid. New York: I.B.Tauris, 2007.
6.	Modern South Asia: History, Culture, Political Economy.	Jalal, Aisha and Bose, Sugata. New York: Routledge, 1998.
7.	Democracy and Authoritarianism in South Asia.	Jalal, Aisha, Cambridge: Cambridge University Press, 1995.
8.	Conflict Between India and Pakistan: an Encyclopedia.	Lyon, Peter. California: ABC-CLIO, 2008.
9.	Back to Pakistan: A Fifty Year Journey.	Mass, Leslie Noyes. Plymouth: Rowman & Littlefield Publishers, 2011.
10.	Judging the State: Courts and Constitutional Politics in Pakistan.	Newberg, Paula R. Cambridge: Cambridge University Press, 1995.
11.	Pakistan: Manifest Destiny.	Qureshi, Atiff. London: Epic Press, 2009.
12.	Pakistan, America, and the Future of Global Jihad.	Riedel, Bruce. Deadly Embrace: Washington: Brookings Institute Press, 2011.
13.	Kashmir in Conflict: India, Pakistan and the Unending War.	Schofield, Victoria. New York: I.B.Tauria, 2003.
14.	Islamic Law and the Law of Armed Conflict: The Armed Conflict in Pakistan.	Shah, Niaz A. New York: Routledge, 2011.
15.	Making Sense of Pakistan.	Shaikh, Farzana. New York: Colombia University Press, 2009.
16.	A Brief History of Pakistan.	Wynbrandt, James. New York: Infobase Publishing, 2009.



17.	Powering Pakistan: Meeting Pakistan Energy Needs in 21 <sup>st</sup> Century	Robert M. Hathaway and Michael Gugelman
18.	Pakistan's Energy Sector: From Crisis to Crisis-Breaking the Chain	Zaid Alahdad

**PAPER:** **ISLAMIC STUDIES** **(100 MARKS)**

**I. Introduction to Islam.**

- Concept of Islam.
- Importance of Din in Human Life.
- Difference between Din and Religion.
- Distinctive Aspects of Islam.
- Islamic Beliefs & its Impact on Individual & Society and the Fundamental of Islam
- Islamic Worships: Spiritual, Moral and Social Impact.

**II. Study of Sirah of the Prophet Muhammad (PBUH) as Role Model for:-**

- Individual
- Diplomat
- Educator
- Military Strategist
- Peace Maker

**III. Human Rights & Status of Woman in Islam.**

- Human Rights and Status of Woman in Islam
- Dignity of Men and Women

**IV. Islamic Civilization and Culture:**

- Meanings and the Vital Elements
- Role of Civilization in Development of Human Personality and Community
- Characteristics of Islamic Civilization (Tawhid, Self-purification, Dignity of Man, Equality, Social Justice, Moral Values, Tolerance, Rule of Law)

**V. Islam and the World.**

- Impact of Islamic Civilization on the West and Vice Versa
- The Role of Islam in the Modern World.
- Muslim World and the Contemporary Challenges.
- Rise of Extremism.

**VI. Public Administration and Governance in Islam**

- Concept of Public Administration in Islam
- Quranic Guidance on Good Governance
- Concept of Governance and its Applications in the light of Qur'an, Sunnah and Fiqh.
- Governance Structure in Islam (Shura, Legislation, Sources of Islamic Law)
- Governance under Pious Khilafat
- Particular letters of Hazrat Umar (R.A) and Hazrat Ali (R.A) to different Authority.
- Responsibilities of Civil Servants
- System of Accountability(hisbah) in Islam

**VII. Islamic Code of Life.**

- Salient Features of Islamic System, Social System, Political System, Economic System, Judicial System, Administrative System,
- Procedure of Ijma and Ijtihad

**PAPER:****ISLAMIC STUDIES****(100 MARKS)****قصاب: مطالعہ اسلام / معارف اسلامی****1- تعارف اسلام**

- تصور اسلام
- انسانی زندگی میں دین کی اہمیت
- دین اور مذہب میں فرق
- اسلام کے نمایاں پہلو
- اسلامی عقائد کے انفرادی و اجتماعی پرائزات اور اساس دین / دین کی بنیادیں
- اسلامی عبادات کے روحانی، اخلاقی اور سماجی اثرات

**2- سیرت طیبہ کا مطالعہ بحیثیت نمونہ عمل**

- انفرادی زندگی
- سفارت کار
- معلم انسانیت
- سپر لار اور جنگی منصوبہ ساز
- پیغمبر امن

**3- انسانی حقوق اور اسلام میں خواتین کا مقام و مرتبہ**

- انسانی حقوق اور اسلام میں خواتین کا مقام و مرتبہ
- وقار انسانی (مرد و خواتین کا انسانی وقار عزت و احترام)

**4- اسلامی تہذیب و ثقافت**

- معانی اور اہم اجزاء
- سماج اور انسانی شخصیت کی تعمیر میں تہذیب کا کردار
- اسلامی تہذیب کے نمایاں اوصاف (توحید، تزکیہ نفس، انسانی عزت و وقار، مساوات، سماجی انصاف، اخلاقی اقدار، صبر و برداشت، قانون کی حکمرانی)

**5- اسلام اور دنیا**

- اسلامی تہذیب کے مغرب اور مشرق کے اسلامی تہذیب پر اثرات
- جدید دنیا میں اسلام کا مقام
- اسلام اور عصر حاضر کے چیلنجز
- انتہا پسندی کا فروغ

**6- پبلک ایڈمنسٹریشن، ور اسلامي طرز سكرامتي**

- پبلک ایڈمنسٹریشن کا اسلامی تصور
- اچھے طرز سكرامتي کیلئے قرآنی تعلیمات
- قرآن و سنت اور فتنہ کی روشنی میں طرز سكرامتي کا تصور اور عمل درآمد کا طریقہ کار
- اسلامی نظام سكرامتي کا ڈھانچہ (شورلی، متفقہ، اسلامی قانون کے ماخذ)
- خلفاء راشدین کا طرز سكرامتي
- حضرت عمرؓ اور حضرت علیؓ کے حکومتی عہدے داروں کے نام خطوط
- سرکاری ملازمین کی ذمہ داریاں
- اسلام میں احتساب کا نظام

**7- اسلامي ضابطہ حیات**

- اسلامی نظام کی نمایاں خصوصیات
- سماجی نظام، سیاسی نظام، اقتصادی نظام، عدالتی نظام، انتظامی نظام
- اجماع اور اجتہاد کے اصول و ضوابط

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**REQUIRED READINGS**

Sr. No.	Title	Author
1.	Introduction to Islam	Dr. Hamidullah
2.	Islam: its meaning and Message	Khurshid Ahmad
3.	Islam: The Misunderstood Religion	Muhammad Qutub
4.	Islam at the Cross-roads	Muhammad Asad
5.	Islam and the Economic Challenge	Umer Chapra
6.	A brief Survey of Muslim Science and Culture	M. Abdur Rahman
7.	Administrative Development an Islamic Perspective	Muhammad Al-Buraey
8.	Quranic Sciences	Afzalur Rahman
9.	Islamization of Pakistan	Zafar Iqbal
10.	Islamic Law and Constitution	Abul A' la Mawdudi,
11.	Insan e Kamil	Dr Khalid Alvi
12.	Islami Tehzeeb Kay Chund Darakhshan Pehloo	Mustafa Sabali
13.	Islam Aur Tahzeeb -e -Maghrib Ki Kash Makash	Dr Muhammad Ameen,
14.	Aurat Maghrib aur Islam	Serwat Jamal Asmai
15.	Seerat-un-Nabi Vol. I	Shibli Nu'mani
16.	Islam and Secular Mind	Edited by Tarik Jan
17.	Khilafat-o-Malookiat	Abul A' la Mawdudi,

**RECOMMENDED READING**

18.	Towards Understanding Islam	Abul A' la Mawdudi,
19.	Ideals and Realities in Islam	Hussain Nasr,
20.	Administrative Development; an Islamic Perspective, KP.L. London	Alburay Muhammad A.
21.	Arab Administration	Hussain Shah
22.	The Islamic Republic : Politics, Law and Economy	Hassan Dr. S. Farooq

23.	Studies in Muslim Political Thoughts and Administration	Sherwani, H.K.S.
24.	Reconstruction of Religious Thoughts in Islam	Allama Iqbal
25.	Islamic Political System in the Modern age: Theory and Practice	Manzooruddin Ahmad
26.	Sovereignty-Modern and Islamic:	Ilyas Ahmad
27.	Islam in Transition: Muslim Perspectives	Donohue J, John A. and Esposito L. John (eds)
28.	Islam Aik Nazar Main	Sadrudin Islahi
29.	Islami Nazria e Hayat	Khurshid Ahmad
30.	Islami Nizam e Zindgi aur us kay Bunyadi Tassworat	Abul Aala Maudoodi
31.	Jadah o Manzil	Seyyed Qutb
32.	Islam ka Nizam e Hakoomat	Maulana Hamid ul Ansari
33.	Islami Nizam	Dr Yousof al-Qardawi,
34.	Bonyadi Haqooq	Muhammad Salahuddin
35.	Islam Ka Muashi Nizam	Justice Taqi Usamani,
36.	Tahzeeb o Tamaddon e Islami	Rasheed Akhter Nadvi
37.	First Principle of Islamic Economics	Abul A' la Mawdudi
38.	Islamic Civilization Foundations Belief & Principles	Abul A' la Mawdudi
39.	Worship in Islam	Abul A' la Mawdudi
40.	Let us be Muslims	Khurram Murad
41.	Women and Social Justice; an Islamic Paradigm	Prof. Dr. Anis Ahmad

**PAPER: COMPARATIVE STUDY OF MAJOR RELIGIONS (100 MARKS)**  
 (Alternative Paper in Lieu of the Compulsory Islamic Studies)

## **I. Introduction**

- Definition(s) of religion
- Emergence of the study of religion as a discipline
- Theological and academic study of religion
- An overview of religious landscape of the World

## **II. Hinduism**

- Historical Background  
Indus valley civilization, Aryan invasion theory, Vedic Dharma, Brahmanism
- Scriptures:  
*Sruti*: Vedas, Upanishads, *Smirti*: Manu Smirti, Sutras, Puranas, Great epics: Ramayana, Mahabharata
- Hindu Doctrines:  
Dharma, Vedanta, Karma, Transmigration of Souls, Moksha (Liberation)
- Ways to Liberation:  
Karma marga (Works/Rituals), Jnana marga (Wisdom), Bhakti marga (Devotion)
- Hindu gods:  
Brahma, Vishnu, Shiva, Trimurti, other gods and divinities
- Major Hindu Sects:  
Vaishnavism (Manifestation avatars), Saivism (Supreme God & Phallic worship), Saktism (Goddess worship)
- Hindu society:  
Caste System, Ashramas (Stages of life)
- Hinduism in the Modern World  
19<sup>th</sup> century reform and revival movements, Contemporary Hindu Tendencies and movements

## **III. Buddhism**

- Historical Background  
Life of Gautama Buddha, Formation and spread of Buddhism, Rivalry between Brahmanism and Buddhism
- Scriptures:  
Tripitaka: Sutta Pitaka, Vinaya Pitaka, Abhidhamma Pitaka
- Teachings and Doctrines  
Three Jewels of Buddhism: Buddha, Dhamma, Sangha, The four noble truths, Eight fold Path
- Buddhist Sects:  
Theravadas (Hinayana), Mahayana, other schools and sects
- Buddhism in the Modern world

#### IV. Judaism

- A brief history of Jews and Judaism:  
From Abraham to Moses, peace be upon them all, From Moses to establishment of Jewish rule, Destruction of Jerusalem and dispersion of Jews in the world,
- Jewish Scriptures:  
Tanakh (The Torah, the Prophets, and the Writings), Mishnah and Talmud
- Articles of faith and basic teachings:  
Ten Commandments, The thirteen principles of faith propounded by Moses Maimonides (1138-1204)
- Jewish holidays and festivals:  
Yom Kippur (The Day of Atonement), Pesach (Passover), Sukkot (Tabernacles) Purim
- Jewish Worship:  
Daily prayer, fasting, Sabbath
- Jewish sects and movements  
Orthodox Judaism, Conservative Judaism, Reform Judaism, Zionism, Kabbalah, Hasidism

#### V. Christianity

- Historical background:  
Jewish background of Christianity, Life and of Jesus Christ (Through the Four Gospels), Life and the role of Paul (Through the Letters of Paul), Formation and spread of the Christian Church, Christianization of the Roman Empire, Reform movement
- Scriptures:  
The Holy Bible (Old Testament and New Testament)
- Basic Doctrines:  
Original Sin, Incarnation of God, Crucifixion and Resurrection of Jesus Christ, Atonement, Trinity
- Christian Sects:  
Catholicism, Eastern Orthodoxy, Protestantism  
Sub-denominations: Lutherans, Reformed and Presbyterians, Anglicans, Baptists, Methodists, Unitarians
- Christian Festivals and Holidays:  
Advent, Christmas, Easter, Pentecost
- Christian worship and Sacraments  
Baptism, Eucharist, Communion, Lord's Supper, prayer, fasting, psalms, music,
- Christianity in the Modern Times  
Encounter with modernity, modern theological trends, Missionary movement, Dialogue and relationship with other religions

#### VI. Islam

- Introduction and Historical Background  
Islamic concept of religion, universality of religion and diversity of shari'ahs, *Sirah* (Life) of the Holy Prophet Muhammad, peace be upon him, The era of rightly guided caliphs of Islam



- **Sacred Scriptures:**  
The Holy Quran, Hadith
- **Basic Doctrines and Creed:**  
*Tawhid* (Oneness of God), *Risalah* (Belief in Prophets and finality of the prophet-hood with the Prophet Muhammad), *Akhirah* (Belief in Hereafter and the final reckoning by Allah the Almighty), Belief in angels, previous scriptures, predestination and human responsibility before God, infallibility of the Quran
- **Five Pillars of Islam:**  
Utterance of *Shahadatayn* (To proclaim the Oneness of Allah and that Prophet Muhammad is his messenger, *salah* (five daily prayers), *zakah* (compulsory charity), *sawm* (fasting in the month of Ramadan) and Hajj (pilgrimage to Makkah who can afford travelling to it)
- **Other Teachings of Islam**  
Equality of mankind, simplicity, spiritual purity and bodily hygiene, patience, contentment, moderation, social justice, Jihad, tolerance towards other religions,
- **Sects and Schools**  
Sunnis (mainstream Muslims), Shi'ahs (Special devotion for Hazrat Ali and Family of the Prophet), Khawarij (literalists), Mu'tazilah (rationalists)
- **Contemporary Islamic movements and tendencies:**  
Ikwan al Muslimun (Muslim Brotherhood), Jama'at-i-Islami, Tablighi Jama'at, Salafi movement, Fethullah Gulen movement in Turkey, Iranian revolution, extremist groups.

### SUGGESTED READINGS

S.No.	Title	Author
1.	Approaches to the Study of Religion, 1999	Peter Connolly (ed.)
2.	The Penguin Hand Book of World's Living Religions, 2010.	John R. Hinnells (ed.)
3.	Dunya Kay Baray Mazahib (Major Religions of the World)	Imadul Hasan Azad Faruqi
4.	Hinduism: A Short Introduction, 2006.	Klaus K. Klostermaier
5.	Exploring Buddhism, , 2012.	Christmas Humphreys
6.	Judaism: A Short Introduction, 1999.	Lavinia and Dan Cohn-Sherbok
7.	Christianity: An Introduction, 2006.	Alister E. McGrath
8.	The Messenger: The Meanings of the Life of Muhammad, 2008	Tariq Ramadan
9.	Ideals and Realities of Islam, 1993.	Seyyed Hossein Nasr
10.	Towards Understanding Islam, 1992.	Syed Abul 'Ala Maududi

**PAPER:** **ACCOUNTANCY & AUDITING** **(200 MARKS)**  
**Paper-I (MARKS-100)**

**(A) Financial Accounting (50 Marks)**

- I. Fundamental Accounting Principles, Concepts, Assumptions and Conventions:** Nature and Scope of Accounting, Accrual/Matching Concept, Consistency of Presentation and Comparability, True and Fair View, Neutrality, Materiality, Prudence, Completeness, Understandability and Usefulness, Going Concern, and Substance over Form.
- II. Accounting Cycle/Process and Financial Statements:** Transactions and/or Events, General Journal, General Ledger, Trial Balance (Unadjusted), Adjusting Entries and Adjusted Trial Balance, Work Sheet, Financial Statements including Income Statement, Statement of Financial Position (Balance Sheet), Statement of Cash Flows and Statement of Changes in Equity in accordance with the Financial Reporting Framework as specified by International Accounting Standard Board (IASB) through IFRSs/IASs, and by Securities and Exchange Commission of Pakistan through Companies Ordinance 1984, and Closing and Reversing Entries.
- III. Attributes, and Significance of Accounting Information:** Attributes of Accounting Information, Information/Reporting Requirements of various Users/Stakeholders of Financial Statements including External (Investors/Shareholders, Creditors, Suppliers, Lenders/Financiers, Government Agencies etc.) and Internal (Board of Directors, Partners, Managers, Employees etc.) Stakeholders.
- IV. Accounting for common Legal Forms of a Business:** Accounting Principles and Financial Statements of Sole-proprietorships, Partnerships and Joint Stock Companies including Banking Companies (Excluding Advanced Topics like Amalgamation, Capital Reduction, Consolidation etc.)
- V. Accounting for Associations Not-for-profit, and for Public Sector:** Accounting Principles and Financial Statements - of Associations Not-for-profit, and – of Public Sector Entities as per Standardized Financial Reporting Framework provided by International Public Sector Accounting Standards (IPSAS) Board and Practices being followed in the country.
- VI. Accounting for Non-current Tangible Assets:** Fundamental Concepts and Principles concerning Non-current Assets: Cost; Depreciable Amount; Depreciation; Fair Value; Property, Plant and Equipment; Residual Value; and Useful Life. Depreciation Methods and their Application (as specified by International Accounting Standards Board): Straight-line Method; Reducing Balance Method; Number of Units Produced and basic know-how of other Methods/Techniques being commonly used by the Industry.
- VII. Fundamental and Technical Analysis of various Forms of Organizations:** Financial Statements' Analysis including both Horizontal (Measuring Change) and Vertical (Ratio) Analysis including Liquidity Ratios, Activity Ratios, Debt Ratios, Profitability Ratios and Market Ratios; Technical and Industry Analysis.

**(B) Cost and Managerial Accounting (50 Marks)**

**VIII. Fundamental Cost Accounting Principles and Concepts:** Nature and Scope of Cost and Managerial Accounting; Cost Concepts, Elements and Classification; Underlying Differences among Financial, Cost, and Management Accounting.

**IX. Accounting for Material, Labour and Factory Overheads (FOH):** Recognition and Valuation Principles for Material Inventory, and Methods to control Material Inventory; Calculation/Measurement and Accounting for Payroll for all forms of Labour, Time Rate and Piece Rate Systems; Commonly used Group Incentive Schemes; Factory Overhead Costs and FOH Rate, Departmentalization of FOH Costs, their Allocation, Apportionment and Reapportionment (Primary and Secondary Distributions), Methods for Secondary Distribution including both Repeated Apportionment/Distribution and Algebraic Method.

**X. Costing for Specific Jobs, and Process Costing:** Nature of a Specific Job, and Job-order Costing; Process Flow and Process Costing by the use of Cost of Production Report (CPR).

**XI. Management Accounting for Planning, Decision-making and Control:**

**Budgeting and its Use:** Meaning and Nature of a Budget; Major Forms of a Budget including Production and Sales Budget, Cash Budget, Flexible Budgets, Zero-based Budget, Master Budget etc.

**Break-even Analysis:** Difference between Marginal and Absorption Costing Techniques; Concept of Relevant Cost; Application and Use of Contribution Margin and other Concepts for Planning and Decision-making (under Break-even Analysis)

**Variance Analysis:** Meaning and Use of Standards and Variances; Major Classification of Variances including Material, Labour and FOH Variances, and their Computation.

**Paper-II (MARKS-100)****(A) Auditing (40 Marks)**

**I. Fundamental Auditing Principles and Concepts:** Audit and Auditing, True and Fair View, Audit Assertions, Reasonable Assurance, Documentation and Audit Evidence, Audit Program, Audit Risks, Computer Information Systems (EDP Systems) and Computer-assisted Audit Techniques (CAAT), Inspection, Fraud, Going Concern, Audit Materiality, Misstatement, Governance and Premise, Tests of Control and Substantive Procedures.

**II. Audit Considerations, Dimensions and Conduct:** Internal Control System and Internal Audit, Internal VS External Audit, Responsibility for Financial Statements, Audit Planning, Scope of an Audit, Objectives of an Audit, Inherent Limitations of an Audit, Risk Assessment and Management, Internal Audit and Corporate Governance,

Classification of Audit, Qualities of an Auditor, Auditing in Computer Information Systems (EDP Systems) and Computer-assisted Audit Techniques, General Auditing Principles and Techniques commonly applicable to various Types of Undertakings including Merchandizing, Manufacturing, Banking, Insurance, Investment Entities etc., Audit Performance and Audit Completion.

- III. Role and Responsibilities of an Auditor:** Auditor's professional and legal Rights, Responsibilities & Duties, and Liabilities; Auditor's Opinion and Report, and their classification (Types); - as specified under the Companies Ordinance 1984, and in the handbook of IFAC.

**(B) Business Taxation (30 Marks)**

- IV. Tax Structure, and Fundamental Concepts vis-à-vis Income Tax in Pakistan:** Tax Structure in Pakistan; Fundamental Definitions/Terminologies defined under Section 2 of the Income Tax Ordinance 2001.

- V. Income Tax and Sales Tax Principles, and their Application:** Selected Provisions from Income Tax - Income for Tax Purposes [Section 4, 9 & 10], Heads of Income [Section 11], Tax Payable on Taxable Income [First Schedule to the Ordinance], Salary Income and Taxation [Sections 12 to 14], Income from Property [Sections 15 & 16], Income from Business [Sections 18 to 20], Capital Gains [Sections 37 to 38], Income from other sources [Section 39, 40, 101(6), 111], Tax Credits [Sections 61 to 65], Taxation of Individuals, AOPs and Companies [Sections 86, 92, 94], Due Date for Payment of Tax [Section 137], Deduction of Tax at Source/With-holding Tax [Sections 147, 149, 153, 155] and related Income Tax Rules 2002.

Selected Definitions and Provisions from Sales Tax – Scope of Tax [Section 3], Exempt supply [Section 2(11)], Goods [Section 2(12)], Input Tax [2(14)], Registered person [Section 2(25)], Supply [Section 2(33)], Tax [Section 2(34)], Retail Price and Retailer [Section 2(27) & 2(28)], Taxable Activity [Section 2(35)], Taxable Supply [Section 2(41)], Tax Fraction [Section 2(36)], Tax Period [Section 2(43)], Time of Supply [Section 2(44)], and Determination of Tax Liability [Section 7].

**(C) Business Studies, and Finance (30 Marks)**

- VI. Business Studies:** Nature and Scope of a Business Entity, Contemporary Challenges posed to a Business; Common Legal Forms of a Business Entity – Sole-proprietorship, Partnership, Joint Stock Company, their Features, Formation and Management; Business Combinations and their Scope; Business Cycle and its Implications; Role of Information Technology in Business.

- VII. Finance:** Meaning, Nature and Scope of Finance, and Financial Management; Common Modes (Types) of Business Finance – Short-, Medium-, and Long-term Financing; Nature and Scope of Financial Markets and Institutions; Features and Classification of Financial Markets; Financial Management Techniques for Decision-making: Time Value of Money, Cost of Capital and Capital Budgeting Techniques.

**SUGGESTED READINGS**

<b>S.No.</b>	<b>Title of Books</b>	<b>Author</b>
<b>Accounting Paper – I (100 Marks)</b>		
1	Financial Accounting, and Intermediate Accounting	Kieso, Weygandt and Warfield
2	Fundamentals of Accounting Principles	Wild. Larson. Chiappetta
3	Accounting for Decision-making	Meigs, William and Haka
4	IFRSs / IASs	ICAP / IFAC
5	Principles and practice of Book Keeping and Accounts	Vickery, B.G
6	Financial Accounting	M. Hanif and A. Mukherjee
7	Principles of Accounting, and Advanced Accounting	Sohail Afzal
8	Principles of Accounting, and Advanced Accounting	M.A Ghani and Ejaz
9	Cost Accounting – Planning and control	Usry, Hammer, Matz
10	Managerial Accounting	Peter C. Brewer, Ray H. Garison, Eric W. Noreen.
11	Cost Accounting	Jain and Narang
12	Cost Accounting	Nisar ur Din.
<b>Accounting Paper – II (100 Marks)</b>		
13	Auditing- Principles and Techniques	S. K. Basu
14	Auditing	Dicksee, L.R
15	Practical Auditing	Spicer and Pegler
16	Companies Ordinance 1984	SECP
17	Auditing	S. K. Millichamp, ELBS
18	Handbook of International Quality Control, Auditing, Review and Other Assurance	ICAP / IFAC
19	Auditing	M. Irshad
20	Advanced Auditing	Prof. Dr. Khuaja Amjad Seed
21	Income Tax Ordinance 2001	FBR
22	Introduction to Taxation / Synopsis of Taxes in Pakistan	Mirza Munawar Hussain
23	Law in Practice – Income and Sales Tax	Abdul Razzaq
24	Business Taxation	Ijaz Ali Waince

<b>S.No.</b>	<b>Title of Books</b>	<b>Author</b>
25	Principles of Managerial Finance	Lawrence J.Gitman
26	Fundamental of Financial Management	Van Horne. Wachowicz Jr. Bhaduri
27	Basic Business Finance	Hunt, Williams and Donaldson
28	Business Studies	Hall, Jones and Raffo
29	Foundations of Financial Markets and Institutions	Fabozzi, Modigliani, Jones and Ferri
30	Contemporary Business	Kurtz and Boone
31	Principles and Practice of Commerce	Stephenson
32	Introduction to Business	M. Saeed Nasir

**PAPER: AGRICULTURE & FORESTRY (100 MARKS)**

**Part-I: Agriculture (50 marks)**

- I. Concept of Integrated Agriculture:** Components of natural resources as bases for agriculture production (Land, Water, biological, Environmental, Solar, Energy)
- II. Challenges in Pakistan's Agriculture:** Present scenario and future prospects. Analytical overview: issues and strategies for improvement of crop management, livestock management, fisheries, cottage industry, resource management and rural development. Institutions and policies: issues and options.
- III. Elements of Climate and their Relationship with Crop Growth:** Farming Systems, biological nitrogen fixation, soil profile, structure and texture, soil fertility, soil erosion and conservation, water logging and salinity
- IV. Genetic Improvement for Crop Production:** GMO crops, Seed production technology.
- V. Horticulture:** Floriculture, landscaping, pests and diseases of agriculture crops and their control, integrated pest management.
- VI. Rainfed and Irrigated Agriculture:** Agriculture mechanization, land tenure and land reforms, role of agriculture in national economy.

**Part-II Forestry = (50 Marks)**

- I.** Forest, rangelands and wildlife importance and significance
- II.** Forest management and utilization, wood based industries in Pakistan, silviculture
- III.** Range management and utilization
- IV.** National and international forest wealth statistics
- V.** Role of wildlife as value addition to forestry
- VI.** Forest based wildlife resources of Pakistan and their management, eco-tourism
- VII.** Forestry, agroforestry, social forestry and forest biometrics
- VIII.** Socio-economic and ecological impact of man made forests
- IX.** Watershed Management and role of forests in prevailing climate change dilemma
- X.** National forest laws and policies at national level, biodiversity & environment

**SUGGESTED READINGS**

<b>S.No.</b>	<b>Title</b>	<b>Author</b>
1.	Shaping the Future of Water for Agriculture	World Bank, USA
2.	Participatory Rural Development in Pakistan	Khan, M. H
3.	Agriculture in Pakistan	Khan M. H.
4.	Economic Survey of Latest Years	
5.	Agric/Livestock/Machinery/Rural Developments Censuses of Latest Years	
6.	Fundamentals of Soil Science	Henry D. Foth
7.	Manual of Plant Production	Abdul Manan.
8.	Principles of Field Crop Production	Martin., J.H. & Leonard, W.H.
9.	Diseases of Field Crops	Dickson, J.G
10.	Irrigation Principles & Practices	Isrealson, O.W. Vaughn, E. Hansen.
11.	A Text Book of Plant Pathology	A.V.S.S. Sambamurti
12.	Breeding Field Crops	Poehlman
13.	The Principles of Agronomy.	Harris, Franklin Stewart
14.	Forest Types of Pakistan	Champion, H.G., S.K. Seth and, G.M.Khattak
15.	Manual of Silviculture for Pakistan	Champion, H.G., S.K. Seth and G.M.Khattak
16.	Trees of Pakistan	M.I. Sheikh
17.	Range Management in Pakistan	M.A.A. Qureshi
18.	Comprehensive Forestry	B.A. Raza
19.	Farm Forestry in Pakistan,	M.A.A. Qureshi
20.	Forest Management	G.M. Khattak,
21.	Wildlife Ecology, Conservation and Management	A. R. E. Sinclair, J. M. Fryxell, G.Caughley
22.	Basics of Forestry & Allied Sciences	Dr. Masood A.A. Qureshi



**PAPER: ANTHROPOLOGY (100 MARKS)**

**I. Anthropology**

- Definition of anthropology, its historical development and recent trends

**II. Social Anthropology**

- Definition of culture, its characteristics and functions
- Relationship of anthropology with other social sciences
- Sub fields of anthropology:
  - a) Biological Anthropology,
  - b) Archaeology,
  - c) Linguistic Anthropology
  - d) Socio-Cultural Anthropology
- **Institution of Family and Marriage**  
(Definitions, types, structures, functions, family organization)
- **Kinship and Social Organization**  
(Definitions, types, functions, kinship terminology etc)
- **Economic Organization:**  
(Definitions, evolution, substantivism versus formalism, reciprocity, production, consumption, distribution, barter and primitive economic systems)
- **Political Organization:**  
(Definitions, evolution of political system, characteristics of (band, tribal, chiefdom and state societies), theories of the origin of state societies (internal conflict theories, external conflict theories, population and irrigation theories, institutionalization of leadership and the emergence of state, system theories), origin of civilization, the politics of identity, ethnicity and ethnic relations, nationalism, modernism, post-modernism etc.
- **Religion:**  
(Definitions, evolution of primitive religions, functions of religion, comparison of devine religions and other world religions such as Hinduism, Buddhism, Jainism etc)
- **Contemporary Human Problems:**  
Poverty, social inequality, political instability, population problems, ethnic violence and terrorism etc.

### **III. Urban Anthropology**

Rural-urban migration, expansion of cities, major environmental issues, sanitation problems, urbanization and development, establishment of slums and squatter settlements, refugees, yankees, betties, gypsies, wars and conflict, conversion of power from feudal to industrialists, institutionalization, education system, and change in the mode of production (agriculture to capitalists), poverty (theories and remedies), management of city life (psychological, cultural, economic, political, religious, physical, environmental, ecological, demographical, lingual etc.), Karl Marx and conflict theory, problems created by the mechanization and automation.

### **IV. Socio-Cultural Change**

Definitions, difference between social and cultural change, various dimension of cultural change, barriers to cultural change including (culture, psychological and political), internal dynamics for change, external dynamics for change, population increase and change, diffusion of innovations, socio-religious barriers in accepting the innovations and new ideas, media and cultural change, dynamics of change in Pakistan (Trends and prospects)

### **V. Ethnicity and Race**

Theories related to ethnicity and race, ethnicity and racism, nations and nationality, ethnic conflict, degree of social variation, rank societies, caste and class societies and social stratification etc.

### **VI. Anthropological Theories**

- Contributors: (Edward Burnett Taylor, Lewis Henry Morgan, James Frazer, Karl Marx, Edmund Leach, Franz Boas, Margaret Mead, Ruth Benedict, Alfred L. Kroeber, Alfred Reginald Radcliffe-Brown, Bronislaw Kasper Malinowski, Clifford Geertz, Talal Asad, Akbar S. Ahmad, Ibn Khaldun, Shah Waliullah)
- Classical Theories: (Degenerations, Evolutionism, Neo-Evolutionism, Diffusions)
- Modern Theories: (Functionalism, Structural-functionalism, Class struggle, Structuralism, Historical Particularism, Feminism, Culture and personality)
- Current Trends in Anthropological Thoughts: (Post Modernism, Romanticism, Poetics and Politics of Ethnography)

### **VII. Anthropological Research Methods**

- Meaning, definition, types and aims of anthropological research
- Qualitative and Quantitative research
- Purpose of research, research question, variables, hypothesis, research objective(s), research design, sampling, field data collection, tools of data collection (questionnaire, interview, participant observation), data classification, data analysis, and reporting.

**SUGGESTED READINGS**

<b>S.No.</b>	<b>Title</b>	<b>Author</b>
1.	Anthropology	William A Haviland
2.	Cultural Anthropology	Onrad Philip Kottak
3.	Diffusion of Innovation	Evert M. Roger
4.	Socio Cultural Dynamics and impact of Technological Change	G. M. Foster
5.	Pakistani Society	Akber S. Ahmed
6.	Economic Anthropology	Sutti Ortiz
7.	Political Anthropology: An introduction	Ted. C. Lawellen
8.	Pukhtun economy and society	Akber S. Ahmed
9.	Principles of Anthropology	Eliot Dismore Chapple and Carleton Stevens Coon
10.	Anthropology and Modern life	Franz Boas
11.	Anthropology and Contemporary Human Problem	John H. Bodley
12.	Sindh and the Races that inhabit the Valley of the Indus	Richard Burton
13.	The People of Pakistan	Yu. V. Gankorvsky
14.	Anthropology and Development	Jean-Pierre Olivier de Sardan
15.	An Introduction to Theory in Anthropology	Robert Layton
16.	Anthropological Theory	John R. McGee and Richard L. Warms
17.	Anthropology in Pakistan	Stephen Pastner and Louis Flam
18.	Anthropology (13th edition)	Carol R. Ember, Melvin R Ember and Pet N Peregrine
19.	Other Cultures	John Beattie
20.	A Hand Book of Social Science Research	Bevelry R. Dixon, Gary D Bouma and G.B.J. Atinson
21.	Frontier Perspectives: Essays in Comparative Anthropology	Clarlies Lindholm
22.	Generosity and Jealousy: The Swat Pukhtun of Northern Pakistan	Clarlies Lindholm
23.	Friend by Day and Enemy by Night: Organized Vengeance in a Kohistani Community	Lincoin Keiser

S.No.	Title	Author
24.	A Punjabi Village in Pakistan	Zekiye Eglar
25.	The social organization of the Marri Baluch	Robert Niel Pehrson
26.	Introducing Anthropology	Park, MA 2007
27.	Peoples and Cultures of Asia	Scupin, R 2005
28.	Outlines and Highlights for Anthropology	Scupin, R and Decorse, CR 2010
29.	Economic Anthropology	Stuart plattner
30.	Economies and Culture	Richard Wilk
31.	Introduction to Anthropology of Religion	Brian Moris

**PAPER: APPLIED MATHEMATICS (100 MARKS)****I. Vector Calculus (10%)**

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 (10%)**

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 (10%)**

- 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 (20%)**

- 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 (20%)**

- 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 (30%)**

- 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 differentiation and integration; trapezoidal rule, Simpson's rules, Gaussian integration formulas.
- Numerical solution of an ordinary differential equation; Euler and modified Euler methods; Runge-Kutta methods.

**SUGGESTED READINGS**

<b>S.No.</b>	<b>Title</b>	<b>Author</b>
1.	An Introduction to Vector Analysis	Khalid Latif,
2.	Introduction to Mechanics	Q.K. Ghorl
3.	An Intermediate Course in Theoretical Mechanics	Khalid Latif,
4.	Differential Equations with Boundary Value Problems	D. G. Zill and M. R. Cullen
5.	Elementary Differential Equations	E.D. Rainville, P.E. Bedient and R.E. Bedient
6.	Introduction to Ordinary Differential Equations	A.L.Rabenstein
7.	Advanced Engineering Mathematics	E. Kreyszig
8.	An Introduction to Numerical Analysis	Mohammad Iqbal
9.	Numerical Analysis	R.L Burden and J.D Faires
10.	Elements of Numerical Analysis	F. Ahmad and M.A Rana
11.	Mathematical Methods	S. M. Yousaf, Abdul Majeed and Muhammad Amin

**PAPER:****ARABIC****(100 MARKS)****A. Pre-Islamic period (العصر الجاهلي)**

1. Influence of poets and poetry in *Jahiliia* period.  
(أثر الشعر و الشعراء في العصر الجاهلي)
2. Literary markets in pre-Islamic Arabs especially *Ukkaz*.  
(أسواق الأدب في العصر الجاهلي خاصة سوق عكاظ)
3. Purposes and features of pre-Islamic poetry special reference to *Mu'allaqat*.  
(أغراض الشعر الجاهلي و مزاياه مع التركيز على المعلقات)

**B. Dawn of Islam (عصر صدر الإسلام)**

1. Eloquence and Rhetoric of Holy Quran with examples from Quranic verses.  
(فصاحة القرآن و بلاغته مع الأمثلة من القرآن الكريم)
2. Impact of Quran and Hadith on the subsequent literature.  
(أثر القرآن و الحديث في الأدب العربي)
3. Poetry at the Dawn of Islam (الشعر في عصر صدر الإسلام)

**C. Umayyad Period (العصر الأموي)**

1. Art of Flyting (فن النقائض)
2. Erotic and platonic *ghazal* (الغزل الصريح والغزل العذري)

**D. Abbasid and Spanish Period (العصر العباسي والأندلسي)**

1. Purposes and features of Abbasid poetry with special emphasis on the poetry of Mutanabbi, Abu Tammam, Abu Nuwas, AbulAtahia  
(أغراض الشعر العباسي و ميزاته مع التركيز على شعر المتنبي و أبي تمام و أبي نواس و أبي العتاهية)
2. Prose and its different styles with special emphasis on style of IbnulAmeed, IbnulMuqaffa, Al-Jahiz and Al-Qazi al Fazil.  
(النثر و أساليبه المختلفة خاصة أسلوب ابن العميد و ابن المقفع والجاحظ و القاضي الفاضل)
3. Spanish poetry, with special reference to poetry of Ibn e Zaidoon  
(الشعر الأندلسي خاصة شعر ابن زيدون)

**E. Contemporary Arabic literature (الأدب العربي المعاصر)**

1. Development of Drama with special focus on services of Toufeeq al Hakeem  
(تطور المسرحية مع التركيز على أعمال توفيق الحكيم)
2. Development of Novel with special reference to the novels of Taha Husain and NageebMahfooz  
(تطور الرواية مع التركيز على روايات طه حسين و نجيب محفوظ)
3. Development of short story with special focus on short stories of MahmoodTaimoor  
(تطور القصة القصيرة مع نموذج من القصص القصيرة عند محمود تيمور)
4. Poetry with special focus on poetry of Ahmad Shouqi and Hafiz Ibraheem  
(خصائص الشعر مع التركيز على شعر أحمد شوقي و حافظ إبراهيم)

**F. Common Topics of different periods**

1. Criticism from pre-Islamic era to the 4th Islamic Century  
(النقد في الأدب العربي: من العصر الجاهلي إلى القرن الرابع الهجري)
2. Art of Oratory from pre-Islamic era to Umayyad period  
(الخطابة: من العصر الجاهلي إلى العصر الأموي)
3. Development of Arabic literature in the Sub-Continent: (Ghulam Ali Azad in poetry and Shah WaliUllah in prose)  
(تطور الأدب العربي في شبه القارة الهندية: غلام علي آزاد في الشعر و شاه ولي الله في النثر)

**G. Poetry for Arabic paper**

1. Verses from ode of ImraulQais (1-10)  
من: (قفانبكمنذكرى حبيبومنزل...إلى : ولاسيمايومبدارةجلجل)
2. Verses from Qaseedah of Zuhair bin AbiSulma (50-62).  
من: (ومن لا يصانع في أمور كثيرة...إلى: فلم يبق إلا صورة اللحم والدم)
3. Verses from poetry of Hassan bin Thabit (14-28)  
من: (فإماتعرضواعننااعتمرنا...إلى: لعرضمحمدمنكموفاء)
4. Verses from poetry of Ka'b bin Zuhair (33-40)  
من: (يسعى الوشاة بجنبهاوقوله... إلى: أرى وأسمعألويسمعألفيل)
5. Verses from poetry of Hafiz Ibrahim (1-10)  
من: (رجعتلنفسيفأتهمتحصاتي...إلى: فياليتكمتأتونبالكلمات)
6. Verses from ode of Ahmad Shouqi(1-10)  
من: (ولدالهدى قالكانناضيأ...إلى: دونالأناموأحرز تحواء)
7. Verses from Qaseedah of Imam Al Booseri (15-24)  
من: (مئليبردجماحيمنغوايتها...إلى: فانتتغرفكيد الخصموالحكم)

**H. Arabic Grammar(قواعد العربية)**

1. **Syntax (النحو)**: Kinds of Sentence (Nominal and Verbal), kinds of Noun ("Proper and Common", "Masculine and Feminine", "Singular, Dual and Plural", "Mu'rab and Mabni"), Case-Ending.  
(أقسام الجملة: الفعلية و الإسمية-- أقسام الاسم: "المعرفة و النكرة", "المؤنث و المذكر"  
"المفرد و التثنية و الجمع", "المعرب و المبني--الإعراب)
2. **Morphology (الصرف)**: Etymology (roots), Mujarrad, Mazeed-fee, Transitive and Intransitiveverb, Active and passive voice.  
(الإشتقاق-- المجرد والمزيد فيه--الفعل اللازم و المتعدي--الفعل المبني المعلوم و المبني المجهول )



### Suggested Readings

- A Literary History of the Arabs by Reynold A. Nicholson, Published by Cambridge University Press.
- History of Arabic Literature (تاريخ الأدب العربي) by Ahmad Hasan Zayyat, Published by Darul Marifat دار المعرفة Beirut Lubnan.
- The Contribution of India to the Arabic Literature by Dr. Zubaid Ahmad, Published by Idara Saqafat Islamia, Lahore.
- Muallim-ul-Insha'a (معلم الإنشاء) by Maulana Abdul Majid Nadavi, Majlis Nashriyat Islami, Karachi.
- Arthur J. Arberry, Modern Arabic Poetry, Cambridge University Press London 1962.
- Selections from Arabic Poetry & Prose (شذرات من الشعر والنثر العربي) by Dr. Khaliq Dad Malik, Published by Azad Book Depot, Lahore.
- Applied Arabic Grammar (تطبيق القواعد العربية) by Dr. Khaliq Dad Malik, Published by Azad Book Depot, Lahore.
- Tasheel Al-sarf wa Al-Nahv تسهيل الصرف وتسهيل النحو by Khan Muhammad, Published by Zia ul Quran Lahore.
- "Jawahir al-Shar" جمع وترتيب وشرح الشاعر / الشرييني شريدة، طبع بدار الحديث القاهرة Darul Hadith Cairo.
- Arabic Literature (الأدب العربي) (Elective Arabic Course B.A. Punjab University Lahore).
  - الجامع في تاريخ الأدب العربي، حنا الفاخوري، دار الكتب العلمية، بيروت.
  - تاريخ الأدب العربي، الدكتور شوقي ضيف، دار المعارف، مصر.

PAPER:

**BALOCHI****(100 MARKS)**

(الف) شاعری۔ ۲۰ نمبر

- ۱۔ بلوچی گیدی شاعری (تبرہ پیار)
- ۲۔ کلاسیکل شاعری (بن گپ، شاعر، شاعری)  
(شعر مرید، مہناز، بنگر، حمل، شہینہ، بلا لاق، کورنچ، ملا فاضل، جام درک، مست تو کلی، مانک سبک، ملک دینا، صرہاڑی،  
جرم علی مری، جوانا لگئی، پکا کا بن داری)
- ۳۔ نوکیس شاعری (تبرہ، سر مال، شاعر)  
(میر گل نان نصیر، عطاشاد، سید باغی، آزاد، بنالہ، بی، محمد حسین علقا، مراد سحر، اکبر پارکزی، کریم پاشی، بلقر علی قلندر،  
بی آر ملا، بشیر بیدار، مبارک کاشی، ڈاکٹر فضل نافع، نلام حسین شوہان، اللہ بخش بن داری)

(ب) روائے۔ ۲۰ نمبر

- ۱۔ روائے تبر
- ۲۔ گنجین روائے (قصہ، قتل، چاق، چاچا، بھارت)  
نوکیس روائے (اول، آزاد، کسمانک، گلدکاری، سفر نامہ، نظرو مزاج)  
(سید باغی، عزیز بک، منیر احمد، دینی، فنی پرواز، ڈاکٹر نعمت اللہ، بکیم، بلوچ، محبوب، بلوچ، میر عاقل خان، میمن،  
میر مشا خان مری، محمد بیک، شگل، صاحب اختیار، صدیق آزاد، کریم پاشی، ڈاکٹر علی دوست، بلوچ)

(ج) تاریخ و ثقافت۔ ۱۵ نمبر

- ۱۔ بلوچ، بلوچستان، رامید پتری، خرد
- ۲۔ بلوچستان، حاکم، بلوچ حکومت، انگریز، انی، آٹک، تاجا، کستان، جوڑشت
- ۳۔ بلوچ ریڈیو، گنجین، کتب و پمات

(د) بلوچی زبان۔ ۱۵ نمبر

- ۱۔ بلوچی زبان، بنگ، دیو دیو، رسم الخط، کسوڑ، مالو، معیاری زبان، بلوچی گریٹر

(و) پشیمان۔ ۱۰ نمبر

- ۱۔ گنجین، سر مال، مراد جس، پشیمان

- (م) رجا تک ۱۰ نمبر  
۱ چانگریزی، بلوچی، چبلوچی، انگریزی رجا تک  
(و) بلوچی لوک ادب ۱۰ نمبر  
لوئی، سوت، سپت، زبیروک، لاڑوگ، پلو، لیکو، ڈیسی، موئیک، دستانگ

### سرشونی کتاب

- ۱: بلوچی زبان و ادب کی تاریخ (مختصر جائزہ) سید باغی  
۲: بلوچی زبان لہزائیک۔ اشیر عبداللہ اور شاہوانی  
۳: قدیم بلوچی شاعری کا تنقیدی جائزہ۔ واحد بیز دار  
۴: شائیم۔ واحد بیز دار  
۵: گچیس کسانیک۔ اشیر شاہوانی  
۶: بلوچی قصی لہزائیک (تکج، دیروی) ڈاکٹر عبدالصبور بلوچ  
۷: تاجپیران۔ صدیق آزاد  
۸: بلوچی بومیا۔ حاجی عبدالقیوم  
۹: لوزاکی ایرادگری۔ میر نائل خان مینگل  
۱۰: بلوچی رزمیہ شاعری۔ میر گل خان نصیر  
۱۱: بلوچی عشقیہ شاعری۔ میر گل خان نصیر  
۱۲: بلوچستان قدیم و جدید تاریخ کی روشنی میں۔ میر گل خان نصیر  
۱۳: تاریخ بلوچستان۔ (اول و دوم) میر گل خان نصیر  
۱۴: گچیس (روائیک) صورت خان مری  
۱۵: نوکیس نام۔ بلوچی لہزائیکی دیوان  
۱۶: گچیس آزمائیک۔ حکیم بلوچ  
۱۷: بتل، گشتن، مچوند۔ شے رگام  
۱۸: بلوچی روائیک، سفر۔ طاہر حکیم

**PAPER:****BOTANY****(100 MARKS)****I. Algae, Fungi and Bryophytes**

- Phycology: Distribution, Classification, Structure, Life History and Economic importance of the main groups of Algae.
- Mycology and Plant Pathology: Structure, Reproduction, Classification and Economic importance of the main groups of Fungi. Diseases of economically important crops and general principles of their control
- Bryology: Structure and reproduction of bryophytes, Evolution of Gametophyte and Sporophyte.

**II. Pteridophyta and Gymnosperms**

- General account with special reference to structure, life history and affinities of both Pteridophytes and Gymnosperms. Ontogeny and structure of seed, classification and economic importance of Gymnosperms.

**III. Anatomy and Embryology**

- Primary and secondary tissues. Meristems. Secondary growth in dicot stem. Anatomy of leaf, stem and root.
- Micro and megasporogenesis, pollination mechanism, fertilization, development of Embryo and Endosperm, Seed dispersal.

**IV. Taxonomy of Angiosperms**

- Systems of classification. Rules of botanical nomenclature. Concepts of speciation. Introduction to modern trends in plant taxonomy: bio-systematic, chemotaxonomy and numerical taxonomy. General characters and economic importance of common angiosperm families.

**V. Plant Physiology**

- Plant water relations, Osmotic Quantities, component potentials of water and their role in transport, water absorption by roots, transpiration. Role of essential mineral elements and their uptake. Plant hormones. Photoperiodism, Vernalization. Dormancy and Seed germination. Enzymes.
- Photosynthesis: Plant pigments, Light reaction, CO<sub>2</sub> fixation, Mechanism of photophosphorylation.
- Respiration: Glycolysis, Krebs cycle, Mechanism of oxidative phosphorylation.

**VI. Ecology**

- Influence of climatic, edaphic and biotic factors on plant growth. Vegetation sampling techniques. Concepts of ecosystems and their productivity, ecological energetics, Pyramids (of numbers, biomass and energy), trophic levels, food chains and food webs. Biogeochemical cycles (Hydrological and Nitrogen). Succession.
- Causes and reclamation of soil salinity and water logging in Pakistan. Soil erosion, its control and soil conservation methods. Deforestation. Biodiversity conservation. Pollution.

**VII. Cytology**

- Cell cycle, cellular morphology, chemistry of cell wall and cell membrane, cell to cell communication, plant tissue and cell culture, cell senescence and cell death.
- Ultra-structure of various cell organelles: Mitochondria, Golgi bodies, Endoplasmic reticulum, Plastids, Ribosomes, Glyoxysomes, Vacuoles, Nucleus.

**VIII. Genetics**

- Mendelian Genetics, Multiple Alleles, Polygenic inheritance, Gene interaction, Epistasis and pleiotropy, Sex-linked inheritance, Chromosomal aberrations, Mutations, DNA repair.

**IX. Evolution**

- Introduction of Evolution, Evolutionary history, Evolution of life, Convergent Evolution, Divergent Evolution, Parallel Evolution and Natural selection

**X. Molecular Biology**

- Nucleic acids, DNA as hereditary material, DNA replication, Transcription, Genetic code, Protein synthesis, Genetic engineering and its application, Genetically Modified Organisms (GMO).

**SUGGESTED READINGS**

S. No.	Title	Author
1.	Esau's Plant Anatomy: Meristems, Cells and Tissues of the Plant Body: Their Structure, Function and Development	Evert, F.F. and S. Hichhorn 2006
2.	Cryptogamic Botany-Algae and Fungi	Smith, G. M. 2001
3.	Cryptogamic Botany-Bryophyte and Pteridophyte	Smith, G. M. 2001
4.	Comparative Morphology of the Vascular Plants	Foster, A.S. and E.H. Gifford. 1989
5.	Plant and Environment	Daubermine, R, F, 1974
6.	Plant Taxonomy and Biosystematics	Stac, C. A. 1980
7.	Plant Physiology	Taiz, L.& E. Zeiger 2006
8.	Genetics: A Conceptual Approach. 4 <sup>th</sup> edition	Pierce, B. A. 2012
9.	Molecular Cell Biology	Lodish, H., A. Berk, S.L. Zipursky, P. Matsudaira, D. Baltimore and J. Darnell 2000
10.	Concepts of Genetics. 10 <sup>th</sup> edition	William S. Klug. 2012
11.	Ilmi Biomolecules, Cell Biology and Genetics.	Cheema, T.A. and Cheema Z.T. 2009

S. No.	Title	Author
12.	Carvan Textbook of Botany Paper “ A” (Morphology of Plants)	Malik, T. A. 2006
13.	Ecology (Principles and applications). 1st ed. Cambridge University Press UK.	Chapman, J.L. and Reiss, M.J. 1992.
14.	Fundamentals of Ecology	Odum, E.P. and Barrett, G.W. 2004
15.	Advanced Plant Taxonomy	Mondal, A. K., 2009
16.	Growth and Differentiation in Plants	Phillips and Wareings

**PAPER:** **BRITISH HISTORY** **(100 MARKS)**

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**Part –I (Marks 50)**

**I. The Glorious Revolution (1688)**

- Causes, and Results
- William III and Mary II (1689-1702)
- Queen Anne (1702-1714)

**II. Hanoverian Era (1714-1790)**

- Jacobite Rebellions (1715 and 1745)
- Robert Walpole and Whig Oligarchy
- American War of Independence (1776)

**III. The Union of England and Scotland**

**IV. Union of England and Ireland**

**V. The Old Colonial system**

**VI. The French Revolution and Napoleonic Wars**

- Causes
- Britain and Napoleonic Wars
- Impact on Britain

**VII. Industrial and Agricultural Revolution**

- Causes
- Effects on Political and Social Life of Britain
- Party Politics
- The Methodist Movement
- Socialism
- Liberalism
- Colonization
- Chartist Movement

**VIII. Robert Peel and return of Tories**

- Internal policies
- Irish Problem

**IX. Victorian Era (1837-1901)**

- Internal Reforms
- Liberals
- Foreign Policy
- Disraeli, Gladstone and Problems in Ireland

- Great Britain and Free Trade

**X. Edwardian Era (1901-1910)**

- Domestic and Foreign Policies (1901-1910)
- The Origins of Labor Party

**XI. Britain, World War I and its Aftermath**

- Causes
- Britain and Peace settlement
- Effects of War on Britain
- League of Nations
- The Great Depression
- Appeasement and Rearmament

**Part –II (Marks 50)**

**XII. Britain ,World War II and its Aftermath**

- Causes and events
- Churchill, War Conferences
- Creation of U.N.O
- Effects of war
- Reforms of Labour Government

**XIII. Great Britain and Cold War**

- Creation of Common Wealth
- NATO
- Decolonization of the British Empire
- Internal Policies and EEC
- Foreign Policy

**XIV. Thatcherism to Cameron (1979-2012)**

- Internal Policy
- Society and culture
- Foreign Policy
- Falkland War
- John Major and his Policies
- European Common Market and the Great Britain
- Formation of EU
- Tony Blair “New Labour” Economic Crunch, War on Terror and his Policies
- Global Financial Crisis 2008 and the Great Britain
- Reforms under Cameroun



**SUGGESTED READINGS**

<b>S.No.</b>	<b>Title</b>	<b>Author</b>
1.	The Conservative Party from Peel to Thatcher	Blake, Robert, 1985
2.	A New History of England, 410-1975.	Oxford, New York, Pergamum Press, 1968.
3.	Trends in Britain Politics since 1945	Cook,Chris and John Ramsden eds. 1978
4.	The Hanoverians, 1714-1815	Green, V.H. 1976
5.	The People's Peace: British History 1945-1990	Morgan,Kenneth O,1992
6.	Textbook of Modern English History 1714-1960	Southgate,G.W.A, 1961
7.	English History, 1914-1945	Taylor, A.J.P. 1965
8.	Europe Since Napoleon	Thompson, David.1983
9.	English Social History	Trevelyan, G.M.
10.	Britain and Empire.	L.J. Butler.
11.	Democracy: Great Britain 1815—1914	Bentley, Michael
12.	England in the Eighteenth Century	Serlley, W.T.
13.	History of Britain	Carter, E.H.
14.	Mastering Modern British History	Norman Lowe
15.	The Struggle for Mastery in Europe 1848—1918	Taylor, A.J.P.

**PAPER: BUSINESS ADMINISTRATION (100 MARKS)****I. Management**

- Defining Organization, Management, and Management in Organizations
- Four Management Functions, Management Roles, Management Skills
- Organizational Internal-External Environment
- Management Planning, Goal Setting, and Decision Making
- Strategic Management Process: Strategy Formulation and Implementation
- Developing Organizational Structure and Design
- Designing Adaptive Organizations
- Managing Change and Innovation
- Leadership and Motivation

**II. HR Management**

- Role of Human Resource Management in Organizational Performance
- Functions of HRM
- Process and Methods of Job Analysis
- Planning and Forecasting Personnel Needs
- Recruitment and Selection
- Training and Development
- Performance Management and Appraisal: Methods and Processes
- Establishing Strategic Pay Plans
- Compensation and Benefits
- Ethics, Justice, and Fair Treatment in HR Management
- Labor Relations and Collective Bargaining

**III. Financial Management**

- **An overview of Financial Management**

Introduction and significance of financial markets, Differentiation between real assets and financial assets, Types of Financial Markets, Role of capital and money markets in economic development, Organizational goals and shareholder wealth maximization perspective

- **Time Value of Money**

Cost of money and the factors effecting the cost, Interest rate fundamentals and determinants of market interest rate, Role of Time value of money in finance, Concept of future value and present value, Making timelines, Annuities, Perpetuities and mixed stream of cash flows, with and without growth, Present value and future value of cash flow streams, Compounding Interest; discrete and continuous, Loan amortization

- **Analysis and Interpretation of Financial Statements**

Reading the financial statements, Horizontal and vertical analysis including common size, ratio, comparative and index number trend analysis, Forecasting financials for future decision making, Evaluating credit, management, profitability, risk etc using financial statements

- **Risk, Return and Introduction to Pricing**

Measures of Risks and return, Investment return and expected rate of return, Standalone risk: standard deviation and coefficient of variation, Risk aversion and required rate of return, Portfolio risk: Diversifiable vs. Market risk, Security Market Line and CAPM, Calculating WACC, Discounting process for price determination, Relevant risk and return for valuation

- **Cash flow and Budgeting**

Significance of budgeting, Making cash budgets, Making financial forecasts, Difference between profit and cash flow, Read and analyze Statement of Cash flow.

- **Capital Budgeting**

Significance of Capital budgeting, Cash flow calculations: incremental cash flows, Capital budgeting decision rules: NPV, IRR, MIRR, Return, Finding optimal capital structure, calculating appropriate discount rate, Capital Rationing

#### **IV. Operations and Supply Chain Management**

##### **a. Operations Management**

- **Operations & Productivity**

Operations Management (OM) as one of the Three Core Functions in an Organization. Significance and contributions of OM in the field of management. Future trends in OM and differences between goods and services.

- **Operations Strategy in Global Environment**

Developing mission & OM strategies, Critical Success Factors (CSF), Aligning Core Competencies with CSF

- **Process Strategy**

Four Process Strategies, Process Analysis and Design, Process Mapping, Flow Diagrams, Process Charts, Service process design, Process Re-engineering

- **Capacity Planning**

Design & Effective Capacity, Capacity Cushion, Capacity considerations, Managing demand, Capacity Planning, Leading vs Lagging Strategies, Single & Multiple Product Break Even Analysis for Capacity Planning

- **Location Strategies**

Factors Affecting Location Decisions, Methods for Evaluating Location Alternatives, Factor Rating Method, Load-Distance Methods, Center of Gravity Method, Service location Strategy

- **Layout Strategies**

Types of Layout, Layout Design, Fixed Position Layout, Process- Oriented Layouts, Office Layout, Retail Layout, Assembly Line Balancing

- **Inventory Management**

Role of Inventory in Operations, ABC analysis, Record accuracy, Cycle counting, Inventory Models, Fixed Period Systems, Continuous Review Systems, Basic EOQ Inventory Model, Safety Stock, Service Level

**b. Supply Chain Management**

- Introduction to supply chain management and logistics management

What is supply chain management and logistics management, Objectives, Importance, Examples of supply chain management and logistics management, Decision phases in supply chains

- Supply chain performance

Achieving strategic fit, Challenges in achieving strategic fit, Supply chain cost, Supply chain quality, Supply chain lead time

- Supply chain drivers

Facilities as a driver, Inventory as a driver, Information as a driver, Transportation as a driver, Sourcing as a driver, Pricing as a driver

- Balancing supply and demand

Bullwhip effect, Demand collaboration, Information sharing in supply chains, accurate response strategy

- Supply chain coordination

Obstacles in coordination, Vendor managed inventory, Collaborative planning forecasting and replenishment, Managerial levers to achieve coordination

- IT in supply chain management

Role of IT in supply chain management, Customer relationship management, Supplier relationship management, Risk management in IT, Supply chain IT in practice

**V. Marketing**

- Introduction to marketing
- Developing marketing strategies and plans
- Scanning the marketing environment
- Analyzing consumer markets
- Market segmentation
- Managing marketing information
- Branding
- Product life cycle
- Pricing
- Managing distribution channels
- Integrated marketing communications

**SUGGESTED READINGS**

<b>S.No</b>	<b>Title</b>	<b>Author</b>
1.	Management	Richard L. Daft,
2.	Management	Stephen P. Robbins, Mary Coulter, and NeharikaVohara
3.	The Practice of Management	Peter F. Drucker
4.	Human Resource Management	Gary Dessler and BijuVarkkey
5.	Human Resource Management	Noe, Hollenbeck, Gerhart, Wright.
6.	Human Resource Management	David A. DeCenzo& Stephen P. Robbins
7.	Human Resource Management	Derek Torrington & Laura Hall
8.	Essentials of Corporate Finance	Ross, Westerfield and Jordan
9.	Principles of Finance	Besley and Brigham
10.	Financial statement Analysis	George Foster
11.	Principles of Managerial Finance	Gitman and Zitter
12.	Fundamentals of Corporate Finance	Brealey, Myers and Marcus
13.	Advanced Corporate Finance	Ogden, Jen and O' Conner
14.	Operations Management for Competitive Advantage, 2006	Chase, Richard B., Aquilano, Nicholas J., and Jacobs, F. Roberts
15.	Principles of Operations Management 2005	Raturi, Amitabh S., Evans, James R
16.	Operations Management 2008	Heizer, Jay and Render, Barry,
17.	Supply Chain Management: Strategy, Planning, and Operations	Sunil Chopra, Peter Meindl, and D.V. Kalra,
18.	Supply Chain Management: From Vision to Implementation	Stanley E. Fawcett, Lisa M. Ellram, and Jeffrey A. Ogden
19.	Business Logistics & Supply chain management	Ronald H. Ballou
20.	Principles of Marketing	Kotler, Armstrong, Agnihotri and Haque
21.	Basic Marketing	Perreault and McCarthy
22.	Marketing a Practical Approach	Peter Rix

**PAPER:****CHEMISTRY****(200 MARKS)****Paper-I (100 Marks)****I. Atomic Structure and Quantum Chemistry**

Electromagnetic spectrum, photoelectric effect, Bohr's atomic model, wave and particle nature of light matter, de Broglie's equation, Heisenberg's uncertainty principle, wave functions and Born interpretation of wave functions, probability density, Eigen functions and Eigen values, Hamiltonian operator, Schrödinger wave equation and its solution for particle in one and three dimensional box.

**II. Electrochemistry**

Ions in solution, measurement of conductance and Kohlrausch's law, mobility of ions and transport number, conductometric titrations, Debye-Hückel theory and activity coefficient, determination of activities, Redox reactions, spontaneous reactions, electrochemical cells, standard electrode potentials, liquid junction potential, electrochemical series, Nernst's equation, measurement of pH, electrolytic cells, potentiometry, reference and indicator electrodes, fuel cells, corrosion and its prevention.

**III. Thermodynamics**

Equation of states, ideal and real gases, the Van der Waals equation for real gases, critical phenomena and critical constants, four laws of thermodynamics and their applications, thermochemistry, calorimetry, heat capacities and their dependence on temperature, pressure and volume, reversible and non-reversible processes, spontaneous and non-spontaneous processes, Hess's law, The Born-Haber cycle, relations of entropy and Gibbs free energy with equilibrium constant, Gibbs Helmholtz equation, fugacity and activity.

**IV. Chemical Kinetics**

The rate and molecularity of reactions, Factors affecting rate of a chemical reaction, zero, first, second and third order reactions with same initial concentrations, half-lives of reactions, experimental techniques for determination of order of reaction (integration, half-life, initial rate and graphical methods), collision theory, transition state theory, Arrhenius equation and rate equations of complex reactions.

**V. Surface Chemistry and Catalysis**

Properties of liquids, physical and chemical properties of surface, determination of surface area. Adsorption and absorption; physical adsorption and chemisorption, adsorption isotherms, Langmuir adsorption isotherm and Freundlich Adsorption isotherm. Colloids; properties, classification and preparation of colloidal systems. Surfactants, Phase rule; Gibbs equation of phase rule, one component systems, two component systems and their examples, Catalysis; homogeneous and heterogeneous catalysis, acid-base and enzyme catalysis.

**VI. Fundamentals of Chemometrics**

Sampling, significant figures, stoichiometric calculations, measurement errors, analysis of variance (ANOVA), arithmetic mean, median, mode, standard

deviation/relative standard deviation, confidence limits, Gaussian distribution, least square method, Statistical tests.

## **VII. Separation Methods**

Solvent extraction; theory of solvent extraction; solvent extraction of metals, analytical separations, multiple batch extraction and counter current distribution.

Chromatography; theory of chromatography, classification and overview of chromatographic techniques (paper, thin layer, column and ion exchange chromatographies). Principle of electrophoresis and its application as separation and characterization of proteins.

## **VIII. Basic Inorganic Chemistry**

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

## **IX. Acids and Bases**

Brief concepts of chemical equilibrium, acid–base theories including soft and hard acid and base (SHAB) concept, relative strength of acids and bases, significance of pH,  $pK_a$ ,  $pK_b$  and buffer solutions. Theory of indicators, solubility, solubility product, common ion effect and their industrial applications.

## **X. Chemistry of d and f-block elements**

General characteristics of d-block elements, historical back ground of coordination chemistry, nomenclature and structure of coordination complexes with coordination number 2-10, Chelates and chelate effect. Theories of coordination complexes; Werner's theory, Valence bond theory (VBT), Crystal field theory (CFT) and Molecular orbital theory (MOT). Jahn-Teller theorem, magnetic properties, spectral properties, isomerism, stereochemistry and stability constants of coordination complexes.

General characteristics of Lanthanides, occurrence, extraction and general principles of separation, electronic structure and position in the periodic table, lanthanide contraction, oxidation states, spectral and magnetic properties and uses. General characteristics of actinides, electronic structure, oxidation state and position in the periodic table, half-life and decay law.

**Paper-II (100 Marks)****I. Basic Concepts of Organic Chemistry**

Bonding and orbital hybridization, Localized and delocalized bonding, Inductive effect, Dipole moment, Resonance, Hyperconjugation.

**II. Saturated and Unsaturated Hydrocarbon**

Nomenclature, Physical properties, Preparation and reactions of alkanes, alkenes and alkynes.

**III. Chemistry of Aromatic Compounds**

Benzene structure, Aromaticity, Mechanism of electrophilic substitution reaction, Activating and deactivating substituents, Effect of substituents on orientation and reactivity.

**IV. Chemistry of Functional Groups**

Preparation and properties of alcohols, phenols, ethers, and amines with focus on reaction mechanism and applications. Preparation and reactions of alkyl halides. Synthetic applications of Grignard reagent. Carbonyl compounds, preparations and reaction mechanism of aldehydes and ketones and their applications. Carboxylic acids and their derivatives, acidity of carboxylic acids and effect of substituents on their acidity, preparation and reactions of carboxylic acids and their derivatives including acid halides, acid anhydrides, esters and amides.

**V. Aliphatic nucleophilic substitution and elimination reactions**

Mechanism of nucleophilic substitution reactions. Elimination reactions, Zaitsev rule and Hofmann rule. Competition between Substitution and elimination reactions.

**VI. Stereochemistry**

Molecular chirality. Types of stereoisomers. R,S configuration and E,Z designation. Optical activity, Stereoselectivity and stereospecificity. Resolution of racemic mixtures.

**VII. Organic Spectroscopy**

Theory, Principle, instrumentation and applications of UV/Visible,  $^1\text{H}$  NMR, IR spectroscopy and Mass spectroscopic techniques.

**VIII. Biomolecules**

Carbohydrates; Monosaccharides, oligosaccharides and polysaccharides, biological functions of starch, glycogen, cellulose, and cell wall polysaccharides.

Lipids; Classification and biological importance of lipids. Significance of lipids in biological membranes and transport mechanism.

Amino Acids; Classification of amino acids. Physical and chemical properties of amino acids. Biological significance.

Proteins; Classification. Properties and biological significance. Primary, secondary tertiary and quaternary structures.



Nucleic Acids; Chemical composition of nucleic acids. Structure and biological significance of nucleic acids.

Enzymes; Enzyme-substrate interactions and nature of active site, mechanism of enzyme action, kinetics of single substrate reactions, enzyme inhibition, regulatory enzymes and allosteric enzymes.

## IX. Metabolism

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

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

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

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

## X. Chemical Industries

Manufacturing and processing of sugar, cement, glass, paper, fertilizers, soap and detergents.

### SUGGESTED READINGS

S.No.	Title	Author
1.	Physical Chemistry, 4 <sup>th</sup> ed., 2005	Silbey, R. J., Alberty, R. A., and Bawendi, M. G.
2.	Physical Chemistry – A Molecular Approach, 1 <sup>st</sup> ed. 1997	McQuarrie, D. A. and Simon, J. D.
3.	Atkin's Physical Chemistry, 9 <sup>th</sup> ed. 2010	Atkins, P. and Paula, J. D.
4.	Physical Chemistry, 4 <sup>th</sup> ed. 1972	Moore. W. J.
5.	Modern Analytical Chemistry, 2000	Harvey, D.
6.	Quantitative Chemical Analysis, 8 <sup>th</sup> ed. 2011	Harris, D.C.,
7.	Analytical Chemistry. 6 <sup>th</sup> ed., 2006	Christian, G. D.
8.	CHEMOMETRICS-Statistics and Computed applications in Analytical Chemistry, 2 <sup>nd</sup> ed., 2007	Matthios, O.
9.	Statistics and Chemometrics for Analytical Chemistry, 5 <sup>th</sup> ed. 2005	Miller, J. and Miller, J
10.	Separation Chemistry 2004	Budhiraja, R.P
11.	Advanced Inorganic Chemistry, 6 <sup>th</sup> ed. 2007	Cotton, F.A. and Wilkinson, G.
12.	Inorganic Chemistry, 4 <sup>th</sup> ed. 2010	Miessler, G. L. and Tarr, D.A.

S.No.	Title	Author
13.	Inorganic Chemistry, 5 <sup>th</sup> ed. 2010	Shriver, D. and Atkins, P.
14.	Textbook of Inorganic Chemistry 2013	Chaudhary, S. U.
15.	Organic Chemistry, 10 <sup>th</sup> ed. 2011	Solomons, T. W. G., and Fryhle, C. B.
16.	Organic Chemistry, 6 <sup>th</sup> ed. 2012	Brown, W. H., Fotte, C. S., Iverson, B. L. and Anslyn, E. V.
17.	Organic Chemistry, 8 <sup>th</sup> ed. 2012	John, E. M.
18.	Introduction to Spectroscopy, 4 <sup>th</sup> ed., 2009	Pavia, D. L., Lampman, G. M., Kriz, G. S. and Vyvyan, J. R.,
19.	Spectrometric Identification of Organic Compounds 2005	Silverstein, R. M. Webster, F. X. and Kiemle, D.
20.	Organic Spectroscopy 2006	Younas, M.
21.	Stereochemistry (Basic Concepts in Chemistry) 2002	Morris, D. G.
22.	Shreve's Chemical Process Industries, 5 <sup>th</sup> ed. 1984	Shreve, R. N. and Austin, G. T.
23.	Riegel's Handbook of Industrial Chemistry 2003	Riegel, E. R., and Kent, J. A.

**PAPER:** **COMPUTER SCIENCE** **(200 MARKS)**

**Paper-I (100 Marks)**

**Section-A (50 Marks)**

**I. Introduction to Computing**

Introduction to Information Technology and Computers, History of Computing, Computer HW and SW Details, Computer System Components and Communication System, Input & Output devices and their types, Storage Media and their types, Types of Computer Hardware, Software, and Programming languages, Information Representation & Number Systems, User interfaces, Major Software Issues, Creation, formatting, and maintenance of Computer documents, Usage of Word processors, Spread sheets, Power-Point, Email, Search Engines, Browsers, Messengers, and Internet, Computers & Society, Information Security/Privacy, Computer Crimes and Ethical Challenges, Viruses, Plagiarism, Intellectual Property Rights, Difference between computer science, software engineering, information technology, information systems, computer engineering and bioinformatics; IEEE / ACM computing disciplines guidelines.

**II. Programming Fundamentals**

Basic programming elements and concepts, Problem Solving & Program Design, Components of a programming language, Program development and execution, Program structure, Data types and variable declarations, Standard I/O streams, and statements, Control structures, Standard library functions, User defined functions and parameter passing, Arrays, pointers, and strings, Structures, unions, and bit manipulation operators.

**III. Object Oriented Paradigm**

Object Oriented Programming Concepts ( Object-oriented paradigm, data abstraction, encapsulation, inheritance, Polymorphism), Introduction to Classes and Objects ( classes, objects, data members, member functions), Classes Advanced ( friends, static, composition, this, const), Operator overloading (stream insertion, stream extraction, binary operator, unary operator), Inheritance (single inheritance, multiple inheritances, protected members, method over-riding), Polymorphism (virtual function, pure-virtual functions, abstract class, abstract super class), Standard Template Library (STL), Files & streams (sequential access files, random access files), File processing, Exception Handling

**Section-B (50 Marks)**

**IV. Algorithms & Data Structures**

Fundamental concepts, Properties of algorithms, Criteria for an Algorithm, Parameters for selecting an algorithm, Algorithm Representations, Pseudo Code and Flow Charts, Designing Algorithms, Algorithm Analysis and Asymptotic Notations, Classification of Lists, Abstract Data Types, Implementation of Stacks and Queues using ADTs, Searching and Sorting Algorithms (Linear Search, Binary Search, Bubble Sort, Merge Sort, Quick Sort, Heap Sort), Stacks and Queues, Hash Tables (Linear Probing, Bucketing, Chaining), Recursion, Trees (Binary Trees, Binary Search trees, AVL Trees, Two-Three Trees), Graphs, Heuristic (Guided) Search, Genetic Algorithms, Encryption Algorithms (DES, RSA)

**V. Software Engineering**

Software Processes, Software Process Models, Agile Software Development, Analysis Modeling, Requirements Engineering, Design Concepts, Architectural Design, Design & Implementation, Software Testing, System Delivery and Maintenance, Software Evolution Formal Specification, Software Quality Assurance, Introduction to Proofs of Correctness (LNO), Distributed Software Engineering, Aspect-Oriented Software Engineering, Project Management, Process Improvement

**VI. Compiler Construction**

Difference among various type of Translators, Phases of Compilers, Classification of Compilers, Lexical Analysis (Input buffering, Specification & Recognition of tokens, Regular expressions, Finite automata, Syntax Analysis (Context-free grammars and their classification, LL(k) vs. LR(k) grammars, Top-down vs. Bottom-Up parsers, Parsing Techniques, FIRST and FOLLOW sets, Predictive Parsing using LL(1) grammars, Syntax error handling and recovery strategies), Syntax Directed Translation (Synthesized attributes, Inherited attributes, Construction of syntax trees, Top-down translation), Semantic analysis (Symbol tables, Type Expressions, Type Checking of statements), Intermediate Code Generation, Code Generation (Issues in the design of code generation, The target machine, Run-time storage management, Register allocation), Code optimization (Elimination of Redundant code, Folding of Constant, Loop optimization, Peephole optimization, Problems of optimization)

**Paper-II (100 Marks)****Section-A (50 Marks)****I. Computer Organization & Architecture**

Fundamental concepts, Overview of a Computer System, Evolution & Performance Languages, Architectural levels, Virtual machines, Processor types, Metrics, Machine instructions, Instruction execution cycle, CISC vs. RISC, Parallelism, Internal/External data representation, Computer Function and Interconnections, Cache Memory, Internal Memory, External Memory, Input /Output System, Computer Arithmetic Microprocessor and its Bus Structure, I/O Types, Types of Buses, Memory Organization and Structure, information flow and execution in Machine, Instruction Representation, Machine Instruction Characteristics, 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, Circuit switching, Packet switching, 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, Internet Address Classes, 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, Bridges and Hubs, Multiple Access), Special

topics (Security, Overlay networks, naming, Content distribution networks, Peer to peer systems, DHTs, Network Attacks)

### **III. Operating Systems Concepts**

Roles of an Operating System, Operating-System Evolution, Structures, and Operations, Classification of Operating Systems, Computing Environments, Design and Components of OS, Process Management, Process Synchronization, Deadlocks, Memory Management, Virtual Memory Management, File Systems (UNIX and Windows Systems), I/O Management

#### **Section-B (50 Marks)**

### **IV. 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

### **V. Digital Image Processing**

The relation between Image Processing, Computer Graphics, Computer Vision and Artificial Intelligence; Image Sensing and Acquisition Techniques; Representing Digital Image; Image Sampling and Quantization; Image Storage and Operations; Image Transformations (Translation, Scaling, Rotation, Shear); Image Histogram; Image Enhancement (Contrast, Smoothing, Sharpening); Gray-scale and Color Images; Color Models (RGB, CMYK and HIS); Image Restoration; Noise Models; Morphological Operators (Erosion, Dilation, Opening, Closing, Skeletonization, Thinning); Image Segmentation; Point Detection, Line Detection, Edge Detection and Boundary Detection; Image Compression

### **VI. Web Engineering & Technologies**

Modeling techniques for web applications, Introduction to web engineering, requirement engineering, requirement, types of requirements, functional requirements, non functional requirements, Requirement engineering process (Elicitation and negotiation, Documentation, Validation and verification, Management), HTML(hypertext markup language), Software Architecture, Styles, Patterns, and frameworks, Components of Web Architecture, Classifications of web architecture, Web Application layered architecture (client server, n- layered, JSP model, struts, OOHDM), Integration Architecture, Data Aspect architectures, Cascading Style Sheet(CSS), CSS properties, JavaScript (Functionalities, Events, Variables, Operators), DOM(Document Object Model), XML, RSS, API, Client-side programming using (HTML, XHTML, XML, JavaScript, and CSS), Server-side programming using PHP, Web development process, Web Application Development Methodologies, Web site promotion and deployment, Web applications Issues (Accessibility, testing, performance, operation, maintenance, security)

**SUGGESTED READINGS**

<b>S. No.</b>	<b>Title</b>	<b>Author</b>
1.	C++ How to Program	Harvey M. Deitel and Paul J. Deitel.
2.	Compilers: Principles, Techniques, and Tools	Alfred V. Aho, Ravi Sethi, and Jeffrey D. Ullman
3.	Operating System Concepts	Silberschatz, Galvin, and Gagne. John
4.	Operating Systems	William Stallings
5.	Computer Organization & Architecture	William Stallings
6.	Computer System Architecture	M. Morris Mano
7.	Computer Organization and Design: The Hardware/ Software Interface	David A. Patterson and John L. Hennessy
8.	Software Engineering	Ian Sommerville
9.	Software Engineering A Practitioner's Approach	Roger S. Pressman
10.	Data Structures and Algorithm Analysis in C++	Mark Allen Weiss
11.	Computer Networking: A Top Down approach featuring the Internet	James F. Kurose and Keith W. Ross
12.	Data and Computer Communications	William Stallings
13.	Computer Networks	Andrew Tanenbaum
14.	Fundamentals of Database Systems	Ramez Elmasri and S. B
15.	Database Systems Concepts	Silberchatz, Abraham & Korth, Sudarshan
16.	Web Services: Principles and Technology	Michael Papazoglu
17.	Electronic Commerce: The Second Wave, Ninth Edition	Gary P. Schneider
18.	Electronic-Commerce –A Managerial Perspective	Turban, Lee, King, Chung
19.	Web Engineering	Kappel, G., Proll, B. Reich, S. & Retschitzegger
20.	Styling Web Pages with CSS	Tom Negrino and Dori Smith
21.	PHP: The Good Parts	Peter B. MacIntyre
22.	Learn JavaScript	Chuck Easttom
23.	ADTs, Data Structures, and Problem Solving with C++	Larry R. Nayhoff
24.	Digital Image Processing	Gonzalez and Woods

**PAPER:** **CONSTITUTIONAL LAW** **(100 MARKS)**

- I. **Definition and Scope** of Constitutional Law, Basic Constitutional Concepts (Constitutional Conventions, Rule of Law, Due Process), Constitutional Structures (Parliamentary, Presidential, Separation of Powers), Judiciary (Independence of Judiciary, Judicial Review, Theories of Constitutional Interpretation) Fundamental Human and Political Rights and Civil Liberties (freedom of speech, association, assembly, movement and Right to Counsel, life, property, religion, privacy, self incrimination, double jeopardy).
- II. **Principles of Constitutional Law** with special reference to United Kingdom, United States of America, France, Russia, China, Pakistan, India and Turkey.
- III. **Constitutional History of Pakistan:** Principles of Constitutional Law of Pakistan, Salient feature of the Government of India Act, 1935, Indian Independence Act 1947, Objectives Resolution 1949, Constitutions of 1956, 1962 and 1973, Abrogation and Suspension of the Constitutions and the Martial Laws, Legal Framework Order, 1970, The PCO of 1981, The RCO of 1985, The LFO-2002, Amendments in the 1973 Constitution.
- IV. **Legal Development:**
  - Maulvi Tamizuddin Khan v. Federation of Pakistan PLD 1955 Sindh 96.
  - Federation of Pakistan vs. Maulvi Tamizuddin Khan, PLD 1955 FC 240
  - Reference by the Governor-General PLD 1955 FC 435
  - State v. Dosso PLD 1958 SC 533.
  - Usif Patel v. Crown PLD 1955 FC 387
  - Begum Nusrat Bhutto v. Chief of the Army Staff PLD 1977 SC 657
  - Hakim Khan v. Government of Pakistan PLD 1992 SC 595
  - Nawaz Sharif v. President of Pakistan PLD 1993 SC 473
  - Benazir Bhutto v. the President of Pakistan PLD 1992 SC 492
  - Khawaja Muhammad Sharif, PLD 1988 Lah. 725
  - Federation of Pakistan v. Haji Saifullah Khan PLD 1989 SC 166
  - Khawaja Ahmad Tariq Rahim PLD 1992 SC 646
  - Benazir Bhutto v. President of Pakistan, PLD 1998 SC 388
  - Asma Jilani v. Government of the Punjab PLD 1972 SC 139
  - State v. Zia ur Rehman PLD 1973 SC 49
  - Mahmood Khan Achakzai v. Fed. of Pakistan PLD 1997 SC 426
  - Zafar Ali Shah v. General Pervez Musharraf, PLD 2000 SC 869.
  - Sindh High Court Association v. Federation of Pakistan, PLD 2009 SC 879.

**SUGGESTED READINGS**

<b>S.No.</b>	<b>Title</b>	<b>Author</b>
1.	Comparative Constitutional Law	Hamid Khan & M.W. Rana
2.	Constitution of Pakistan 1973	Shabbar Raza Rizvi
3.	Introduction to the Study of the Law of the Constitution	Dicey
4.	Elgar Encyclopedia of Comparative Law	J.M. Smits
5.	Constitutional & Political History of Pakistan	Hamid Khan, Advocate
6.	Human Rights in Constitutional Law	SR. Bansali
7.	Constitutional Documents of Pakistan	Safdar Mahmood
8.	The Leading Cases in Constitutional Law	A.G.Chaudhry



**PAPER:** **CRIMINOLOGY** **(100 MARKS)**

**Section-I (25 Marks)**

**I. Introduction**

Basic concepts used in understanding crime, criminality and criminal behaviour.

**II. Understanding Criminology**

Definition, meaning and scope of criminology; Criminology and criminal law; Crime as social problem; Deviance, Sin Vice, Evil, Norms, Values; Security (Physical, Social, Economic)

**III. Crime and Criminals**

Occasional criminals, Habitual criminals, Professional criminals, White-collar crime, Organized crime, corporate crimes.

**IV. Crime and Criminality: Theoretical Perspectives**

Early explanation of criminal behavior

- Biological Theories; Psychological Theories; Sociological Theories.
  - ✧ Social Disorganization theory
  - ✧ Strain theory
  - ✧ Social Control theory
  - ✧ Learning theory
  - ✧ Labeling Theory
- Islamic perspective on deviance and crime.

**Section-II (25 Marks)**

**V. Juvenile Delinquency**

Meaning, definitions (Behavioral Vs Legal), Juvenile delinquent Vs status offender, Official statistics of juvenile delinquency

**VI. Juvenile Justice System**

- Role of police
- Juvenile court process:
  - ✧ pretrial, trial and sentencing
  - ✧ Role of prosecutor, defense counsel, juvenile judge, juvenile probation officer
- Juvenile correctional institutions; probation and non-punitive alternatives

**VII. The Criminal Justice System:**

- Police and its role
- Trial and Conviction of Offenders
  - ✧ Agencies: formal and informal
  - ✧ Criminal courts: procedures and problems
  - ✧ Role of prosecutors
- Prisons, Probation and Parole

**VIII. Punitive and Reformative Treatment of Criminals**

Corporal punishment, Imprisonment, Rehabilitation of criminals.

**Section-III (25 Marks)****IX. Criminal Investigation**

Principles of criminal investigation, Manual of preliminary investigation, Intelligence operations, Data base investigation, Electronic investigation, Forensic Investigation

**X. Techniques of Investigations**

Gathering information from persons, Interviewing and interrogation techniques, Criminal investigation analysis,

**XI. Legal and Ethical Guidelines for Investigators**

Stop and frisk operations, Arrest procedures, Search and seizure.

**XII. International Policing and Criminal Justice Monitoring Organizations**

UNAFEI, INTERPOL, EUROPOL, UNODC, UNICEF, IPA, etc.

**Section-IV (25 Marks)****XIII. Modern Concepts in Contemporary Criminology**

- Terrorism, Radicalism and War on Terror
- Media's representation of Crime and the Criminal Justice System
- Modern Law Enforcement and Crime Prevention
  - ✧ Intelligence-led Policing
  - ✧ Community Policing
  - ✧ Private Public Partnership
- Gender and Crime in Urban and Rural Pakistan
- Crime and Urbanization, Organized Crime and White-Collar Crime
- Human Rights Abuses and Protection, especially of Children; Women and Minorities; The role of civil society and NGOs
- Money-laundering
- Cyber Crime
- Role of NAB, FIA, ANF

**SUGGESTED READINGS**

<b>S.No.</b>	<b>Title</b>	<b>Author</b>
1.	New Perspectives in Criminology	Conklin, J.E
2.	Criminal Interrogation and Confessions.	Fred, E.I., John, E.R., Joseph, P.B. and Brian, C.J.
3.	Theoretical Criminology	George B. Vold, Thomas J. Bernard, Jeffrey B. Snipes
4.	Modern Criminology: Crime, Criminal Behavior and its Control.	Hagan, J.
5.	Juvenile Delinquency: An Integrated Approach	James, B.
6.	Security Studies: An Introduction	Paul, D.W.
7.	Crime, Justice and Society: An Introduction to Criminology	Ronald, J.B., Marvin, D.F. and Patricia, S.
8.	Juvenile Delinquency: Theory, Practice, and Law	Seigel, L.J.
9.	Crime Prevention: Theory and Practice	Stephen, S.

	<b><u>Suggested Websites</u></b>
10.	International Society of Criminology (ICS): <a href="http://www.isc-sic.org">http://www.isc-sic.org</a>
11.	American Society of Criminology (ASC): <a href="http://www.asc41.com/">http://www.asc41.com/</a>
12.	British Society of Criminology (BSC): <a href="http://www.britsoccrim.org/">http://www.britsoccrim.org/</a>
13.	European Society of Criminology (ESC): <a href="http://www.esc-eurocrim.org/">http://www.esc-eurocrim.org/</a>
14.	International Police Executive Symposium (IPES); <a href="http://www.ipes.info/">http://www.ipes.info/</a>
15.	Asian Criminological Society (ACS): <a href="http://www.ntpu.edu.tw/college/e4/acs/home.php">http://www.ntpu.edu.tw/college/e4/acs/home.php</a>
16.	Asian Association of Police Studies (AAPS): <a href="http://www.aaps.or.kr/">http://www.aaps.or.kr/</a>
17.	Campbell Library: <a href="http://www.campbellcollaboration.org/library.php">http://www.campbellcollaboration.org/library.php</a>
18.	UNAFEI (Japan): <a href="http://www.unafei.or.jp/english/">http://www.unafei.or.jp/english/</a>
19.	Pakistan Society of Criminology (PSC): <a href="http://www.pakistansocietyofcriminology.com">www.pakistansocietyofcriminology.com</a>
20.	South Asian Society of Criminology and Victimology (SASCV): <a href="http://www.sascv.org/">http://www.sascv.org/</a>

**PAPER: ECONOMICS (200 MARKS)****Paper-I (100 Marks)****I. Micro Economics**

Consumer behaviour, Determination of market demand and supply i.e. concept of elasticity of Demand & Supply, Static, Comparative Static Analysis, Distinction between partial and general equilibrium analysis (basic level), theory of the Firm, Producer's equilibrium, Pricing of the factors of production

**II. Macro Economics**

Basic Economic Concepts, National Income Accounting, Consumption Function, Multiplier, Accelerator, Component of Aggregate Demand, Labour Demand and Supply, Un-Employment, Determination of equilibrium level of income and output (at least with reference to two or three "schools of thought"), Inflation.

**III. Money and Banking**

Functions of Money, Quantity Theory of Money, The Fisher and Cambridge Formulations, Systems of note issue, Credit Creation, Functions of Central Banks, Instruments of Credit Control, Distinction between Goals, Operational & Intermediate Target of Central Banks Policy, Concept of Reserves, Liquidity Premium, Term Structure of Interest Rate, etc; Transmission Mechanisms of Monetary Policy, Theory of Liquidity Preference. TVM, Capital Structure, Capital Restructuring, IS-LM Analysis and The role of Central Bank, Money Demand and Supply.

**IV. Public Financing**

Government expenditure, Sources of Government Revenue, Privatization, Taxes and non-taxes, Incidence of different taxes, Public Debt, Objectives, methods of repayment, Deficit financing, General Equilibrium Analysis, Welfare Economics, Fiscal Policy.

**V. International Trade**

Theories of comparative advantage and Factor Endowments, Trade & Growth, Colonialism, Imperialism and International Trade, Trade Restrictions, Economic Integration, Trade Policy, Balance of Payments, Foreign Exchange, International Monetary system, Custom Unions.

## **VI. Economic Development**

Concepts of development, Human development, Historical growth process and Development, Theories of development, structural issues of development, Income distribution and poverty, sectoral (agricultural, Industry, trade and fiancé) issues and development, environment and development.

### **Paper-II (100 Marks) (Economics of Pakistan)**

**I. Definition and Measurement of Development:** Characteristics of under development, rethinking on the concept of development: Growth vs. Redistributive justice, Absolute and Relative Poverty, Basic Needs Approach, Sustainable Development, Environmental Degradation & other Issues.

**II. Planning Experience of Pakistan:** A critical evaluation of the strategy of economic planning, governance & Institutions.

**III. Agricultural Development in Pakistan:** Changes in Agricultural Policies over plan periods, Major Monetary and Fiscal measures to promote Agricultural development, Green Revolution Strategy and its implications for growth and redistribution, Land Reforms and changes in the Tenure System 1950—1980, Cooperative Farming, Rural Development.

**IV. Industrial Development in Pakistan:** Early industrialization strategy, Creation of Financial and Development Institutions, Major monetary and fiscal measures to promote industrial development, changing role of public sector over the plan periods, Evaluation of Nationalization Policy, Concentration of industrial income and wealth, Evaluation of Import Substitution Policy and Export led Growth Strategy in Pakistan.

**V. Role of Foreign Trade and Aid in Economic Development :** Trends in Pakistan's Balance of Payments, Terms of Trade, Changes in direction of trade, Trends in Pakistan's major exports and imports, Causes of significant changes in the trends, the role of migration and remittances in Pakistan's economy, costs and benefits of Foreign Aid, Role of Foreign Investment.

**VI. Privatization, Denationalization, Deregulation:** conceptual and operational aspects. International comparisons. Pakistan Experience of Privatization.

**VII. Interest Free Banking in Pakistan**

**VIII. Energy Policy of Pakistan****IX. Social Sector Development in Pakistan**

**X. Major Issues in Pakistan Economy:** Energy crisis, Corruption, Bad governance, External debt accumulation and dependency, Unemployment, Income inequality, Inflation, Fiscal and trade deficits, Balance of payment issues, Shortage of irrigation water.

**SUGGESTED READINGS**

S.No.	Title	Author
1.	A Text-book of Economics Theory	Stonier & Hague
2.	Economic Development	Todaro, M.P.
3.	Under Development and Agrarian Structure in Pakistan	Khan, Mahmood Hassan
4.	Economic of Islam	Ahmed, S.M.
5.	Economics	Paul A. Samuleson
6.	Factors in Economic Development	Cairncross, A.K
7.	Foreign Aid Theory and Practice in Southern Asia	Wolf, Jr. DC
8.	Government Finance—An Economic Analysis	Due John, F.
9.	Introduction to International Economics	Snider, D.A, Paul Krugman, Donimich Salvatore
10.	Microeconomic	Ferguson, C.E. & Gould, J.P., Nicholson, Mankiw
11.	Macroeconomics	Rudigar Dorubush and Stanley Fisher Blanchard
12.	Population Problems	Theompson & Lewis
13.	Studies in Economic Development with Special Reference to Pakistan	Ghouse, A.
14.	History of International Trade	Findlay, R and O' Rourke, K
15.	Colonialism and Modernization	Karl Marx Anchor books
16.	On Colonialism	Karl Marx and Frederick Engels,
17.	Economic Survey of Pakistan	Government Publication

**PAPER: ENGLISH LITERATURE (100 MARKS)**

The paper is divided into six components along with the marks allocation for each component.

**I. Essays: (10 Marks)**

- Bertrand Russell (The Conquest of Happiness)
- George Orwell (Politics and the English Language; The Prevention of Literature)
- Ralph Waldo Emerson (The Transcendentalist; Self-Reliance)

**II. Short Stories: (10 Marks)**

- Somerset Maugham (The Lotus-Eater)
- G.K.Chesterton (A Somewhat Improbable Story)
- O'Henry (The Gift of the Magi)

**III. Poetry: (20 marks)**

- William Wordsworth (Resolution and Independence; Lines Composed Few Miles Above, Tintern Abbey)
- John Keats (Ode to a Nightingale; Ode to Autumn)
- Lord Alfred Tennyson (Ulysses; The Lady of Shalott)
- Yeats (A Dialogue of Self and Soul; The Second Coming)
- Eliot (The Wasteland; Love Song of J. Alfred Prufrock)
- Philip Larkin (Maturity; Continuing to Live; The Trees)
- Wallace Stevens (A Postcard from the Volcano; Continual Conversation with a Silent Man; Dry Loaf) **OR** Walt Whitman (As I Ponder'd in Silence; Are You the New Person Drawn Toward Me?; This Moment Yearning and Thoughtful)

**IV. Drama: (20 marks)**

- Shakespeare (*Hamlet; King Lear; Twelfth Night*)
- William Congreve (*The Way of the World*)
- Shaw (*Pygmalion; Heartbreak House*)
- Harold Pinter (*The Caretaker*)
- Samuel Beckett (*Waiting for Godot*)
- Eugene O'Neill (*Long Day's Journey into Night*)

**V. Novels: (20 marks)**

- Thomas Hardy (*Far from the Madding Crowd*)
- D.H. Lawrence (*Sons and Lovers*)
- George Orwell (*Nineteen Eighty-four*)
- James Joyce (*A Portrait of the Artist as a Young Man*)
- Iris Murdoch (*Under the Net*)

- Nathaniel Hawthorne (*The Scarlet Letter*) or William Faulkner (*The Sound and the Fury*)

## VI. Literacy Theory & Criticism (20 Marks)

- Structuralism
- Marxism
- Deconstructionism
- Psychoanalytic criticism
- Feminist criticism
- Postcolonial Criticism

**Note:** The texts are mentioned in brackets in front of each author's name. However, for the component on "Literary Theory and Criticism" and for understanding poetry and drama, particularly 20<sup>th</sup> century poetry and Drama, following readings are suggested:

### SUGGESTED READINGS

S.No.	Title	Author
1.	The basics Literary Theory. (Second edition). Routledge.	Bertens, H. (2008).
2.	Literary Theory: An Introduction. (Anniversary Edition).	Eagleton, E. (2008).
3.	A New Handbook of Literary Terms.	Mikics, W. (2007).
4.	A Companion to Twentieth Century Poetry.	Roberts, N. (2003).
5.	A Reader's Guide to Contemporary Literary Theory. (Fifth edition).	Selden, R., Widdowson, P., & Brooker, P. (2005)
6.	Twentieth Century British Drama.	Smart, J. (2001).
7.	Modern Critical Views & Interpretations, ed: 80's and 90's editions.	Harold Bloom (these include all range of authors and their works given above)
8.	A Companion to 20 <sup>th</sup> Century Drama Oxford: Blackwell.	Krasner David. 2005.



**PAPER: ENVIRONMENTAL SCIENCE (100 MARKS)****I. History of Environmental Thought**

Environment and Sustainable Development, History of Environmental Movements, Industrial and Agriculture Revolution, United Nations Conference on Human Environment 1972, Our Common Future 1987, Rio Summit 1992, Agenda 21, World Summit on Sustainable Development 2002, Rio Summit-II, 2012, Millennium Development Goals.

**II. Sustainable Development Issues**

Population growth, Poverty, Biodiversity loss and its Conservation, Energy security (energy conservation and alternative energy resources), Urbanization and sustainable cities, Carrying capacity and ecological footprint. Food security and sustainable agriculture. Ecological restoration.

**III. Interdisciplinary nature of Environmental Science**

Orientation on convergence of various social and natural sciences to evolve a new discipline of environmental science: Environmental Biology, Environmental Chemistry, Environmental Physics, Environmental Microbiology, Environmental Toxicology, Environmental Economics, Environmental Geology, Environmental Geography, Environmental Biotechnology, Environmental Sociology.

**IV. Environmental Pollution**

Air Pollution, Water Pollution, Soil Pollution, Noise Pollution, Solid Waste, Water Logging & Salinity, Deforestation, Desertification, Eutrophication, Global and regional air pollution problems (Greenhouse effect, Global Warming/Climate Change, Ozone Depletion, Acid Rain).

**V. Climate Change**

Climate Pattern at local, regional and global scale. Different types of climate including tropical and mid latitude climate, polar climates. Climate change processes, Drivers and Indicators of Climate Change, Effects of Climate Change on natural and societal systems. Carbon foot print. Climate change adaptation and mitigation, Clean Development Mechanism (CDM), REDD+. Global environmental politics on climate change: role of India, China and USA (Copenhagen Accord 2009).

**VI. Environmental Governance**

Policy, legal and institutional frameworks for governance of environment in Pakistan: National Conservation Strategy of 1992, National Environmental Policy Act of Pakistan 2005, Environmental Protection Act of 1997, Pak-EPA (Review of IEE/EIA) Regulations 2000, Hospital Waste Management Rules 2005, Pollution Charge Rules, Sample Rules, Solid Waste Management Plan 2005, Hazardous Substances Rules 2005, National Drinking Water Policy 2009, Sanitation Policy, National Climate Change Policy 2012.

**VII. Global initiatives**

Brief on some of the Multilateral Environmental Agreements ratified by Pakistan, Convention on Biological Diversity (CBD), Cartagena Protocol on Bio-safety, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention), Convention on the Conservation of Migratory Species (CMS), United Nations Framework Convention on Climate Change (UNFCCC), Kyoto Protocol to UNFCCC, Montreal Protocol on Substances that deplete the Ozone Layer, United Nations Convention to Combat Desertification (UNCCD).

**VIII. Environmental Assessment and Management**

Environmental Impact Assessment, Strategic Environmental Assessment, Environmental Management Systems (ISO 14000), Occupational Health & Safety management systems (OHSAS 18000), Participatory Approaches to Environmental Management, Technological Approaches to Environmental Management, Approaches to Solid Waste Management, Disaster Risk Management, Pollution Control Technologies, Geographic Information System & Remote Sensing, Natural Resources Management.

**SUGGESTED READINGS**

<b>S.No.</b>	<b>Title</b>	<b>Author</b>
1.	Environmental Economics in Theory and Practice.	Hanley, N. Shorgen,J,White,B
2.	Industrial Safety Health and Environmental Management	Jain R.K. Rao S.S
3.	Environmental Science: Earth as a living Planet, 9 <sup>th</sup> ed.	Botkin, D. Keller, E. 2014
4.	Environmental Geology Facing the Challenges of Our Changing Earth	Erickson, J
5.	Environmental Geology.	Keller A.Edward
6.	Earth Science.	Tarback. J. Edward Lutgens K. Friederick
7.	Environmental Science: A Study of Interrelationship	Enger ED, Smith, B.F
8.	Basics of Forestry and Applied Sciences, Concepts and Theory	Masood A.A Qureshi
9.	Environmental Science: Working with Earth	Miller. T.G
10	Disaster Management: A Disaster Manager's Handbook	Carter N.W
11	Disasters and Development	Cuny, F.C.
12	Disaster Management: Warning Response and Community Relocation	Perry R.W. Mushkatel, A.H.
13	Energy: Crisis or Opportunity, An Introduction to Energy Studies	Diana Schumacher
14	Environmental Geology	Carla W. Montgomery
15	Environmental Health; Ecological Perspective	Kathryn Hilgenkamp
16	Official Website of Govt. of Pakistan	<a href="http://www.environment.gov.pk">www.environment.gov.pk</a>
17	Official Website of UN Environment Programme.	<a href="http://www.unep.org">www.unep.org</a>

**PAPER:** **EUROPEAN HISTORY** **(100 MARKS)**

**Part –I (Marks 50)**

**I. The French Revolution and Napoleonic Era (1789-1815)**

- The causes of French Revolution
- The consequences of Revolution
- Napoleon rise to power
- Creation of Empire
- The Continental system
- The fall of Napoleon

**II. The Concert of Europe (1815-1830)**

- The Congress of Vienna
- Metternich's Era
- The Concert of Europe and Congress System
- Balance of Power

**III. Forces of Continuity and Change in Europe (1815-1848)**

- Nationalism
- Liberalism
- Romanticism
- Socialism
- Industrial Revolution
- Colonialism
- Cosequences

**IV. The Eastern Question (1804-1856)**

- The nature of the Eastern question
- The Crimean War
- Russo Turkish War 1877
- Consequences

**V. Unification of Italy**

- The effects of the revolution of 1848
- The obstacles to unification
- Cavour and the unification of Italy
- The Process of Italian unification (1859-1871)

**VI. Unification of Germany**

- The rise of Bismarck
- Diplomatic events
- The Austro-Prussian War (1866)
- The Franco- Prussian War (1870-1871)
- The triumph of Bismarck and process of unification

**VII. The Origins of First World War (1890-1914)**

- Formation of Alliances and Counter Alliances
- The Balkans War (1912-1913)
- The outbreak of the World War 1

**Part –II (Marks 50)****VIII. The First World War and its aftermath**

- The War (1914-1918) and peace treaties
- The League of Nations

**IX. Dictatorships in Europe**

- Fascism in Italy under Mussolini
- Hitler, Nazism and Germany
- Russia , Marxism Revolution and its working under Stalin
- Great Depression and its effects on Europe
- Appeasement
- The Arm race
- The Sudetenland Crisis (1938)
- The distraction of Czechoslovakia (1939)

**X. The Second World War and its Effects on Europe**

- The Main Events of the War
- Impact of war

**XI. Post- War Europe**

- The post war settlements
- The United Nations
- Economic Recovery of Europe, Marshal Plan
- German Question
- NATO

- Decolonization

## **XII. Cold War Europe (1955-1991)**

- Effects of cold war
- Warsaw Pact (1955)
- The European Economic Community (EEC)
- Nuclear Non-Proliferation Agreement
- Charles De Gaulle and France
- Spread of communist regimes in Europe

## **XIII. Europe (1991-2012)**

- The Gorbachev and Disintegration of USSR
- The reunification of Germany
- The Balkan crisis of 1990s
- The European Union
- Role of Europe in War against terrorism
- Global Economic Crisis and Europe

### **SUGGESTED READINGS**

<b>S. No.</b>	<b>Title</b>	<b>Author</b>
1.	A History of Modern Europe (1789-1991)	H.L. Peacock,
2.	The Struggle for Mastery in Europe: 1848-1918	A.J.P Taylor,
3.	The Cold War: Ideological Conflict or Power Struggle	Normali A. Grabener
4.	The USSR: A Share History	Vladimir Polrtayen,
5.	Development in Russian Politics	Stephen White,
6.	Mastering Modern European History	Stuart Miller,
7.	A Text Book of European History	by Southgate, G.W.
8.	Aspects of European History 1789-1980.	Stephen J. Lee
9.	Europe Since Napoleon	Thompson, D.
10.	European Union: European politics.	Tim Bale.
11.	Modern Europe in the Making from the French Revolution to the Common Market	Fasal, G.
12.	The Norton History of Modern Europe	Gilbert, F.
13.	The Origins of the Second World War	Taylor, A.J.P.
14.	The Rise and Fall of Great Powers.	Paul Kennedy.

**PAPER: GENDER STUDIES (100 MARKS)**

- I. Introduction to Gender Studies**
  - Introduction to Gender Studies
  - Difference between Gender and Women Studies
  - Multi-disciplinary nature of Gender Studies
  - Autonomy vs. Integration Debate in Gender Studies
  - Status of Gender Studies in Pakistan
- II. Social Construction of Gender**
  - Historicizing Constructionism
  - Problematizing the category of “Sex”: Queer Theory
  - Is “Sex” socially determined, too?
  - Masculinities and Femininity
  - Nature versus Culture: A Debate in Gender Development
- III. Feminist Theories and Practice**
  - What is Feminism
  - Liberal Feminism
  - Radical Feminism
  - Marxist/Socialist Feminism
  - Psychoanalytical Feminism
  - Men’s Feminism
  - Postmodern Feminism
- IV. Feminist Movements**
  - Feminist Movements in the West. First Wave, Second Wave and Third Wave Feminism. United Nation Conferences on Women, Feminist Movements in Pakistan.
- V. Gender and Development**
  - Colonial and Capitalistic Perspectives of Gender
  - Gender Analysis of Development Theories; Modernization Theory, World System Theory, Dependency Theory, Structural Functionalism.
  - Gender Approaches to Development: Women in Development (WID), Women and Development (WAD), Gender and Development (GAD); Gender Critique of Structural Adjustment Policies (SAPs).
  - Globalization and Gender
- VI. Status of Women in Pakistan**
  - Status of Women’s health in Pakistan
  - Status of Women in Education
  - Women and Employment
  - Women and Law

**VII. Gender and Governance**

- Defining Governance
- Suffragist Movement
- Gender Issues in Women as Voters
- Gender Issues in Women as Candidates
- Gender Issues in Women as Representatives
- Impact of Political Quota in Pakistan

**VIII. Gender Based Violence**

- Defining Gender Based Violence
- Theories of Violence against Women
- Structural and Direct Forms of Violence
- Strategies to Eliminate Violence against Women

**IX. Case Studies of:**

- Mukhtaran Mai
- Mallala Yousaf Zai
- Shermin Ubaid Chinoy

**SUGGESTED READINGS**

S.No.	Title	Author
1.	Theories of Women Studies	Eds., Bowles. Gloria and Renate D. Klein
2.	Introduction: Theories of Women Studies and the Autonomy/ Integration Debate in Theories of Women Studies.	Bowles G and Renate, K.
3.	The State of the Discipline of Women Studies in Pakistan in Social Sciences in Pakistan	Saigol, Rubina
4.	The State of Women Studies in Pakistan in Journal of Asian Women Studies	Bari, Farzana
5.	Women's Law in Legal Education and Practice in Pakistan.	Shaheed, F. and Mehdi, R. (ed.) (1997)
6.	Locating the self: Perspectives on Women and Multiple Identities.	Khan, N.S. et al.(ed.) (1998)
7.	The Social Construction of Gender	Lorber, Judith
8.	Queer Theory	Lorber, Judith
9.	Gender,USA,	Harriet Bradley(2013)
10.	Women of Pakistan: Two Steps Forward, One Step Back.	Mumtaz,Khawar& Shaheed, Farida(1987)



S.No.	Title	Author
11.	Feminism and its Relevance in South Asia	Saeed K, Nighat & Bahsin, Kamla
12.	Feminist Thoughts	Tong, Rosemarie
13.	Reversed Realities	Kabeer, Naila
14.	Gender Planning and Development	Moser, Caroline
15.	Electoral Politics: Making Quotas Work For Women.	Hoodfar, Homa & Tajali, Mona (2011)
16.	The Gender face of Asian Politics	Ayaz, Aazar & Fleschenberg, Andrea (2009)
17.	Performance Assessment of Women Parliamentarians in Pakistan	Bari, Farzan (2002)
18.	Base line Report: Women's Participation in Political and Public Life	Zia, Shahla & Bari, Farzana. (1999)
19.	Freedom from Violence	Schuler, Margarte (1992)
20.	Human Rights Commission of Pakistan Report	

**PAPER:****GEOGRAPHY****(100 MARKS)****Part –I (Marks 50)**  
**Physical Geography**

- I. Factors controlling landform development; endogenic and exogenic forces; origin and evolution of the earth's crust; physical conditions of the earth's interior; geosynclines; continental drift; isostasy; sea-floor spreading; plate tectonics; mountain building; volcanicity; earthquakes; concepts of geomorphic cycles; landforms associated with fluvial, arid, glacial, coastal and Karst cycle; groundwater.
- II. Elements and Factors of climate, structure and composition of atmosphere, insolation, temperature, Pressure belts of the world; Heat budget of the earth; Atmospheric circulation: planetary, monsoon and local winds; Air masses and Fronts; Hydrological cycle; Types of condensation and precipitation; Factors of global distribution of precipitation.
- III. Origin of oceans and seas, Characteristic features of the ocean basins, temperature, salinity distribution cause and effects, Ocean floor deposits, their characteristics and classification, Ocean circulation, Waves, currents and tides, their nature, causes and effects.
- IV. Factors of climate and Environmental change. Transformation of nature by man; environmental degradation and conservation; Nature and Types of pollution. Problems caused by pollution, Global Warming, Global Environment Patterns, Environmental Hazards and Risk Management.

**Part –II (Marks 50)**  
**Human Geography**

- V. Origin and Diffusion of Culture, Geographic patterns of culture, Classification of Languages, World Distribution of Languages, Indo-European Languages, Origins of Religions, Diffusion of Religions, Global Distribution, Regional conflicts, Ethnicities and Nationalities, Ethnic Conflicts, Ethnic Diversity in the World, Factors of Ethnic Cleansing, Ethnic Cleansing in the World, Development Indicators, Economic Indicators, Social Indicators, Health Indicators, Development through Trade, Impacts of development Indicators.
- VI. Factors effecting Agriculture, Subsistence Agriculture and population growth, Commercial Agriculture and Market Forces, Sustainable Agriculture, Types and Distribution of Agriculture, Factors of Industrial locations, The Industrial Revolution, Industrial Theories, Distribution of Industries and Industrial Estates, Renewable Resources, Recycling Resources, Sustainable resources.
- VII. Factors of Population Growth, Components of Change, Population Structure, The Demographic Transition, World distribution of Population, Over and under Population threats and their consequences, Models of Internal Structure of Cities, World Urban Patterns, Settlement Theories, Patterns and Problems within urban areas.

VIII. Politics, Geography and Political Geography, State as a Politico-Territorial Phenomenon, State, Nation and the Nation-State, World Politics and International Relations, Geopolitics of uneven Development and Globalization of Capital, Geography of Tourism and Recreation, The demand for tourism and recreation, The supply for tourism and recreation, The impact of tourism and recreation: (Socio-economic impacts, Physical-environmental impacts), Global patterns in health and diseases, Models in medical geography, Recent issues and developments.

### SUGGESTED READINGS

S.No.	Title	Author
1.	Discovering Physical Geography 2nd ed. Hoboken: John Wiley & Sons, Inc.	Alan F. Arbogast (2011).
2.	Introducing Physical Geography. Hoboken: John Wiley & Sons	Alan Strahler, (2011).
3.	Atmosphere, Weather and Climate (7th ed.). London: Clays St. Davis.	Barry, R. (1998).
4.	Meknight's Physical Geography A Landscape application 10 <sup>th</sup> ed PHI Learning, New Delhi.	Darrel Hess (2012).
5.	Text Book of Population Geography, Random Publications, New Delhi.	Dr. Martin Ardagh (2013).
6.	Atmosphere, Climate and Change. New York: Scientific American Library	Graedel, T. (1995).
7.	An Introduction to Oceanography.	Johnson H. (1996).
8.	Economic Geography, Random Publications, New Delhi.	Philip Emeral (2013).
9.	Essentials of Physical Geography 8th ed Australia.	Robert E. Gabler & James F. Petersen (2007)
10.	Geosystems: An Introduction to Physical Geography 7 <sup>th</sup> ed. New Jersey: Pearson Prentice Hall	Robert W. Christopherson (2009),
11.	Tourism Geography: Random Publications, New Delhi.	Shweta Singh (2013).
12.	Elements of physical geography. New York. John Wiley.	Strahler, A. N. (1998).
13.	Natural Disaster Management: New technologies and opportunities, The Icfai Uni. Press, Agartala.	Subir Ghosh (2012).
14.	Economic Geography 3 <sup>rd</sup> ed. PHI Learning, New Delhi.	Truman A. Hartshorn (2010).
15.	Environmental Geography: Science Landuse	William M. Marsh (2005).

S.No.	Title	Author
	and Earth System 3rd ed.Hobken: John Wiley & Sons	
16.	Geography, Regions and Concepts. U.S.A: John Wiley and Sons, Inc.	Blif, H. J. (1971).
17.	Human Geography. Canada: John Wiley & Sons, Inc.	Blij, H. J. (2000).
18.	Population Geography Oxford: Pergamon Press.	Clarke, J. I. (1965).
19.	Human Geography Cultural Society and Space. (5 <sup>th</sup> ed.). New York: John Wiley & Sons.	De Blij. H. J. (2003).
20.	Political Geography: The Spatiality of Politics. (3 <sup>rd</sup> ed.). New Delhi: Tata McGraw-Hill Publishing Company Limited.	Dikshit, R. D. (2001).
21.	Agricultural Geography: Issues and Applications. New Delhi: Gian Publishing House.	Dube, R. S. (1987).
22.	Human Geography Landscape of Human Activities. (8 <sup>th</sup> ed.). New York: Mc.Graw Hill Higher Education.	Getis, Fellman. (2005).
23.	An Introduction to Agricultural Geography. London: Hutchinson.	Grigg, D. (1984).
24.	The Geography of Tourism and Recreation (1 <sup>st</sup> ed.). London: Routledge.	Hall, C. M; & Page, S. J. (1999).
25.	Economic Geography. New York: Prentice Hall, Inc. Englewood Cliffs.	Hartshorne, T. A. & Alexander, J. W. (1988).
26.	Geography & Health: A study in medical Geography. New Delhi: A.P.H. Publishing corporation.	Izhar, F. (2004).
27.	Geographies of Global Change. Blackwell Publishers Inc.	Johnston, R. J. (1996).
28.	Urban Geography, New York: McGraw Hill.	Kaplan, Wheeler (2009).
29.	Human Geography Place and Region in Global context. (2 <sup>nd</sup> ed.) .New Jersey: Prentice Hall.	Knox Paul L. (2001).
30.	Agricultural Geography. London: Longman.	Newbury, P. A. R. (1999).
31.	Contemporary Human Geography. New Delhi: PHI Learning Private Limited.	Rubenstein James M. (2010).
32.	Tourism Geography (1 <sup>st</sup> ed) London: Routledge.	Williams, S. (1998).

**PAPER:****GEOLOGY****(100 MARKS)****Part- I (50-marks)****I. Introduction to Physical Geology**

Introduction and scope of geology, its importance and relationship with other sciences; Earth as a member of the solar system: its origin, age, composition and internal structure; Introduction to rocks and minerals; Weathering and erosion; Isostasy; Geological Time Scale.

**II. Stratigraphy and Paleontology**

Principles of stratigraphy; Laws of superposition and faunal succession; Geological time scale with divisions; Classification and nomenclature of stratigraphic units: lithostratigraphic units, biostratigraphic units and chronostratigraphic units.

Introduction to fossils and their significance; Modes of fossilization; Study of morphology, range and broad classification of major invertebrate phyla; Introduction to micro fossils; Introduction to Paleobotany; Introduction and classification of major vertebrates; Introduction to micropaleontology

**III. Mineralogy**

Classification of minerals; Study of internal structure; Polymorphism and isomorphism; Paragenesis; Physical and optical properties of the common silicate and non-silicate mineral groups; Introduction to crystallography: elements of symmetry, study; normal classes of crystallographic systems.

**IV. Structural Geology and Tectonics**

Stress-strain concepts; factors controlling the mechanical behavior of materials; Folds; Faults; Joints; Foliation: terminology, classification and relationship with bedding; Lineation; Unconformity.

Plate tectonics theory; Geological evidences for continental drift; Sea-floor spreading; Oceanic ridges; Continental rifts; Intra-oceanic islands; Hot spot and Mantle plumes; Wilson Cycle; Tectonic framework of Pakistan.

**V. Petrology and Petrography**

Introduction, classification and description of sedimentary rocks; origin; transportation and deposition of sediments; Texture of sedimentary rocks; Sedimentary structures, their classification, morphology and significance; Composition, origin, differentiation and evolution of magma; Classification of igneous rocks; Mode of occurrences and types of extrusive rocks; Texture and structure of igneous rocks; Introduction to metamorphism; Types of metamorphism; Grades, zones and facies of metamorphism; Metamorphic diffusion and differentiation; Metamorphism in relation to Plate Tectonics; Differentiation between metamorphism and metasomatism.

Introduction to Polarizing Microscope; Optical properties of opaque and non-opaque minerals in plane polarized light and under crossed nicol including metallic under reflected light; Description of optical properties of common rock forming minerals.

**Part- II (50-marks)****I. Introduction to Geophysics**

Definition and relation of geophysics with other sciences; Classification and brief description of various branches of geophysics such as seismology, geomagnetism, geoelectricity, tectonophysics, gravimetry, geo-thermy and geodesy; Introduction to various geophysical techniques for exploration of mineral deposits, oil and gas, subsurface water and engineering works.

**II. Sequence Stratigraphy**

Introduction: history, concept and significance of sequence stratigraphy; Data sources: seismic reflections, outcrops, well logs, core and seismic facies; Sea level changes: their causes and effects, accommodation, eustatic and relative sea curve; Hierarchy of sequence stratigraphic elements; Types of sequences and systems tracts.

**III. Petroleum Geology**

The nature and classification of petroleum hydrocarbons, their origin, migration and accumulation; Source sediments, reservoir rocks and trapping mechanism for oil and gas; Prospecting and exploration of oil and gas; Reservoir: characteristics, drive mechanism, energy and pressure maintenance; Secondary and enhanced recovery; Introduction to Sedimentary Basins of Pakistan.

**IV. Engineering and Environmental Geology**

Rock and soil mechanics and its application in civil engineering; Rock mass characteristics; Geotechnical studies of rocks and soils; Geological factors and strength of rocks; Study of geological factors in relation to the construction of buildings' foundations, roads, highways, tunnels, dams and bridges; Application of geophysical methods for site investigation; Construction materials; Mass movement: their causes and prevention.

Introduction to environmental geology; Management of natural resources; Global climatic changes; Environmental controls for erosion, desertification and coastal degradation; Geological hazards such as floods, landslides, earthquakes, tsunamis, volcanoes, glaciers and shoreline processes; Remedial measures; Clean sources of energy; Industrial pollution, solid and liquid waste disposal, Introduction to environmental impact assessment and initial environmental examination.

**V. Mineral and Energy Resources**

Introduction of geological exploration/prospecting. Brief description of hydrocarbons, coal, gemstones, copper, lead, zinc, iron, gold, chromite, manganese, salt, gypsum, bauxite, sulphur, barite, fluorite, clays, phosphorite, building and dimension stones; Industrial rocks and minerals; Radioactive minerals and rocks; Special reference to economic mineral deposits in Pakistan.

Origin, occurrence, and depositional environments of coal; Coal constitution and its kinds; Coal rank, grade and calorific value; Coal deposits of Pakistan with reference to Thar Coal; Geothermal energy resources of Pakistan.

## VI. Economic and Applied Geology

Metallic and Non-metallic mineral resources of Pakistan; Mineral-based industries. Overview of Recodec Copper; Radioactive minerals and their occurrences in Pakistan; Gemstones of Pakistan.

Geology of Reservoirs, dams, highways and tunnels; Major natural hazards and their impacts on the environment with special reference to Pakistan.

### SUGGESTED READINGS

S.No.	Title	Author
1.	Physical Geology	Charles Plummer, David McGeary, Diane Carlson,
2.	Physical Geology	Charles (Carlos) Plummer, Diane Carlson
3.	Principles of Physical Geology	Holmes, A
4.	Principles of Paleontology	Raup, D.M. & Stanley, S.M
5.	Vertebrate Paleontology	Romer, A.S
6.	Invertebrate Paleontology and Evolution	Clakson, E.N.K
7.	Stratigraphy of Pakistan	Shah, S.M.I.
8.	Principles of Sedimentology and Stratigraphy	Boggs, S
9.	Stratigraphy and Historical Geology of Pakistan	Kazmi, A.H and Abbasi, I.A
10.	Igneous and Metamorphic Petrology	Best, M.G.,
11.	Introduction to Optical Mineralogy	Nesse, W.D
12.	An Atlas of Minerals in Thin Section	Schulze, D.J.,
13.	Minerals and Rocks	Klein, C.,
14.	Mineral Characterisation and Processing	Mohapatra, B.K., Misra, V
15.	Principles of Mineralogy	William. H.B.,
16.	Mineralogy	Perkins, D
17.	Plate Tectonics – Geodynamics	Moore, E.M. & Twiss, R.J
18.	Structural Geology of Rocks and Regions	George H. Davis, Stephen J. Reynolds, Charles F. Kluth
19.	Structural Geology	Twiss, R.J. & Moore, E.M.,
20.	Carbonate Sedimentology	Tucker, M.E. & Wright, V.P
21.	Applied Sedimentology	Selly, R.C.,
22.	Petrology of Sedimentary Rocks	Boggs Jr. S
23.	Sedimentary Rocks	Pettijohn, F.J
24.	Introduction to Applied Geophysics	Burger R.H., Sheehan, A. & Jones, C

S.No.	Title	Author
25.	Geophysical Methods in Geology	Sharma, P.V
26.	The Solid Earth: An Introduction to Global Geophysics	Fowler, CMR
27.	Igneous and Metamorphic Petrology	Best, M.G
28.	Petrology: Igneous, Sedimentary, & Metamorphic	Blatt, H., Tracy, R.& Owens, D
29.	Igneous and Metamorphic Petrology	Best, M.G.,
30.	Metamorphic Petrology	Turner, F.J.,
31.	Sequence Stratigraphy	Emery, D. & Myers, K.J.,
32.	Elements of Petroleum Geology	Richard C. Selley,
33.	Petroleum Geology	North, F.K.,
34.	Geology of Pakistan	Bender, F.K. & Raza, H.A.,
35.	Engineering Geology: Principles and Practice	David George Price, Michael de Freitas
36.	Engineering Geology	F G Bell
37.	Fundamentals of Engineering Geology	Bell, F.A.G.,
38.	Environmental Geology	Montgomery, C.W.,
39.	Geology of Himalaya, Karakoram, Hindukush in Pakistan	Tahirkheli, R.A.K.,
40.	Geology of Pakistan	Bender, F.K. & Raza,
41.	Stratigraphy and Historical Geology of Pakistan	Kazmi, A.H and Abbasi, I.A
42.	Economic Geology: Principles and Practice	Walter L. Pohl
43.	Directory of Mineral Deposits of Pakistan	Zaki, A.,
44.	An Introduction to Ore Geology	Evans, A.M.,
45.	Metallogeny and Mineral Deposits of Pakistan	Kazmi, A.H. & Abbas, S.G.,
46.	Introduction to Mineral Exploration	Moon, C.J., Whateley, M.K.G. and Evans, A.M.
47.	Energy Resources	Brown and Skipsy
48.	Pakistan Energy Yearbook 2012	Ministry of Petroleum and Natural Resources Hydrocarbon Development Institute of Pakistan. Islamabad



**PAPER: GOVERNANCE & PUBLIC POLICIES (100 MARKS)**

**I. Basic Concepts of Governance:**

- Origin of the term Governance
- Definition of Governance
- Definition of Good Governance
- Characteristics of Good Governance: Participation, Rule of law, Transparency, Responsiveness, Equity, Effectiveness and Efficiency, Accountability, Strategic Vision
- Collapse/Failure of Governance: its indicators diagnostic tools & Effects

**II. Governance Theories:**

- Communitarianism
- Decentered Theory
- Libertarian Socialism
- Institutionalism
- Marxism
- Neoliberalism
- Rational Choice Theory
- Regulation Theory

**III. Governance Indicators laid by World Bank/IMF/UNESCO/UNDP/ADB, their Explanation & Application Level in Pakistan:**

- Voice and Accountability
- Political Stability and Absence of Violence
- Government Effectiveness
- Regulatory Authorities & their Quality
- Rule of Law
- Control of Corruption

**IV. Public Policy and Planning Institutions and their role in Planning**

- Institutional Framework for Policy Coordination and Planning (ECNEC, Economic Coordination Committees of the Cabinet, The Federal Cabinet, The Secretaries Committee, The Prime Minister's Secretariat, The Planning Commission, The Finance Division, The Cabinet Division, and all Federal Ministries for their respective subjects)
- Role of Planning Commission in Policy and Planning
- Strategic Planning in Federal
- Provincial Government and Local Government
- Role of International Donors in Policy Formulation (IMF Document "Memorandum on Economic and Financial Policies 2013/14–2015/16," that underpins almost all public policies.)
- Public Policy and Implementation in Key Sectors (i.e., Health, Education).

**V. Accountability:**

- General Introduction to Accountability and its concepts (Standards, Symbolism, regional and country-wide comparisons, a Review of Contemporary Studies)
- Types of Accountability- Political Accountability, Legal/ Judicial Accountability, Administrative Accountability, Professional Accountability, Private vs. Public Accountability
- National Strategies against Corruption and remedial measures.

**VI. Bureaucracy:**

- Introduction to the Concept of Bureaucracy (History, Neutrality, Steel Frame of the State, Negative Connotations Associated with the term)
- Theories of Bureaucracy (Max Weber, Marx, John Stewart Mill, Woodrow Wilson)
- Role of Bureaucracy in Pakistan (British legacy, civil-military relations, neutrality, dilution of neutrality, political allegiance, power, corrupting the incumbent, institutional degradation, constitutional guarantees, indexing of salaries with the CPI or lack thereof.)
- Public Administration and Code of Ethics (Effectiveness of the Estacode and the Code of Ethics, Comparison with other countries)

**VII. Public Policy Formulation and Implementation**

- The Policy Making Process: How Policies are Made (Six including diagnosis and six stages with cautions to be exercise at each stage)
- Policy Implementation & Role of Bureaucracy (Training, Pervasive Inertia and how to break it, Lack of Decision Making, Culture of postponement and delays, Lack of resources, Political interference, Ability to say "No.")
- Policy Analysis, The Quest for Solutions (Lack of research in policy analysis, Lack of coordination among departments, secrecy, openness)
- Policy Evaluation: Assessing The Impact of Public Policy, Program Evaluation- Success and failure of Govt.

**VIII. Multi-level Governance in Pakistan:**

- Legislature: National Assembly, Senate, Provisional Assemblies
- Judiciary: Supreme Court, High Courts, Lower Courts
- Functioning of the offices:
  - President of Pakistan,
  - Prime Minister of Pakistan
  - Office of Governor,
  - Office of Chief Minister, Federal Cabinet, Cabinet Committees, Federal Secretariat, Provincial Secretariat
- Local Government system: District Government, Zila Government, Tehsil Government, Union Administration, Its Efficacy, Performance & Causes of Success or Failure

**IX. Federalism, Devolution and Decentralization**

- Constituents participation in Federal Structure
- Principle of Subsidiarity in Public Service Delivery
- Decentralization Model of Kerala

**X. Role of Citizens in Governance****XI. Good Governance in Islam**

- Quranic Guidance on Good Governance
- Concept of Governance and its application in light of Quran; Sunnah and Fiqh.

**SUGGESTED READINGS**

<b>S. No.</b>	<b>Titles</b>	<b>Author</b>
1.	Governance	Anne Mette Kjær
2.	Encyclopedia of Governance, Volume 2	Mark Bevir
3.	Implementing Public Policy: Governance in Theory and in Practice.	Hill M. and Hupe P.
4.	Accountability: Managing for Maximum Results	Sam R Llyod
5.	Guidance for Good Governance: Explorations in Qur'anic, Scientific & Cross-Cultural Approaches	Abdullah Ahsan& Stephen Bonsal Young
6.	How Governments Work	Muzaffar A. Ghaffaar
7.	Government and Administration in Pakistan	Dr Jamil-ur Rehman
8.	Public Administration With Special Reference To Pakistan	Dr Sultan Khan
9.	Constitution of Islamic Republic of Pakistan,	National Assembly of Pakistan
10.	Pakistan: Beyond the Crisis State	Maleeha Lodhi
11.	Power Dynamics, Institutional Instability and Economics Growth: The Case of Pakistan	Akmal Hussain
12.	Federalism and Rights	Ellis Katz and G Allan Tarr
13.	Local Government Reforms in Pakistan: Context, Content and Causes	Ali Chmeema, Asim Ijaz Khawaja and Adnan Qadir
14.	Economics Democracy Through Pro Poor Growth	PonnaWignaraja, Akmal Hussain Susil Sirivardana
15.	Governance: South Asian Perspective	Hasnat Abdul Hye
16.	Governance, Economic Policy and Reform in Pakistan	Abdus Samad

S. No.	Titles	Author
17.	"Pakistan—Problems of Governance," 1993.	Hussain, M., Hussain. A.
18.	"Pakistan's Predicament: The Diagnostic and the Debates within," <i>Journal of Pakistan Vision</i> , 13/1 (2012).	Racine, Jean-Luc.
19.	<i>The Culture of Power and Governance of Pakistan—1947-2008</i> , Oxford, 2010.	Niaz, I.
20.	"Legitimacy and the Administrative State: Ontology, History, and Democracy," <i>Public Administration Quarterly</i> , UC Berkeley, 2013.	Bevir, M.,
21.	Handbook of Public Policy Analysis	Frank Fischer, Gerald J. Miller, and Mara S. Sidney,
22.	Public Policy: Politics, Analysis, and Alternatives, 4th Ed., CQ Press, 2012	Kraft, Michael E., Scott R. Furlong
23.	Public Policy in An Uncertain World,: Analysis and Decisions, Harvard, 2013	Manski, Charles F.

**PAPER: HISTORY OF PAKISTAN & INDIA (100 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.
- II. British Rule in India: 1857-1947:** British Imperialism, origin and growth of the East India Company, Causes and effects of downfall of the Mughal Empire in India, War of Independence in 1857: Causes and effects.
- III. Constitutional and Political Reforms of the British Government (1858-1947)** and growth of the Political Parties –Indian Congress
- IV. 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. Pakistan Movement:** Allama Iqal's Allahabad Address 1930, and Round Table Conference. The Congress Rule in the provinces-1937-1939, Lahore Resolution 1940, various Missions and Plans for the partition of the South Asia. Founders of Pakistan: Quaid-i-Azam, Mohsin-ul-Mulk, Syed Amir Ali, Ali Brothes. Sir Agha Khan, Chaudhry Rahmat Ali, etc.
- VI. History of Pakistan (1947- Todate):** Pakistan's early Challenges—Quaid-i-Azam as Governor-General, various attempts at constitution making.
- VII. Military in Politics:** Ayub Khan, Yahya, Zia-ul-Haq and Pervaiz Musharaf regimes, Civil Military Relationship in Pakistan,
- VIII. Separation of East Pakistan:** Causes and Effects,
- IX. Working of Democracy in Pakistan:** Liaquat Ali Khan to Firoz Khan Noon (1947-1958), Zulfikar Ali Bhutto's Period,(1971-1977), Benazir, Nawaz Sharif ,Revival of Democracy: 1988-1999, Restoration of Democracy (2008 to date), Role of Major Political Parties and Pressure Groups in the history of Pakistan.
- X. Foreign Policy of Pakistan (1947-1999)**

**SUGGESTED READINGS**

<b>S.No.</b>	<b>TITLE</b>	<b>AUTHOR</b>
1.	POLITICAL PARTIES IN PAKISTAN: 1947-1958	AFZAL, M. RAFIQUE, 1986
2.	GOVERNMENT & POLITICS IN PAKISTAN	AHMAD, MUSHTAQ, 1970
3.	PARTY POLITICS IN PAKISTAN: 1947-58	AZIZ, K.K. 1976
4.	INDIA'S STRUGGLE FOR INDEPENDENCE	CHANDRE BIPIN, 1989
5.	CONSTITUTIONAL DEVELOPMENT IN PAKISTAN	CHAUDHARY, G.W. 1959
6.	WAVELL AND THE DAYS OF THE RAJ: BRITAIN'S PENULTIMATE VICEROY IN INDIA,	CHAWLA, MUHAMMAD IQBAL, 2011
7.	NATIONALISM AND COMMUNAL POLITICS IN INDIA.	HASSAN, MUSHIRUL 1991
8.	THE CHARISMATIC LEADER: JINNAH AND THE CREATION OF PAKISTAN	HAYAT, SIKANDAR, 2007
9.	THE CULTURE OF POWER AND GOVERNANCE OF PAKISTAN 1947-2008	ILHAN NIAZ, 2011
10.	MUSLIM CIVILIZATION OF INDO-PAKISTAN.	IKRAM, SHAIKH MUHAMMAD, 1966
11.	PAKISTAN'S FAILURE IN NATIONAL INTEGRATION	JAHAN, ROUNAQ, 1972
12.	CONSTITUTIONAL AND POLITICAL HISTORY OF PAKISTAN	KHAN, HAMID, 2005
13.	THE MUSLIM POLITICS IN PUNJAB	QALB-I-ABID ,S, 1992
14.	THE MUSLIM COMMUNITY OF THE INDO-PAK	QURESHI ISHTIAQ HUSAIN, 1962
15.	THE STRUGGLE FOR PAKISTAN	QURESHI, ISHTIAQ HUSAIN, 1965
16.	PAKISTAN: THE FORMATIVE PHASE	SAYEED, KHALID BIN, 1968
17.	THE MILITARY AND POLITICS IN PAKISTAN 1947-86	RIZVI, HASSAN ASKARI
18.	PAKISTAN: A NEW HISTORY	TALBOT, LAN, 1999
19.	POLITICS AND THE STATE IN PAKISTAN	WASEEM, MOHAMMAD, 1989
20.	JINNAH OF PAKISTAN	WOLPERT, STANLEY, 1984

**PAPER: HISTORY OF USA (100 MARKS)**

- I. Introduction:-
  - From ancient times to 1492
  - Advent of the Europeans to British supremacy (1492-1606)
- II. USA as a British Colony (1606-1783).
- III. USA as an Independent Country (1783 - 1819)
- IV. Expansion of USA: From 13 to 50 States (1820 - 1949)
- V. Constitution of the USA: Salient Features
- VI. Civil War between the North and the East (1850 - 1869)
- VII. Industrialization and its emergence as one of the world powers (1870 -1916)
- VIII. USA's role in the Two World Wars (1914 – 1918 & 1939 - 1945)
- IX. Post 1945 world scenario and emergence of USA and USSR as the Two World Powers.
- X. American Role in patronizing UNO and International Organizations 1945 - 2012
- XI. American Role in Cold War and its emergence as the Sole Super Power (1945 - 1990).
- XII. International Concerns of USA: An Overview.
- XIII. The War on Terror: The Role of Pakistan and USA (2001 - 2012)
- XIV. Global perceptions of the USA.
- XV. Progressive Era: Reforms of Theodore Roosevelt and Woodrow Wilson,
- XVI. The Great Depression and the New Deal
- XVII. Civil Rights Movement
- XVIII. United States' role in International Conflicts
- XIX. US Presidential Election
- XX. The US Congress: Role and Functions
- XXI. Separation of Powers: Check and Balances

**SUGGESTED READINGS**

<b>S.No.</b>	<b>Title</b>	<b>Author</b>
1.	The Ideological Origins of the American Revolution,	Bailyn. Bernard, 1992
2.	A Pocket History of the United States	Commager, H. and Nevins, Allan, 1967
3.	Painless American History,	Curt Lader, 2009
4.	The Politically Incorrect Guide to American History	E.Woods, Thomas Jr., 2004
5.	The Civil War: A Narrative	Foote, Shelby, 1986
6.	The American Political Tradition and the Men Who Made it.	Hofstadter. Richard , 1948
7.	US-South Asian Relations 1784 – 1940: A History Perspective,	Iftikhar H. Malik, ed., 2006
8.	The Tragedy of Great Power Politics	Mearsheimer, John, 2001
9.	Enlightenment Revolution and the Birth of Modern Nation	Nelson, Craig, Thomas Paine, 2006
10.	The USA: 1917 – 1980	Smith, Nigel, 2006
11.	American Colonies: The Selling of North America	Taylor, Alan, 2002
12.	White Over Black: American Attitudes Toward the Negro 1550 – 1812	Winthrop D. Jordan,
13.	The Complete Book of U.S. Presidents.	William. A. De Gregorio, 2005
14.	A people's History of the United States: 1492 to Present.	Zinn, Howard, 1980



**PAPER: INTERNATIONAL LAW (100 MARKS)****I. Nature, Origin and Basis of International Law.**

- The Emergence of International Law, Early European Authors, The Nation-State System, The Enforcement of International Law, The Effectiveness of International Law, The Weakness of International Law, The Juridical Basis of International Law, The Future of International Law and Material Sources of International Law.

**II. Relation between International Law and State Law.**

- Article 38 of the Statute of International Court of Justice, Primary Sources of International Law, Subsidiary Sources of International Law, International Soft Law

**III. State in General and Recognition**

- Personality and Statehood in International Law, The Subjects of International Law, Recognition of State and Government in International Law, Recognition of State and Government in National Law.

**IV. The Law and Practice as to Treaties**

- The Vienna Convention on the Law of Treaties

**V. The Settlement of International Disputes.**

- Negotiation, Mediation and Good Offices, Inquiry, Settlement by the United Nations, Conciliation, Arbitration, The International Court of Justice.

**VI. International Humanitarian Law.**

- International and Non-International Armed Conflicts, Non-International Armed Conflict, 'Combatant' and 'Protected Persons', Protection of Wounded, Sick and Ship-Wrecked Persons, POWs, Civilians, Limitations on the Conduct of War, Limits on the Choice of Methods and Means of Warfare.

**VII. The Use of Force**

- The Law before the UN Charter, The Law after the Charter, The Collective Use of Force, The Right of Self-Defence.

**VIII. International Institutions****IX. State Territorial Sovereignty.****X. State Responsibility.****XI. State Jurisdiction.****XII. Succession to Rights and Obligations.****XIII. The State and the Individual.****XIV. The State and the Economic Interest.****XV. Diplomatic Envoys, Counsels and other Representatives.****XVI. War, Armed Conflicts and other Hostilities.****XVII. Neutrality.**

**SUGGESTED READINGS**

<b>S.No.</b>	<b>Title</b>	<b>Author</b>
1.	International Law	Malcolm N. Shaw
2.	Principles of Public International Law	Lan Brownlie
3.	International Law	Dr. S.K. Kapoor
4.	Introduction to International Law	J.G. Starke, QC
5.	International Humanitarian Law	ICRC Pakistan
6.	Extradition Act, 1972	Nil
7.	The Diplomatic and Consular Privileges Act, 1972	Nil
8.	Territorial Waters and Maritime Zone Act, 1976	Nil
9.	U.N. Convention on Law of the Sea, 1984	Nil
10.	Cases and Materials on International Law	D.J. Harris

**PAPER: INTERNATIONAL RELATIONS (200 MARKS)**

**Paper—1 (Marks-100)**

**I. Introduction**

- The Definition and Scope of International Relations.
- The Nation-State System
- Evolution of International Society

**II. Theories and Approaches**

- The Classical Approaches-Realism and Idealism
- The Scientific Revolution-Behavioral Approach, System Approach,
- Neo-realism, Neo-liberalism.
- Post-modernism, Critical Theory, Feminism, Constructivism

**III. International Political Security.**

- Conceptualization of security in the Twenty-First century
- Power. Elements of National Power
- Balance of Power
- Foreign Policy: Determinants, Decision Making and Analysis
- Sovereignty
- National Interest

**IV. Strategic Approach to International Relation.**

- War: Causation of War, Total War, Limited War, Asymmetric Warfare, Civil War, Guerilla Warfare
- Strategic Culture: Determinants of Pakistani Strategic Culture.
- Deterrence: Theory and practice with special reference to India and Pakistan

**V. International Political Economy.**

- Theories in IPE: Mercantilism, Economic Liberalism, and Neo- Marxism
- Theories of Imperialism, Dependence and Interdependence discourse

**VI. International political community.**

- Nationalism
- Internationalism
- Globalization

**VII. Approaches to Peace**

- Diplomacy
- International Law
- Arms Control /Disarmament and Nuclear Non proliferation Regime

**VIII. International Political Institution**

- United Nations
- International Monetary Fund (IMF)
- World Bank
- International Court of Justice

**Paper- II (Marks-100)****I. International Relation between two Wars**

- Russian Revolution, Fascism, League of Nations, Second World War

**II. Cold War**

- Decolonization in Asia and Africa.
- Rise of United States and Soviet Union,
- Era of Tight Bipolarity, Détente and Loose Bipolarity, Revival of Cold War

**III. Post Cold War**

- End of History, Clash of Civilizations, Terrorism, Globalization, Unipolarity (New World Order) and Revival of Multi-Polarity

**IV. International and Regional Organizations**

- League of Nations, United Nations, Regional Organizations, EU, ASEAN, NAFTA, SAARC, SCO, OIC, ECO, WTO.
- Reforms in the United Nations, World Bank and the IMF

**V. Foreign Policy of Selected Countries**

- USA, Russia, China, UK, India, Pakistan and EU

**VI. South Asia**

- Peace-making and Peace-Building in South Asia: Analytical overview of peace processes between/among the states of South Asia especially between India and Pakistan.
- India and Pakistan: Overview of agreements and accords, Indus Water Treaty; Composite Dialogue; Sir Creek & Siachen border, Visa and People to people contact; Trade; and Role of civil society
- Afghanistan: Cold war theatre; Soviet Invasion and Mujahedeen; Geneva Accord; Post Cold War situation---Rise of Taliban, AL-Qeada & 9/11; Operation Enduring Freedom; The Bonn Process- Withdrawal

**VII. Weapons of Mass Destruction**

- Proliferation of Nuclear Weapons
- Nuclear Weapon States- Programs and Postures: Indian-Pakistan Nuclear Doctrines
- Nuclear Non –Proliferation Regime: International Atomic Energy Agency, Nuclear Non- Proliferation Treaty; Nuclear Supplier Group; Partial Test Ban Treaty; Comprehensive Test Ban Treaty; Fissile Material Cut-off Treaty
- Challenges of Non-Proliferation, Cooperation for Nuclear Energy
- The Missile Defence Systems and their impact on global strategic environment
- Militarization and Weaponization of Space.

**VIII. Contemporary Issues**

- Euro-Atlantic Vs. Asia Pacific: Great Power Policies
- Kashmir Issue
- Palestine Issue

**SUGGESTED READINGS**

S.No.	Title	Author
1.	World Politics: Trend and Transformation, Ninth Edition	Charles W. Kegley JR. and Eugene R Wittkopf
2.	Understanding International Relations, Second Edition	Chris Brown
3.	Politics Among Nations	Hans j. Morgenthau
4.	International Politics: A Framework for Analysis	Holsti, K.J.
5.	Contemporary Security and Strategy	Craig A. Snyder (ed.),
6.	The Globalization of World Politics: An Introduction to International Relations	John Baylis and Stev Smith,eds
7.	Games Nations Play, Seventh Edition	John Spanier
8.	Essentials readings in World Politics	Karen Mingst
9.	World in Collision: Terror and the Future of Global Order	Ken Booth and Tim Dunne, ed
10.	Theory of International Politics	Kenneth N. Waltz
11.	Theories of International Relations	Scott Burchill and Andrew Linklater
12.	The Cause of Wars	Michael Howard
13.	Politics of Nuclear Weapons in south Asia	Bhumitra Chakma, ed

S.No.	Title	Author
14.	The Twenty Year's Crisis ; 1919-1939:An Introduction to the Study of International Relation	E.H. Carr
15.	Bomb Scare: The History and Future of Nuclear Weapons	Joseph Cirincione
16.	Arms Control: The New Guide to Negotiations and Agreements	Jozef Goldblat
17.	Explaining Foreign Policy	Llyod Jenson
18.	The International Politics of Space	Michael Sheehan
19.	Foreign Policy Making Process: A Case Study of Pakistan	Moonis Ahmar, ed
20.	Planning the Unthinkable How New Powers Will Use Nuclear Biological And Chemical Weapons	Peter R. Lavoy, Scott D. Sagan, and James J. Wirtz
21.	Pakistan's Foreign Policy : An Historical Analysis	S.M. Burke
22.	International Relations: Politics and Economy in the 21st Century	William Nester
23.	Foreign Policy and Political process	William Wallace
24.	Nuclear Risk Reduction Measures and Restraint Regime in South Asia	Zafar Nawaz Jaspal
25.	The India- Pakistan Military Standoff; Crisis and Escalation in South Asia (United States	Zachary S. Davis, ed
26.	Nuclear Pakistan: Strategic Dimensions	Zulfiqar Khan, ed

**PAPER: ISLAMIC HISTORY & CULTURE (100 MARKS)****Part –I (Marks 50)****I. Pre-Islamic Near East: An Overview**

- Political, Social, Cultural, Religious and Economic Conditions in the Near East including Arabia before the dawn of Islam

**II. The Dawn of Islam: The Prophetic Age (570-632)**

- Biography of the Prophet Muhammad (PBUH): A Chronology of the Major Events in his Life
- Prophet Muhammad (PBUH) as a Motivator (Daa'i), Major points of his mission
- Prophet Muhammad (PBUH) as a Military Leader/Strategist
- Prophet Muhammad (PBUH) as a Political Leader/Head of the State

**III. The Pious Caliphate (632-660)**

- Caliph Abu Bakr (632-34): Apostasy Wars and Consolidation of Islam
- Caliph Umar b.Khattab (634-44): Establishment of Administrative System and Expansion of Muslim Empire
- Caliph Uthman b.Affan (644-56): Problems and Issues in the Muslim Community
- Caliph Ali b.Talib (656-660): Rise of Factionalism
- Abdication of Imam Hasan and Establishment of Umayyad Dynasty (660)

**IV. Political System of Islam under the Prophet (PBUH) and the Pious Caliphate**

- Nature of Islamic State
- Form of the Government
- Functions of the Islamic State
- Sovereignty of God
- Caliphate or Vicegerency of Man
- Appointment of Caliph
- Shura or the Consultative Body and its Role

**V. Institutional Development of the Muslim Civilization: The Early Phase (622-660)**

- Development of Law and Judiciary in Early Islam
- Administration and State Conduct
- Defense in Early Islam
- Educational System
- Propagation of Islam
- Financial Administration
- Heritage and Culture

**VI. The Umayyads in Power (660-749)**

- Political History of the Umayyad Dynasty
- Statecraft and Administration under the Umayyads
- Society and the Development of Arabic Literature.
- Cultural Achievements

**Part –II (Marks 50)****I. The Abbasids of Baghdad (749-1258)**

- The Abbasid Revolution and the Establishment of the Abbasid Dynasty
- Administrative Structure under the Abbasids
- Development of Scientific Knowledge under the Abbasids
- Muslim Philosophy under the Abbasids
- Cultural Achievements

**II. Spain under the Muslim Rule**

- Spain under the rule of the Arabs and Moors (711-1492)
- Political Fragmentation and the Fall of Granada (1492)
- Muslim Contribution in the Realm of Culture, Arts and Architecture

**III. The Crusades against Islam**

- Major Encounters and Actors (1092-1228)
- Impact of the Crusades on Muslim-Christian Relations

**IV. The Ottoman Empire**

- Rise and Fall of the Ottoman Turks (1299-1923)
- State, Society and Economy under the Ottomans
- Treatment with the Religious Minorities
- Contribution towards Culture, Arts and Architecture

**V. Sufism as an Institution of the Muslim Society**

- Origin and Development of Sufism
- Contribution of the Sufis to the Muslim Civilization
- Relationship of the Sufis with the State and Political Authorities.
- A Critical View of Sufism

**VI. Islam and Modernity in Contemporary World**

- The Emergence of Islamic Modernism
- Intellectual, Political, Economic, Social and Educational Aspects of Islamic Modernism
- Dissemination of Muslim Learning in the West



**SUGGESTED READINGS**

<b>S.No.</b>	<b>Titles</b>	<b>Author</b>
1.	Discovering Islam—Making Sense of Muslim History and Society	Ahmad, Akbar
2.	Islam: Ideology and Leading Issues	Ali, Anwar.
3.	The Spirit of Islam	Ali, S. Ameer
4.	Aspects of Islamic Civilization: As Depicted in the Original Texts	Arberry, A. J.
5.	The Preaching of Islam—A History of the Propagation of the Muslim Faith	Arnold, T.W.
6.	The History of Philosophy in Islam	De Boer, T. J.
7.	The History of Islamic Peoples	Brockelmann, Carl (ed)
8.	Spanish Islam	Dozy, R.
9.	Studies on the Civilization of Islam	Gibb, Hamilton A.R.
10.	The Religion of Islam, Vol. I & II	Gaqwash, Ahmad A.
11.	Classical Islam: A History 600—1258	Von Grunebaum, G.E
12.	The Cambridge History of Islam	Holts, P. M., Lewis, Bernard, Ann KS Lambton
13.	Islam Resurgent: The Islamic World Today	Irving, T.B.
14.	Islam: From the Prophet Mohammad to the Capture of Constantinople.	Lewis, Bernard
15.	Islam in History.	Munir, Muhammad
16.	Islam and The Modern World	Nadvi, Abu Hasan Ali.
17.	The Making of the Past: the Spread of Islam	Rogers, Michael
18.	A History of Medieval Islam	Saunders, J.J.
19.	Introduction to Islamic Civilization	Savory, R.M. (ed)
20.	The Legacy of Islam	Schacht, Joseph & Bosworth, C.E (eds)
21.	Islamic History—A New Interpretation AD 750—1055	Shaban, M.A.
22.	The Abbasid Revolution	Shaban, M.A.
23.	A History of Muslim Philosophy	Sharif, M.M.
24.	Muslim Thought :Its Origin and Achievements	Nadvi Muhammad Hanif
25.	Studies in Islamic History	Siddiqi, Amir Hasan.
26.	The Revolution which Toppled the Umayyads': Neither Arab nor Abbasid	Agha, Saleh Said
27.	Sirat un Nabi Vol. I & II	Nomani, Shibli

S.No.	Titles	Author
28.	Rasol-e-Akram ki Siasi Zindagi	Hamidullah, Dr. Muhammad
29.	Khilafat-o-Malokiat	Syed Abul Aala Maudoodi
30.	Ahd-e-Nabawi main Riyasat ka Nash o Irtaqa	Ahmad Nisar
31.	Siddiq-e-Akbar	Akbarabadi, Saeed Ahmad
32.	Al-Farooq	Nomani, Shibli
33.	History of Islam	Najeebabadi, Akbar Shah
34.	Painting in Islam	Arnold, Thomas.
35.	Early Islamic Pottery	Lane, Arthur
36.	Muslim Calligraphy	Ziauddin, M.
37.	Islamic Art & Architecture	Kuhnel, E.
38.	Daira Ma'arif e Islamia (relevant articles)	University of Punjab
39.	The Cultural Atlas of Islam	Isma'il Raji al-Faruqi & Lois Lamya' al-Faruqi

**PAPER: JOURNALISM & MASS COMMUNICATION (100 MARKS)****I. Introduction to Mass Communication**

- Concept – Definitions, Need/Importance/Purposes, Types of Communication, Process of Communication, Basic Models.
- Functions of a model, Evaluation of a model
- Basic models in Mass Communication: -
  - Lasswell's Model (1948)
  - Shannon-Weaver model (1948)
  - Osgood's model (1954)
  - Schramm's model (1954)
  - Newcomb's symmetry theory (1953)
  - Westley-McLean's model (1976)
  - Gerbner model (1956)

**II. Mass Communication Theories**

- Normative theories of the press: Schramm's four theories and criticism on these theories
- Media as agents of power
- The Spiral of silence
- Media Usage and gratifications
- Media hegemony
- Diffusion of innovations
- Powerful effects model: hypodermic needle, magic bullet theory.
- Moderate effects model: two-step and multi-step flow of communication.
- Powerful media revisited: Marshal McLuhan's media determinism

**III. Global / International Communication**

- The Historical Context of International Communication
- Globalization, technology, and the mass media
- Communication and Cultural imperialism
- Communication Flow in Global Media: Imbalance in the flow of information between North and South
- McBride commission and its recommendations.
- International Communication in the Internet Age: the new social media and its effects on developing world

**IV. Media and Society**

- Mass media and social change
- Media as a social system: The balance between interrelation and interdependence
- Media freedom and its role for democracy,
- The functional approach to mass media: four social functions of the media
- Media as an awareness agent
- Mass media and social representation

**V. Mass Media in Pakistan:**

- Media system in Pakistan: historical, chronological, and analytical review
- The system of journalism and the media system
- Employer-employee relations in Pakistani media
- Government-press relations
- Press in Pakistan: The newspaper industry, from mission to the market
- Electronic media: from total dependence to enormous power
- The new 24/7 television: uses and abuses
- The new radio: potential for change and the present performance.
- The question of freedom and responsibility

**VI. Development Support Communication**

- Theories of development support communication with specific focus on the developing world
- The dominant paradigm of development: historical, analytical perspective
- The Alternative paradigm of development
- Small is beautiful: community development as a snowball effect.
- Globalization vs Localization
- Glocalization
- Social Marketing: how to infuse new ideas into a developing population

**VII. Public Relations:**

- Concept of Public Relations
- Historical development of public relations: from press agency to PR
- Public relation in Pakistan
- Ministry of information
- Press Information Department (PID)
- Public relations and publicity
- PR as a tool for governance
- Private PR agencies and their structure

- Basic methods of PR: press release, press note, press conference
- PR Ethics

#### **VIII. Media Laws and Ethics:**

- History of Media Laws in Pakistan
- Development of media regulations from British colonial era to independent Pakistan
- Libel, Defamation and relevant portions of PPC
- PPO, RPPPO
- PEMRA: establishment, development, and operational mechanisms
- Press Council of Pakistan (PCP)
- Citizens Media Commission: need, present status, and reasons for inactivity
- Press Code of Ethics
- Inability of the media to develop a code of ethics as an institution
- The media's quest for freedom and its inability to self regulate.

#### **SUGGESTED READINGS**

<b>S No.</b>	<b>Title</b>	<b>Author</b>
1.	Broadcast Regulations: the German Example	Metzger, Herbert. FES 1993.
2.	Communication Models for The Study of Mass Communication, 2 <sup>nd</sup> Ed	McQuail, Dennis & Windhal, Swen, Longman, 1982.
3.	Convergence Culture: Where old and new Media	Blackwell publishing Ltd, USA.
4.	Communication Theories: Origins, Methods and Uses in the Mass Media 5 <sup>th</sup> Ed	Werner J. Severin, James W. Tankard Jr. Longman, 1997.
5.	Diffusion of Innovations 5 <sup>th</sup> Ed	Rogers, Everett M. Free Press 2003
6.	Ethics in Journalism: A Reader on Their Perception in the Third World	Kunczik, Michael (Ed.). FES 1999.
7.	Handbook of International and Intercultural Communication 2 <sup>nd</sup> Ed	Gudykunst & Mody, Sage, 2001.
8.	McQuail's Mass Communication Theory, 4 <sup>th</sup> Ed	Denis McQuail. Sage, 2000.
9.	Media And Society into the 21 <sup>st</sup> Century: A Historical Introduction	Blackwell publishing Ltd, USA.
10.	"Media / Impact"	Wads Worth/ Thompson Learning, Belmont, CA
11.	"Media Now: Communication Media in the Information Age"	Wads Worth/Thompson Learning, Belmont, CA

S No.	Title	Author
12.	News Media and Journalism in Pakistan	Khan, Altaf. LAP Lambert Academic Publishing. June 2011.
13.	News Media and Journalism in Pakistan and Germany (Ed.)	Khan, Altaf. Peshawar, 2003.
14.	Participatory Development	Hasan, Arif, Oxford, 2010.
15.	Political Communication in Britain: The Leader Debates, the Campaign and the Media in the 2010 General Election, (Ed)	Palgrave McMillan, UK
16.	Political Communication in Asia,	Roultag, NY.
17.	"Precision Journalism: A Reporter's Introduction to Social and Science Methods", 4 <sup>th</sup> Ed	Rowman and Littlefield, Lanham, MD.
18.	Report and Recommendations of the Media Commission, appointed by the Supreme Court of Pakistan, 2013	FES, Islamabad, 2013.
19.	Reporting the Frontier: Media Capacity Building for Peace in Pakistan's Tribal Areas	Khan, Altaf VDM Verlag Dr. Müllere.K. June 2011.
20.	"Writing, Directing, and Producing Documentary Films and Vidoes", 3rd edition	Carbondale: Southern Illinois Press, 2002.
21.	"Directing the Documentary", 4th edition	Focal Press, 2004.
22.	"Documentary Storytelling: Making Stronger and More Dramatic Nonfiction Films", 2 <sup>nd</sup> edition	Focal Press, 2007.
23.	Principles of Editing	McGraw-Hill 1996
24.	Journalism—Principles and Practices	Vistaar Publications 2006
25.	The Hand Book of New Media	London: Sage
26.	Applying Communication Theory for Professional Life: An Introduction (2 <sup>nd</sup> Edition)	London: Sage
27.	Controversies in Contemporary Advertising	Newbury Park: Sage Publications
28.	"Public Relations-Writing & Media Techniques"	Harper Collins College Publishers, NY
29.	Telecommunications Policy in Pakistan"	Telematics and Informatics
30.	"Guaranteeing Copyright- Media Manager's Guide to Pakistani Broadcast Law"	Media Manager Companion Series Internews Pakistan
31.	"Model Freedom of Information Act", 2001	Consumer rights Protection Commission of Pakistan

**PAPER:****LAW****(100 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-Shahadat Order, 1984
- vi. Criminal Procedure Code, 1898

**SUGGESTED READINGS**

<b>S.No.</b>	<b>Title</b>	<b>Author</b>
1.	Pakistan Penal Code, 1860	M. Mahmood
2.	Criminal Procedure Code, 1898	Shaukat Mahmood
3.	Law of Evidence	Justice (R) Khalil ur Rahman Khan as adapted form Principles and Digest of the Law of Evidence by M. Monir
4.	Qanun-e-Shahadat 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: MERCANTILE LAW (100 MARKS)****I. Law of Contract, 1872**

- Definitions
- Essentials of a valid contract (Proposal, Acceptance, Consideration, Free consent, Capacity of Parties, Not hereby declared to be Void)
- Kinds of Contracts (Valid, Void, Voidable, Not Voidable)
- Variety of Contracts (Contingent, Quasi, Bailment, Pledge, Indemnity, Agency)
- Performance of Contract, contracts that need not to be performed.
- Breach of contract, consequences of breach, damages for breach of contract.

**II. Sales of Goods Act, 1930**

- Definitions
- Differences: Sale & agreement to sell, conditions and warranties, express & implied conditions.
- Doctrines: Caveat emptor, Nemo dat
- Right and duties of seller & buyer, rights of unpaid seller.

**III. Partnership Act, 1932**

- Definitions
- Essentials of partnership
- Kinds of partnership (partnership at will, particular partnership, limited partnership)
- Rights and duties of Partners
- Relation of partners to third persons (implied authority of partner, doctrine of holding out)
- Incoming and outgoing partners (minor)
- Dissolution of firms (compulsory, by agreement, by court, by notice on happening of contingencies)

**IV. Negotiable Instrument Act, 1881**

- Definitions
- Types of negotiable instruments (Cheque, bill of exchange, promissory note)
- Parties to instruments, holder & holder in due course
- Rules (as to negotiation, presentment, payment & interest, discharge, noting and protest, compensation, acceptance, payment for honour)
- Special rules of evidence
- Special provisions relating to cheques & bills of exchange (dishonor, duties of banker)
- Provisions as to foreign instruments



**V. Competition Act, 2010**

- Definitions
- Prohibition and abuse of (dominant position, certain agreements, discipline, marketing practices)
- Approval of mergers
- Competition commission of Pakistan (established, composition, term)
- Functions and powers of commission
- Provisions as to penalty and appeals.

**VI. Electronic Transaction Ordinance, 2002**

- Definitions
- Recognition and presumption of electronic transactions (writing, signature, stamp duty, attestation etc.)
- Electronic documents (attribution, acknowledgement, time and place of dispatch)
- Certification of service providers
- Application to acts done outside Pakistan
- Offences & Nature (false information, false certificates, damage to information system etc)

**VII. The Arbitration Law in Pakistan**

- Definitions
- Appointment, number and removal of arbitrator
- Award by arbitrator
- Powers of court upon award (remittance, modification and setting aside of award)
- Types of arbitration (with or without intervention of court)
- Stay of legal proceedings in presence of arbitration agreement

**VIII. Consumer's Protection Act, 2006**

- Definitions
- Consumer Commission (establishment, powers and functions, complaints before commission and disposal)
- Provisions as to compulsory recall of goods
- Duties and liabilities of provider of goods (return and refund of goods)
- Offences and penalties
- Contract between consumer and provider

**IX. Companies Ordinance, 1984**

- Definitions
- Types of Companies
- Fundamental papers of company (Memorandum of association, articles of association, prospectus)
- Transfer of shares and debentures
- Management and administration (promoters, share holders, directors, chief executive, auditors)
- Meeting's and proceedings (statutory, general, annual general meeting)
- Winding up (voluntary, by court)

**X. Electronic Fund Transfer Act, 2007**

- Definitions
- Payment system and their operation (designation of payment system & revocation, real time gross settlement system, governance & operation arrangement)
- Payment instruments (designation, issuing and prohibition of instruments)
- Clearing and other obligations
- Supervisory Control of state bank
- Documentation of transfers
- Notification of error and liabilities of parties
- Law relating to action before court.

**SUGGESTED READINGS**

<b>S. No.</b>	<b>Title</b>	<b>Author</b>
1.	Law of Contract	Agarwala, M. Mehmood
2.	Sales of Goods Act	Pollock & Mulla
3.	Bare Acts:	Government of Pakistan
i)	Contract Act, 1872	
ii)	Negotiable Instrument Act, 1881	
iii)	Sale of Goods Act, 1930	
iv)	Companies Ordinance, 1984	
v)	Arbitration Act, 1940	
vi)	Competition Act, 2010	
vii)	Electronic Transactions Ordinance, 2002	
viii)	Consumers' Protection Act, 2006	
ix)	Electronic Fund Transfer Act, 2007	

S. No.	Title	Author
4.	<b>Case Law Reading</b>	
i)	Carlil vs. Carbolic Smoke Ball Co. (1893) 1 QB 256	
ii)	Pharmaceutical Society of Great Britain vs. Boots Cash Chemicals Ltd. (1952) 2 QB 795	
iii)	Curie vs. Misa (1875) LR 10 Ex 153	
iv)	Byrne & Co. vs. Van Tienhaven & Co. (1880) 5 CPD 344	
v)	Mohri Bibi vs. Dharmodas Ghose (1903) 30 IA 114	
vi)	Derry vs. Peek (1889) 14 App. Cas 337	
vii)	Mannu Singh vs. Umadat Panday (1890) 12 ALL 523	
viii)	Coggs vs. Bernard (1703) 2Ld Raym 909	
ix)	Lumley vs. Wanger (1852) EW HC (Ch)J 96	
x)	Manni Devi vs. Ramayan Singh AIR 1985 Pat. 35	
xi)	Lachhman Joharimal vs. Bapu Khandu (1869) 6 Bombay High Court Reports 241	
xii)	Mischeff vs. Springett (1942) 2 KB 331	
xiii)	Watson vs. Coupland (1945) 1 All ER 217	
xiv)	Ashbury Railway Carriage & Iron Co. Ltd. Vs. Riche (1875) LR 7HL 653	
xv)	Lee vs. Lee's Air Farming (1960) 3 All ER420	
xvi)	Salomon vs. A. Salomon & Co. Ltd. (1897) AC 22	
xvii)	Royal British Bank vs. Turquand (1856) 6 E&B 327	
xviii)	Ram Raja Ram vs. Dhirba Charan Jen AIR 1982 Ori 264	
xix)	Badridas Kothari vs. Megraj Kothari AIR 1967 Cal 25	
xx)	Hitachi Ltd. & others vs. Rupali Polyester & others (1998 SCMR 1618)	
xxi)	Marflower Theatre Trust Ltd. Vs. HMRC (2007) STC 880	
xxii)	Pickering vs. Bux (1812) 15 East 38	
xxiii)	Liaqat Islam vs. State (2011 YLR 2280)	
xiv)	Alamgir Khalid Chughtai vs. State (PLD 2009 Lahore 259)	
xv)	United States vs. Forty Barrels and Twenty Kegs of Coca Cola, 241 U.S. 265 (1916)	
xvi)	Hedley Byrne & Co. Ltd. Vs. Hella & Partners Ltd. (1964) AC 465	

**PAPER: MUSLIM LAW & JURISPRUDENCE (100 MARKS)****I. The Sources of Islamic Law**

- The Quran
- The Sunnah
- Ijma
- Qiyas
- Ijtehad

**II. Principles of Islamic Jurisprudence****III. Islamic Criminal Law**

- Hadd
- Taz'ir
- Qisas and Diyat

**IV. Islamic Family Law**

- Marriage
- Dower
- Divorce
- Separation by Repudiation (Talaq)
- Separation by Mutual Agreement (Khula)
- Judicial Separation (Faskh)
- Post-Divorce Maintenance
- Child Custody
- Succession

**V. Islamic Law of Contract****VI. Islamic Banking and Insurance****VII. Islamic International Law****VIII. Islamic Law and Human Rights****IX. Dissolution of Muslim Marriages Act, 1939****X. Muslim Family Laws Ordinance 1961**

**SUGGESTED READINGS**

<b>S.No.</b>	<b>Title</b>	<b>Author</b>
1.	An Introduction to the Study of Islamic Law	Dr. Hussain Hamid Hassan
2.	Principles of Islamic Jurisprudence	Mohammad Hashim Kamali
3.	Theories of Islamic Law	Prof. Imran Ahsan Nyazee
4.	Islamic Law of Contracts and Business Transactions	Tahir Mansuri
5.	Family Law in Islam	Dr. Mohammad Tahir Mansuri
6.	Outlines of Islamic Jurisprudence	Prof. Imran Ahsan Nyazee
7.	General Principles of Criminal Law	Prof. Imran Ahsan Nyazee
8.	State and Legislation in Islam	Dr. Mahmood Ahmad Gazi
9.	Mahomedan Jurisprudence	Abdur Rahim
10.	Islamic Law of Inheritance	Hamid Khan, Advocate
11.	Munir” Principles of Muhammadan Law	Munir Ahmad Siddiqui

**PAPER:****PASHTO****(100 MARKS)**

- I. Origin of Pashto language, its dialects and alphabets
- II. Pashto Grammar
- III. General question on history of Pashto literature and literary movements in Pashto
- IV. Essay on prominent aspects of Pashto Culture, Historical and Literary personalities.
- V. Translation of unseen passages from Pashto in to English or Urdu.
- VI. Translation of unseen passages of English or Urdu into Pashto.
- VII. General Questions on evolution and criticism of Pashto Prose and Poetry.
- VIII. Pashto Classic Poetry
  - (i) Khoshal Khan Khattak (ii) Rehman Baba (iii) Abdul Hamid Baba
  - (iv) Ali Khan (v) kazim Khan Sheda
- IX. Pashto Modern Poetry
  - (i) Amir Hamza Khan Shinwari (ii) Ghani Khan (iii) Qalandar Momand (iv) Abdur Rahim Majzooob (v) Younas Khalil
- X. Pashto Folk Literature,
  - (i). Tappa' (ii) Charbaita' (iii) Neemakai' (iv) Badala etc and Pashto proverbs,

**SUGGESTED READINGS**

S. No.	Title	Author
1.	Life and Works of the Illustrious Khushal Khan Khattak	Dr. Khadeeja Feroz Ud Deen
2.	The Pathans	Sir Olaf Careo.
3.	Selected poems of KhushalKhan Khattak	Major Raverty.
4.	The Rowshanites and Pashto Literature	Dr. Yar Muhammad Maghmoom
5.	د پ توادبیاتو تاریخ (وړمبے او دویم جلد)	عبدالحی حبیبی
6.	پشتون تاریخ کے آئینے میں	سید بہادر شاہ ظفر کاکاخیل
7.	صرف و نحو	خیال بخاری
8.	روہی ادب	پروفیسر محمد نواز طائر
9.	پ تو ادبی تحریکونہ	ڈاکٹر راج ولی شاہ خٹک
10.	روہی سندری	سلمیٰ شاہین
11.	پ تانہ لیکوال (اول او دویم جلد)	ہمیش خلیل
12.	سرحد کے لوک گیت	فارغ بخاری
13.	خوشحال خان خک (اردو)	دوست محمد خان کامل مومند

S. No.	Title	Author
14.	پشتو زبان و ادب کی مختصر تاریخ	ڈاکٹر عبداللہ جان عابد
15.	د پ تو پی عمرانی مطالعہ	ہاک رنور محمد دانش بی نے
16.	پ تو او مستشرقین	ڈاکٹر محمد جاوید خلیل
17.	ادب لہ دے	سحر یوسفزے
18.	پ تو پہ	داور خان داؤد
19.	د پ تونثر تاریخی او تنقیدی جائزہ	بی بی مریم

**PAPER:****PASHTO****(100 MARKS)**

ولې نمبرې: ۱۰۰

پ تو

پېر

- i. پ تو ژبه: اوريجن، لهجي او الفبا  
 ii. پ تو ر امر  
 iii. د پ تو ادب تاريخ او پ تو ادبي تحريکونو باندې عمومي سوال  
 iv. د پ تون کلچر کاره اړخونو، تاريخي او ادبي شخصيتونو باندې مضمون  
 v. په اردو يا ان رېزۍ ک ي د پ تو د ناليدلي پېرا رافونو ترجمه  
 vi. په اردو يا پ تو ک ي د ان رېزۍ د ناليدلي پېرا رافونو ترجمه  
 vii. د پ تو نظم او نثر په ارتقا او تنقيد باندې عمومي سوال  
 viii. پ تو کلاسيکي شاعري:  
 i. خوشحال خان خک  
 ii. رحمان بابا  
 iii. عبدالحميد بابا  
 iv. علي خان  
 v. کاظم خان شېدا  
 ix. پ تو جديد شاعري:  
 i. امير حمزه خان شنواري  
 ii. غني خان  
 iii. قلندر مومند  
 iv. عبدالرحيم مجذوب  
 v. يونس خليل  
 x. پ تو اولسي ادب  
 i. په  
 ii. چارېته  
 iii. نيمک  
 iv. بدله و غېره او پ تو متلونه  
 مجوزه کتابونه

شمبره	د کتاب نوم	مصنف
1.	Life and Works of the Illustrious Khushal Khan Khattak	Dr. Khadeeja Feroz Ud Deen
2.	The Pathans	Sir Olaf Careo.
3.	Selected poems of Khushal Khan Khattak	Major Raverty.
4.	The Rowshanites and Pashto Literature	Dr. Yar Muhammad Maghmoom
5.	د پ تو ادبياتو تاريخ (ورمې او دوېم جلد)	عبدالحنى حبيبي
6.	پشتون تاريخ كې آئينے ميں	سيد بهادر شاه ظفر كاكاخېل
7.	صرف و نحو	خيال بخاري
8.	روهي ادب	پروفېسر محمد نواز طائر
9.	پ تو ادبي تحريكونه	ك ر راج ولي شاه خک
10.	روهي سندري	سلمى شابين
11.	پ تانه ليكوال (اول او دوېم جلد)	همېش خليل



مصنف	د کتاب نوم	شمېره
فارغ بخاري	سرحد کے لوک گيت	12.
دوست محمد خان کامل مومند	خوشحال خان خټک (اردو)	13.
اک ر عبدالله جان عابد	پشتو زبان و ادب کی مختصر تاریخ	14.
ډاک ر نور محمد دانش بې نه	د پ تو پي عمراني مطالعه	15.
ډاک ر محمد جاوېد خليل	پ تو او مستشرقين	16.
سحر يوسفزے	ادب ل دے	17.
داور خان داؤد	تو په	18.
بي بي مریم	د پ تونثر تاریخي او تنقیدي جائزه	19.

**PAPER:****PERSIAN****(100 MARKS)****PART—I (Marks-50)**

- I. Elementary Information about the Pre Islamic Persian Languages: Avesta, Old Persian and Pahlavi.
- II. Origin and development of the new Persian Language (In this part Revivalist movement, Purist movement and the adaptation of foreign loan words need to be studied).
- III. The advent and history of Classical Persian Literature from SAMANID's period to the Mushrootah Movement with special emphasis on the outstanding Persian prose writers and poets. (The Persian prose writers and poets from 4<sup>th</sup> century H to 10<sup>th</sup> century H).
- IV. The contemporary Persian Literature with special emphasis on the New Poetry (شعر نو) and Fiction writing and their outstanding representatives.
- V. A Short introduction to Persian Language and Literature, besides Iran, in Afghanistan, Tajikistan and Indo-Pakistan Subcontinent.
- VI. Significant features of the grammar of the language as under:

اسم ، فعل ، ضمیر ، صفت ، قید ، حرف ، شبہ جملہ / صوت

In classical background, the four styles known as Khurasani, Iraqi, Hindi and Revivalist may be studied.

- VII. A Short essay writing in Persian on literary and cultural themes.
- VIII. Translation of simple English passage into Persian.

**PART—II (Marks-50)**

This part will require first hand reading of the texts prescribed and questions will be designed to test the candidate's critical abilities.

**TEXT SELECTION****1. PROSE:**

شمار	نام مصنف	نام کتاب
1	امام محمد غزالی	- کیمیای سعادت : در رعیت داشتن و ولایت راندن
2	علی بن عثمان بجویری	کشف المحجوب : باب التصوف
3	نظام الملک طوسی	سیاست نامه فصل ششم: اندر قاضیان و خطیبان و محتسب .....
4	سعدی شیرازی	گلستان : باب اول ، حکایت اول، ششم ، هفتم، چهاردهم ، نوزدهم ، بیست و دوم ، چهل و یکم باب دوم – حکایت هفتم ، بیستم

شمار	نام مصنف	نام کتاب
		باب سوم - حکایت شانزدهم ، نوزدهم ، بیست و دوم باب چهارم - حکایت دوم باب ششم - حکایت چهارم باب هفتم - حکایت سوم ، حکایت ششم
5	حسن سجزی	فوائد الفواد : جلد دوم، مجلس هشتم
6	جلال آل احمد	سه تار (افسانه)

## 2-POETRY

شمار	نام شاعر	نام کتاب
1	فردوسی	شاهنامه : • در ستایش خرد • در ستایش دادگستری
2	مولانا رومی	مثنوی معنوی : • نی نامه • داستان پیر چنگی با عمر رضی الله (دفتر اول) • خاریدن روستایی به تاریکی شیر را (دفتر دوم) • انکار کردن موسی بر مناجات چوپان (دفتر دوم) • اختلاف کردن در چگونگی و شکل پیل (دفتر سوم) دیوان شمس : • بروید ای حریفان بکشید یار ما را • بنمای رخ که باغ و گلستانم آرزو ست • به روز مرگ چو تا بوت من روان باشد • بیا تا قدر یکدیگر بدانیم • خنک آن دم که نشینیم در ایوان من و تو
3	امیر خسرو	دیوان غزلیات (غزلیات با مطلع های زیر) • دلم زو شب حدیث ناز می گفت • خبرم شده ست کا مشبب سر یار خواهی آمد • بیا نظاره کن ، ای دل که یار می آید • نمی دانم چه منزل بود شب جانی که من بودم • ای چهره زیبای تو رشک بتان آوری
4	حافظ	دیوان حافظ (غزلیات با مطلع های زیر) • بیا که قصر امل سخت سست بنیاد است • رسید مژده که ایام غم نخواهد ماند • فاش می گویم و از گفته خود دلشادم • سالها دل طلب جام جم از ما می کرد • ای بی خبر بکوش که صاحب خبر شوی
5	غالب	دیوان غالب دهلوی (غزلیات با مطلع های زیر): • به وادی که در آن خضر را عصا خفته است • آنان که وصل یار همی آرزو کنند • جلوه معنی به جیب وهم پنهان کرده ایم • بیا که قاعده آسمان بگردانیم

شمار	نام شاعر	نام کتاب
6	علامه اقبال	<p>مثنوی اسرار خودی :</p> <ul style="list-style-type: none"> <li>اسرار خودی تا مرحله سوم نیابت الهی به استثنای حکایت : در معنی اینکه افلاطون یونانی....</li> <li>حکایت : در حقیقت شعر و اصلاح ادبیات اسلامیہ .</li> </ul> <p>زبور عجم :</p> <ul style="list-style-type: none"> <li>من بنده آزادم عشق است امام من</li> <li>چون چراغ لاله سوزم در خیابان شما</li> <li>ای غنچه خوابیده چو نرگس نگران خیز</li> </ul> <p>ارمغان حجاز :</p> <ul style="list-style-type: none"> <li>غلامم جز رضای تو نجویم</li> <li>در آن دریا که او را ساحلی نیست</li> <li>اناالحق جز مقام کبریا نیست</li> <li>مسلمانی که داند رمز دین را</li> <li>قلندر میل تقریری ندارد</li> </ul>
7	نیما یوشیج	ای آدمها (نظم)
8	احمد شاملو	تا شکوفه سرخ یک پیراهن (نظم)
9	فروغ فرخ زاد	دلیم برای باغچه می سوزد (نظم)
10	شفیعی کدکنی	هزاره دوم آهوی کوهی (نظم)

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**PAPER:****PERSIAN****(100 MARKS)****(نمره 100)****فارسی****برگه آزمون****بخش اول (نمره 50)**

- 1- اطلاعات بنیادی دربارهٔ زبانهای پیش از اسلام: اوستایی ، فارسی باستان و پهلوی
- 2- منشاء و تکامل فارسی معاصر ( در این قسمت جنبش بازگشت ادبی، نهضت سره نویسی و اقتباس و اتخاذ وام واژه های خارجی باید مطالعه شود)
- 3- ظهور و تاریخ ادبیات کلاسیک فارسی از دورهٔ سامانیان تا انقلاب مشروطه با تأکید ویژه بر نویسندگان و شاعران برجسته فارسی. (نویسندگان و شاعران از قرن چهارم هجری تا قرن دهم هجری)
- 4- ادبیات معاصر فارسی با تأکید بر شعر نو و داستان نویسی و نمایندگان برجسته آنها.
- 5- معرفی کوتاه زبان و ادبیات فارسی ، به علاوه ایران، در افغانستان، تاجیکستان و شبه قاره پاکستان و هند.
- 6- انواع مهم دستور زبان فارسی مانند : اسم ، فعل ، ضمیر ، صفت ، قید ، حرف ، شبه جمله/ صوت.
- 7- سبک های ادبی چهارگانه و زمینه های ایجاد آنها: خراسانی ، عراقی ، هندی و نهضت بازگشت باید مطالعه شود.
- 8- نگارش انشای کوتاه به زبان فارسی دربارهٔ ادبیات فارسی و موضوعات فرهنگی.
- 9- ترجمه پیراگراف انگلیسی ساده به زبان فارسی.

**بخش دوم (نمره 50)**

در این بخش از داو طلبان درخواست می شود تا متون مشخص شده را به دقت خوانده و به سوالات مطرح جهت تعیین توانایی هایشان پاسخ دهند.

**1.نثر: متون انتخاب**

شمار	نام مصنف	نام کتاب
1	امام محمدغزالی	- کیمیای سعادت : در رعیت داشتن و ولایت راندن
2	علی بن عثمان بجویری	کشف المحجوب : باب التصوف
3	نظام الملک طوسی	سیاست نامه فصل ششم: اندر قاضیان و خطیبان و محتسب .....
4	سعدی شیرازی	گلستان : باب اول ، حکایت اول، ششم ، هفتم، چهاردهم ، نوزدهم ، بیست و دوم ، چهل و یکم باب دوم – حکایت هفتم ، بیستم باب سوم – حکایت شانزدهم ، نوزدهم ، بیست و دوم چهارم – حکایت دوم باب ششم – حکایت چهارم باب هفتم – حکایت سوم ، حکایت ششم

شمار	نام مصنف	نام کتاب
5	حسن سجزی	فوائد الفوائد : جلد دوم، مجلس هشتم
6	جلال آل احمد	سه تار (افسانه)

## 2-POETRY

شمار	نام شاعر	نام کتاب
1	فردوسی	شاهنامه : • در ستایش خرد • در ستایش دادگستری
2	مولانا رومی	مثنوی معنوی : • نی نامه • داستان پیر چنگی با عمر رضی الله (دفتر اول) • خاریدن روستایی به تاریکی شیر را (دفتر دوم) • انکار کردن موسی بر مناجات چوپان (دفتر دوم) • اختلاف کردن در چگونگی و شکل پیل (دفتر سوم) دیوان شمس : • بروید ای حریفان بکشید یار ما را • بنمای رخ که باغ و گلستانم آرزو ست • به روز مرگ چو تا بوت من روان باشد • بیا تا قدر یکدیگر بدانیم • خنک آن دم که نشینیم در ایوان من و تو
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شمار	نام شاعر	نام کتاب
6	علامه اقبال	<p>مثنوی اسرار خودی :</p> <ul style="list-style-type: none"> <li>اسرار خودی تا مرحله سوم نیابت الهی به استثنای حکایت : در معنی اینکه افلاطون یونانی....</li> <li>حکایت : در حقیقت شعر و اصلاح ادبیات اسلامیہ .</li> </ul> <p>زبور عجم :</p> <ul style="list-style-type: none"> <li>من بنده آزادم عشق است امام من</li> <li>چون چراغ لاله سوزم در خیابان شما</li> <li>ای غنچه خوابیده چو نرگس نگران خیز</li> </ul> <p>ارمغان حجاز :</p> <ul style="list-style-type: none"> <li>غلامم جز رضای تو نجویم</li> <li>در آن دریا که او را ساحلی نیست</li> <li>اناالحق جز مقام کبریا نیست</li> <li>مسلمانی که داند رمز دین را</li> <li>قلندر میل تقریری ندارد</li> </ul>
7	نیمایوشیج	ای آدمها (نظم)
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9	فروغ فرخ زاد	دلم برای باغچه می سوزد (نظم)
10	شفیعی کدکنی	هزاره دوم آهوی کوهی (نظم)

## SUGGESTED READINGS

S. No.	Title	Author
1.	ادب نامه ایران (اردو)	مرزا مقبول بیگ بدخشانی
2.	تاریخ ایران جلد اول و دوم (اردو)	مرزا مقبول بیگ بدخشانی
3.	اقبال کامل (اردو)	مولانا عبدالسلام ندوی
4.	فکر اقبال (اردو)	خلیفه عبدالحکیم
5.	نیا ایرانی ادب (اردو)	دکتر ظهورالدین احمد
6.	ایرانی ادب (اردو)	دکتر ظهورالدین احمد
7.	فارسی ادب کی مختصر ترین تاریخ (اردو)	دکتر محمدریاض - دکتر محمد صدیق شبلی
8.	کلیات تاریخ ادبیات فارسی (فارسی)	دکتر محمد جعفر یاحقی
9.	مقالات احسن	مرتبه آفتاب اصغر ، معین نظامی
10.	شعری که زندگی است	محمد ناصر
11.	منتخبات متون فارسی دیگران	دکتر علی پدرام میرزائی و دکتر مهر نور محمد خان
12.	خود آموز فارسی (۲ جلدیں)	ایف ڈی رازی
13.	History of Iranian Literature	Jam Rypka
14.	Anthology of Persian Texts(CSS competitive Examination) Compiled by Dr. Ali Pedram Mirzaei , Dr. Mahr Noor Muhammad Khan and others	
15.	Website: Http: //president.ir/en	

**PAPER:** **PHILOSOPHY** **(100 MARKS)**

**I. Introduction:**

Definition, Nature and Scope of Philosophy

**II. Philosophical Methods:**

Socratic Method (Socrates); Inductive Method (Bacon, Mill); Deductive Method (Aristotle, Descartes); Dialectical Method (Hegel); Fallibilistic Method (Popper)

**III. Epistemology:** Rationalism (Plato, Descartes, Spinoza); Empiricism (Locke, Berkeley, Hume); Transcendentalism (Kant); Intuitionism (Bergson)

**IV. Ontology:** Idealism (Plato, Berkeley); Representative Realism (Locke); Historical and Dialectical Materialism (Marx)

**V. Ethics:** What is morality? The challenge of cultural relativism; Does morality depend on religion? Psychological and ethical egoism: Virtue Ethics (Aristotle); Moral Absolutism (Kant), Utilitarianism (J.S. Mill); Social Contract Theory (Hobbes, Rawls).

**VI. Muslim Thinkers:** Al-Farabi, Ibn Sina, Al-Ghazali, Ibn Rushid, Ibn Khaldun, Shah Waliullah, Muhammad Iqbal.

**VII. Contemporary Philosophical Movements:**

Existentialism (Heidegger, Sartre); Pragmatism (Peirce, James, Dewey); Neo-pragmatism (Rorty); Postmodernism (Lyotard, Foucault, Derrida)

**SUGGESTED READINGS**

S.No.	Title	Author
1.	A History of Western Philosophy	Bertrand Russell
2.	Philosophy: The Power of Ideas	Brooke Noel Moore & Kenneth Bruder
3.	Elements of Moral Philosophy	James Rachels
4.	Existentialism & Human Emotions	Jean Paul Sartre
5.	The Postmodern Condition: A Report on Knowledge	Jean-Francois Lyotard
6.	Descartes to Derrida: An Introduction to European Philosophy	Peter Sedgwick
7.	Continental Philosophy in the 20 <sup>th</sup> Century	Richard Kearney
8.	A Short History of Modern Philosophy	Roger Scruton
9.	A History of Muslim Philosophy. Volume I & II	M. M. Sharif
10.	A History of Islamic Philosophy	Majid Fakhry
11.	The Reconstruction of Religious Thought in Islam	Muhammad Iqbal
12.	Iqbal	Mustansir Mir
13.	Stanford Encyclopedia of Philosophy (plato.stanford.edu).	Internet Resources
14.	Internet Encyclopedia of Philosophy ( <a href="http://www.iep.utm.edu">www.iep.utm.edu</a> ).	Internet Resources



**PAPER:** **PHYSICS** **(200 MARKS)**

**PAPER—I (Marks-100)**

**I. Mechanics**

- Vectors: Dots, Cross and triple products, Gradient, divergence, curl and applications.
- Newtonian laws of motion: calculus based approach to kinematics, forces and dynamics, conservation law of energy; conservation of linear and angular momentum; Dynamics of rigid body; spin and precession; gyroscope; Gravitation; planetary motion and satellites; Kepler's laws; centripetal forces
- Special theory of relativity: Michelson-Morley experiment and Einstein's postulates; Lorentz transformation; time dilation and length contraction; equivalence of mass and energy.

**II. Fluid Mechanics**

- Surface tension; Viscosity; Elasticity; fluid motion and Bernoulli's theorem.

**III. Waves and Oscillations, Optics**

- Free oscillation with one and two degrees of freedom; forced and damped oscillations and phenomenon of resonance; Simple harmonic motion; Traveling waves and transmission of energy; Phase and Group velocity; standing waves; Basics of sound waves.
- Reflection, Refraction, Interference, Diffraction and Polarization of waves; interferometer and Newton's rings; Diffraction Gratings and their resolving power; spectro meters. Electromagnetic wave equation; normal and anomalous dispersion; coherence, lasers and applications.

**IV. Heat and Thermodynamics**

- Perfect gas, real gas and Van der Waals equation; Three Laws of Thermodynamics; internal energy; temperature; entropy; Thermal properties of simple systems; kinetic theory of gases; Maxwellian distribution of molecular velocities; Brownian motion; Transport phenomena. Classical Maxwell-Boltzmann Statistics and its application; Bose-Einstein and Fermi-Dirac Statistics.

**PAPER—II (Marks-100)**

**I. Electricity and Magnetism**

- Electric field due to point charges; Gauss' law; Electric potential; Poisson and Laplace's equations; Dielectric medium and Polarization; Capacitance; Moving charges and resulting magnetic field; Ampere's law; Magnetic properties of matter; Faraday's law of electromagnetic induction; Alternating current and RLC circuit; Poynting theorem and Poynting Vector. Maxwell's equations in integral and differential form; scalar and vector potential.

**II. Modern and Quantum Physics**

- Waves and particles and De Broglie's Hypothesis; Operators and quantum states; observables; time dependent and independent Schrodinger equation; angular momentum; spin-1/2 particle in a magnetic field; wave mechanics; particle in a box; tunneling; one-dimensional harmonic oscillator; Heisenber's uncertainty relationship and indeterminacy based on commutation properties of operators; Bohr's theory and quantum numbers including electron spin; Pauli's exclusion principle; Spectra of simple systems with one or two valence electrons; photo electric effect; Compton scattering; pair production; Lande's g factor and Zeeman effect. Raman effect;

**III. Solid State Physics**

- Crystal lattice and structure, Bravais lattice, free electron model, Band theory and electron in a periodic potential, Fermi energy and density of states, n and p type semiconductors, physics of the transistor and MOSFET, dielectric properties, magnetic properties and origin of magnetism.

**IV. Nuclear Physics**

- Structure of Nuclei; Radioactivity,  $\alpha$ ,  $\beta$  and  $\gamma$  decay; Methods of detection of nuclear radiation, Mass Spectrometer; Accelerators; Phenomenon of fission; reactor and nuclear power; nuclear fusion and its applications; Elementary particles and their properties.

**SUGGESTED READINGS**

S. No.	Title	Author
1	Perspectives of Modern Physics.	A. Beiser.
2	Fundamentals of Physics.	Halliday & Resnick
3	Introduction to Electromagnetic Fields and Waves.	D. Corson & P. Lorrain.
4	Heat and Thermodynamics.	D. Zemansky
5	Introduction to Quantum Mechanics	D. Griffiths
6	Modern Physics	Serway, Moses, Moyer.
7.	Solid State Physics	C. Kittel

**PAPER:** **POLITICAL SCIENCE** **(200 MARKS)**

**PAPER I- (Marks - 100)**

**Part-A (50 Marks)**

**I. Western Political Thought:**

Plato, Aristotle, Machiavelli, Montesquieu, Hobbes, Locke, Rousseau, Kant, Mill, Bentham, Hegel, Marx, Lenin, Mao, Gramsci, Karl Popper, Pierre Bourdieu, John Rawls, Frances Fukuyama, Foucault, Derrida, Kierkegaard, Jean Paul Sartre, Rene Descartes.

**II. Muslim Political Thought:**

Al-Farabi, Al-Mawardi, Ibn Rushd, Imam Ghazali, Ibn Taymiyyah, Nizam-ul-Mulk Tusi, Ibn Khaldun, Shah Waliullah, Allama Muhammad Iqbal, Jamaluddin Afghani, Rashid Rida.

**Part -B (50 Marks)**

**III. State System:**

The nature and emergence of modern nation-state system, Islamic concept of state and Ummah.

**IV. Political Concept (Western and Islamic):**

Sovereignty, Justice, Law, Liberty, Freedom, Equality, Rights and Duties, Human Rights, Political Authority and Power.

**V. Comparative Politics:**

Political Socialization, Political Culture, Political Development, Political Recruitment, Social Change, Civil Society, Violence and Terrorism in Politics, Gender and Politics, Women Empowerment.

**VI. Political Participation:**

Political Change and Revolution, Elections, Electoral System, Public Opinion, Propaganda, Political Parties, Pressure Groups and Lobbies.

**VII. Political Institutions and Role of Government:**

Legislature, Executive, Judiciary, Political Elites, Civil and Military Bureaucracy.

**VIII. Forms of Government:**

Monarchy, Democratic, Dictatorship, Totalitarian/Authoritarian, Unitary, Federal, Confederation, Presidential and Parliamentary.

**IX. Political Ideologies:**

Capitalism, Marxism, Communism, Socialism, Totalitarianism, Fascism, Nationalism, Islamic Political Ideology.

**X. Local Self Government:**

Theory and practice of Local Self-Government with special reference to Pakistan, Comparative analyses of systems of local governance, Public Administration and Public Policy.

**PAPER-II (MARKS-100)****Part-A (30 Marks)****I. Comparative and Analytical Study of the Political Systems:**

Political System of U.S.A, U.K, France and Germany

**II. Global and Regional Integration**

Globalization and Politics, Global Civil Society, Regional politico-economic integration and organizational structure of the European Union, SAARC, ECO, International Financial Regimes IMF and WTO.

**Part-B (70 Marks)****III. Comparative and Analytical Study of the Political Systems:**

Political system of Turkey, Iran, Malaysia, India and China.

**IV. Political Movements in India (Colonial Period):**

Rise of Muslim Nationalism in South Asia and Pakistan Movement (with special reference to the role of Sir Syed Ahmed Khan, Allama Muhammad Iqbal and Quaid-i-Azam Mohammad Ali Jinnah)

**V. Government and Politics in Pakistan:**

Constitution making from 1947 -1956, A comparative and critical analysis of 1956, 1962, 1973 Constitutions of Pakistan, Constitutional Amendments up-to-date, Federal Structure in Pakistan, and Central-Provincial relations after 18<sup>th</sup> amendment,

Political Culture of Pakistan, Political Developments and the Role of Civil and Military Bureaucracy, Judiciary, Feudalism, Dynastic Politics, Political Parties and Interest Groups, Elections and Voting Behavior, Religion and Politics, Ethnicity and National Integration.

**VI. International Relations:**

History of International Relations: Post World War-II (WW-II) Period.

Foreign Policy of Pakistan: National Interests and Major Determinants i-e

- 1). Size/Geography
- 2). Economic Development
- 3). Security
- 4). Advancement in Technology
- 5). National Capacity
- 6). Political Parties/Leadership
- 7). Ideology
- 8). National Interest
- 9). Role of Press/Bureaucracy

- 10). Social Structure
- 11). Public Opinion
- 12). Diplomacy.
- 13). Foreign Policy-making Process in Pakistan

Also External Factors like International Power Structure, International Organizations, World Public Opinion and Reaction of other States.

### SUGGESTED READINGS

S. No.	Title	Author
1.	Pakistan's Foreign Policy, 1947-2005	Abdul Sattar,
2.	Democracy and Authoritarianism in South Asia	Ayesha Jalal
3.	Military, Civil Society and Democratization in Pakistan	Akbar Zaidi
4.	The Reconstruction of Religious Thought in Islam	Allama Iqbal
5.	A history of Pakistan and its origins	Christophe Jaffrelot,
6.	Greek Political Thought: Plato & Aristotle	Eearnest Barker,
7.	Political Thought From Plato to Present	Ebenstein
8.	Political Thought in Medieval Islam	Erwin I.J. Rosenthal
9.	Constitutional Developments in Pakistan	G.W.Choudhury,
10.	Comparative Politics Today: A Theoretical Framework	Gabriel A. Almond, G.Bingham Powell,
11.	Contemporary Political Analysis	Garles Worth James,
12.	A History of Political Theory	George Holland Sabine
13.	Studies in Muslim Political Thought and Administration	H K Sherwani,
14.	Modern Islamic Political Thought	Hamid Enayat,
15.	Constitutional and Political History of Pakistan	Hamid Khan,
16.	Politics Among Nations: The Struggle for Power and Peace	Hans J. Morgenthau,
17.	Military and Politics in Pakistan	Hasan Askari Rizvi,
18.	Pakistan Foreign Policy: An Overview 1947-2004 (PILDAT)	Hasan Askari Rizvi
19.	Pakistan and Geostrategic Environment : A Study of Foreign Policy	Hasan Askari Rizvi
20.	International Politics: A Framework for Analysis	Holsti, K.J.
21.	Pakistan: A Modern History	Lan Talbot,

S. No.	Title	Author
22.	21st Century Political Science: A Reference Handbook	John T. Ishiyama, Marijke Breuning,
23.	Political Thought from Plato to Present	Judd Herman,
24.	The Political System of Pakistan,	K.B. Sayeed,
25.	Pakistan: A Political Study	Keith Callard,
26.	Pakistan: An Enigma of Political Development	Lawrance Ziring,
27.	Pakistan in the Twentieth Century	Lawrance Ziring,
28.	Pakistan: At the Crosscurrent of History	Lawrance Ziring,
29.	History of Muslim Philosophy	M M. Sharif,
30.	History of Local Government in Pakistan	Masudul Hasan
31.	Nationalism: The Nation-State and Nationalism	Montserrat Guibernau,
32.	Politics and the State in Pakistan	Muhammad Waseem,
33.	Government and Politics in Pakistan	Mushtaq Ahmad
34.	Making of Pakistan	Noor ul Haq
35.	Pattern of Government	Samuel H. Beer & Adam B. Ullam
36.	Political Thinkers: From Socrates to the Present	Paul Kelly (Ed)
37.	Introduction to Political Science, Islamabad, National Book Foundation,	Rodee Anderson etc.
38.	Pakistan's Foreign Policy : An Historical Analysis	S.M. Burke
39.	State & Society in Pakistan	Shahid Javed Burki
40.	Islami Riyasat	Syed Abul Aala Maudoodi
41.	Khilafat O Malookeyat	Syed Abul Aala Maudoodi
42.	Ethno National Movements of Pakistan	Tahir Amin
43.	Politics, Parties and Pressure Groups	V.O. Key Jr.
44.	Democratization in Pakistan	Waseem, M.
45.	Contemporary Political Philosophy: An Introduction	Will Kymlicka
46.	History of Political Theories (Three Volumes)	Willaim A. Dunning,
47.	International Relations: Politics and Economy in the 21 <sup>st</sup> Century	William Nester

**PAPER: PSYCHOLOGY (100 MARKS)**

- I. **Nature and Scope of Psychology:** Definition and scope, Psychology as a Science, Schools, Perspectives, and Models of Psychology, Recent Trends
- II. **Biological Basis of Behaviour:** Nervous System, Neuron and its function, Central and Peripheral Nervous System, Endocrine System
- III. **Sensation and Perception:** Sensory process, Perception, Gestalt Principles, Binocular and Monocular cues, Illusions and Extra Sensory Perception, Determinants of Perception
- IV. **Learning and Memory:** Nature and Forms of Learning, Types of learning: Classical and Operant Conditioning, Reinforcement, Extinction, Discrimination, Punishment, Observational Learning, Theories of Learning, Types of Memory, Process of Memory, Forgetting, Theories of Memory
- V. **Motivation and Emotion:** Homeostasis, Factors affecting Motivation, Biogenic and Social Motives, Measurement of Human Motivation, Theories of Motivation, Emotions, Types of Emotions, Physiological changes in Emotion, Theories of Emotions.
- VI. **Psychological Assessment:** Attributes of Psychological Measures, Validity, Reliability, Item Analysis, Norms, Modern Test Theory, Selection and Training, Educational and Clinical Assessment, Ethical and Legal Issues in Assessment.
- VII. **Personality:** Determinants of Personality, Factors in Development of Personality, Theoretical Perspectives, Personality Assessment and Techniques, Cross-Cultural Issues.
- VIII. **Intelligence:** Theories of Intelligence, Types of intelligence (IQ, EQ), Assessing Intelligence
- IX. **Social Influence and Group Dynamics:** Social Facilitation, Attribution, Conformity, Obedience, Altruism, Attitudes, Social Norms.
- X. **Developmental Psychology:** Physical, Cognitive, Social and Emotional development in Childhood, Adolescence, Adulthood and Old Age
- XI. **Abnormal and Clinical Psychology:** Concept and causes of Abnormality, Clinical Assessment and Intervention, Different disorders such as Schizophrenia, Mood disorder, Anxiety disorder, Personality disorder, etc. Psychological treatment including different Therapeutic instructions.
- XII. **Organizational/Industrial Psychology:** Leadership styles, Decision making, Work motivation, Organizational Culture, Stress and Conflict at Work and its Management, Organizational Socialization, Job related Attitude, Sexual Harassment, Glass Ceiling, Human Computer interaction.

**XIII. Health Psychology:** Beliefs and Behaviour, Models of Health Psychology, Assessment and Intervention, Models of Stress, Chronic and Terminal Illness, Role of Social Support.

**XIV. Forensic Psychology:** Psychology and Law, Investigation, Confession, Eyewitness Testimony, Working with Offenders, Juvenile Delinquents, Drug Addicts, Sex Offenders etc.

### SUGGESTED READINGS

S.No.	Title	Author
1.	Applied Industrial/Organizational Psychology	Aamodt, M.
2.	Introduction to Psychology	Atkinson R. C., & Smith, E. E
3.	Social Psychology	Baron, R. A
4.	Introduction to Forensic Psychology	Bartol, C. R
5.	Foundation of Physiological Psychology	Carlson, N. R.
6.	Introduction to Psychology: Gateways to Mind and Behavior	Coon, D., & Mitterer, J.
7.	Development Across the Life Span	Feldman, R.
8.	Introduction to Psychology	Fernald, L. D., & Fernald, P.S
9.	Introduction to Psychology	Atkinson & Hilgard's, Fredrickson, B
10.	Forensic Psychology	Fulero, S. M., & Wrightsman
11.	Foundation of Psychology	Hayes, N
12.	Introduction to Psychology	Kalat, J. W
13.	Abnormal Psychology	Kring, A. M
14.	Psychology	Myers, D. G.
15.	Psychology: Concepts and Connections	Rathus, S.
16.	Life Span Development	Santrock, J. W.
17.	Organizational Psychology	Singh, P.



**PAPER: PUBLIC ADMINISTRATION (100 MARKS)**

**I. Public Administration: Concepts, Approaches and Context**

Definitions; Role and Scope of Public Administration in Society; Issues in Public Administration Theory and Practice: Democracy versus Bureaucracy, Politics versus Administration, Efficiency versus Equity; Core Values of Public Administration: Rule of Law, Efficiency, Equity and Fairness, Responsiveness; Traditional Public Administration; New Public Management; New Public Service; Governance Approach to Public Administration; Islamic Concept of Public Administration; Historical roots of Public administration in Pakistan.

**II. Public Administration: Classical and Contemporary Theories and Concepts**

Bureaucracy; Scientific Management; Human Relations Approach; Leadership, Motivation, Network Governance; Strategic Management; Public Choice Theory; Types of Organizational Structure; Organization of Federal, Provincial, and Local Government in Pakistan; Administrative Culture of Pakistan; Inter-governmental Relations at Federal and Provincial level in Pakistan.

**III. Public Policy Planning, Implementation and Evaluation**

Strategic Planning and Management; Planning Process; Policy Analysis; Policy Implementation; Program Evaluation; Planning Machinery; Role of Donors and International Institutions in Public Policy and Management; Policy making and implementation in Pakistan.

**IV. Budgeting and Financial Management**

Budget as a Policy Tool; The Budget as a Managerial Tool; Principles of Budgeting, Audit and Accounting in Government; Line-Item Budgeting; Performance Budgeting; Program Budgeting; Zero-Base Budgeting; Outcome-Based Budgeting. Planning and Budgeting in Pakistan.

**V. Managing Human Resources**

Spoil system versus Merit System in Public Employment; Personnel versus Human Resources Management; Close system versus Open System of Public Employment; Functions of Human Resources Management; Implementation of HRM in Public Sector: Key Issues and Challenges.

**VI. Administrative Law**

Meaning; Scope and Significance; Nature and Contents of Administrative Law, Administrative Ethics, Delegation of Authority and Legislation, Administrative Tribunals; Administrative Law in Pakistan.

**VII. Public Management Skills**

Planning; Decision Making, Conflict Management; Leading, Communication, Administrative Buffering; Managing Change; Managing Diversity; Stress Management; Delegation; Public Service Motivation; Creativity and Problem Solving; Issues of Public Management.

**VIII. The Civil Service of Pakistan**

Historical Background of Civil Service, The Structure of civil Service; History of Civil Service Reform; Management of Civil Service; Institutional and Cultural Context of Civil Service; Role of Civil Service in Good Governance, Gender and Civil Service.

**IX. Organization of Provincial and Local Government**

Governance Structure of Provincial Administration; Organization of Provincial Secretariat; Organization and Functions of Provincial Authorities and Agencies and their Relationship with Government Departments; Post-devolution Local Governance; Organization and Functions of District Government and Administration; Organization and Structure of City District Government; Issues and Challenges of Local Governance.

**X. Governance and Administrative Reforms**

Theories of Administrative Reforms; Types of Administrative Reforms; Privatization; Regulation; De-regulation; Decentralization; Partnerships and Collaboration; Business Re-engineering, Quality Assurance; Administrative Reform in Pakistan.

**XI. Public Administration Accountability & Control**

Bureaucratic Responsiveness; Representative Bureaucracy; Citizens Engagement in Public Service; Accountability & Control; Concept and Approaches to Public Accountability; Institutional Framework for Administrative Accountability; Legislative, Executive and Judicial Control over Administration; Administrative Corruption; Role of Civil Society in Good Governance; Media, Interest Groups and Civil Society Organizations; The Situation in Pakistan.

**XII. Public Administration and Development**

Role of Public Administration in Development; Concept of Development Administration; Difference Between Development Administration and Development Management; Changing Role of Public Administration in Development, Issues and Challenges of Public Administration in Pakistan.

**SUGGESTED READINGS**

<b>S.No.</b>	<b>Title</b>	<b>Author</b>
1.	Public Administration 7 <sup>th</sup> Ed	Denhardt Robert
2.	Public Administration: Understanding Management, Politics and Law 8 <sup>th</sup> Ed	David Rosenbloom
3.	Public Administration 2 <sup>nd</sup> Ed	Caiden, Gerald E.
4.	Public Administration for the twenty first century	Cooper Et Al,
5.	Organization Theory for Public Administration	Harmon Michael & Mayer Richard
6.	Public Administration and Public Affairs 12 <sup>th</sup> Ed	Nicholas Henry
7.	Classics of Public Administration 7 <sup>th</sup> Ed	Shafritz Jay
8.	Reinventing Government	Osbourne D
9.	Evolution of Pakistan's Administration System	Braibanti, Ralph
10.	Human Development in South Asia	Mahbub-ul-Haq
11.	Bureaucracy, basic books	Wilson, James Q
12.	Bureaucracy in Pakistan	Kennedy, Charles H
13.	Public Administration and Law	Julia Beckett
14.	Public Administration: A Comparative Perspective 6 <sup>th</sup> ed.	Ferrel Hedy
15.	Public Administration and Public Management: The Principle- Agent Perspective	Jan-Erik Lane
16.	Governance: South Asian Perspectives	Hasnat Abdul Hye
17.	Governance, economic policy and reform in Pakistan: Essay in political economy	Abdus Samad
18.	Government and Administration in Pakistan	Jameelur Rehman Khan
19.	Public Administration with special reference to Pakistan	Sultan Khan
20.	Public Administration in Asia Vol. I & II	Srinivasan Kalyanaraman
21.	Organizational Theory and the Public Sector	Tom Christensen Per Laegreid
22.	Public Administration in South Asia: India, Bangladesh and Pakistan	Meghna Sabharwal, Evan M. Berman

**PAPER:****PUNJABI****(100 MARKS)**

- (الف) زبان کے زبان وی تاریخ:
- (15) 1۔ پنجابی بولی و اچھو کڑ  
2۔ پنجابی لسانیات  
3۔ پنجابی ادب وی کہانی
- (ب) کلاسیکی شاعری:
- (15) 1۔ شلوک فریدی  
2۔ کانیاں شاہ حسین  
3۔ سی حرفی سلطان باہو  
4۔ کانیاں بلھے شاہ  
5۔ ہیر  
6۔ سیف الملوک
- (ج) جدید شاعری:
- (15) 1۔ ترنجن  
2۔ کچے کھڑے  
3۔ کل کلام  
4۔ موآتے  
5۔ کلیات پیر فضل کجراتی  
6۔ بلدا شہر
- (د) اسلامی ادب:
- (10) 1۔ مواعد نو شہر پنج بخش  
2۔ چچی سرکار (سیرت)
- (ه) تخلیقی نثر:
- (15) 1۔ ڈونگھیاں شاماں (افسانہ)  
2۔ پنے دے اوہلے (افسانہ)  
3۔ دیواتے دریا (ناول)  
4۔ بول مٹی دیا باویا (ڈرامہ)  
5۔ چونجھراں (انٹائیہ)
- محمد آصف خاں  
ڈاکٹر شہباز ملک  
عبدالغفور قریشی  
بابا فرید سنج شکر  
شاہ حسین  
سلطان باہو  
بلھے شاہ  
وارث شاہ  
میاں محمد بخش  
احمد رانی  
باقی صدیقی  
منیر نیازی  
ڈاکٹر فقیر محمد فقیر  
مرتبہ: ڈاکٹر نیلہ رحمن  
رووف شیخ  
مرتبہ سید شرافت نوشاہی  
تحکیم عبدالکریم شمر

## (و) تحقیق و تنقید

(15)

- |    |            |                      |
|----|------------|----------------------|
| 1- | جہانیاں    | شریف کجای            |
| 2- | پورنے      | حسین شاہد            |
| 3- | ساراں      | نجم حسین سید         |
| 4- | ادب سمندر  | ڈاکٹر عصمت اللہ زاہد |
| 5- | پرکھ پرچول | عارف عبدالمبین       |

## (ز) اصنافِ ادب و لوک ادب

(15)

(اصنافِ ادب) شاعری:

- |    |         |    |          |    |          |
|----|---------|----|----------|----|----------|
| 1- | شلوک    | 2- | کافی     | 3- | جنگ نامہ |
| 4- | غزل     | 5- | نظم      |    |          |
| 1- | نثر:    | 2- | ڈرامہ    | 3- | افسانہ   |
| 4- | انشائیہ | 5- | سفر نامہ |    |          |
| 1- | ماہیا   | 2- | ڈھولا    | 3- | بولی     |
| 4- | ٹپہ     | 5- | لوری     | 6- | دوہڑا    |

## مجوزہ عتب:

- |     |  |                           |
|-----|--|---------------------------|
| 1-  | پنجابی شاعراں واد تذکرہ                      | مولابخش کشتہ              |
| 2-  | لعلوں دی پنڈ                                 | اقبال صلاح الدین          |
| 3-  | پنجابی ادب و ارتقاء                          | انعام الحق جاوید          |
| 4-  | پنجابی کے پانچ قدیم شاعر                     | شفیع عقیل                 |
| 5-  | پاکستانی پنجابی شاعری                        | شریف کجای                 |
| 6-  | وحدت الوجود تے پنجابی شاعری                  | سید علی عباس جلالپوری     |
| 7-  | ادب پر بیت                                   | ڈاکٹر عصمت اللہ زاہد      |
| 8-  | رنگ سنک                                      | ڈاکٹر اسلم رانا           |
| 9-  | تاریخ ادبیات مسلمانان پاکستان و ہند (جلد 13) | گروپ کیپٹن سید فیاض محمود |
| 10- | پنجابی لوک گیتاں و موضوعاتی مطالعہ           | ڈاکٹر نوید شہزاد          |
| 11- | نویں نظم                                     | ڈاکٹر سرور حسین قاضی      |

**PAPER:****PURE MATHEMATICS****(100 MARKS)****Section-A (40- marks)****I. Modern Algebra**

- Group, subgroups, Lagranges theorem, Cyclic groups, Normal subgroups, Quotient groups. Fundamental theorem of homomorphism. Isomorphism theorems of groups, Inner automorphisms. Conjugate elements, conjugate subgroups. Commutator subgroups.
- Ring, Subrings, Integral domains, Quotient fields, Isomorphism theorems, Field extension and finite fields.
- Vector spaces, Linear independence, Bases, Dimension of a finitely generated space. Linear transformations, Matrices and their algebra. Reduction of matrices to their echelon form. Rank and nullity of a linear transformation.
- Solution of a system of homogeneous and non-homogeneous linear equations. Properties of determinants.

**Section-B (40- marks)****II. Calculus & Analytic Geometry**

- Real Numbers. Limits. Continuity. Differentiability. Indefinite integration. Mean value theorems. Taylor's theorem, Indeterminate forms. Asymptotes. Curve tracing. Definite integrals. Functions of several variables. Partial derivatives. Maxima and minima. Jacobians, Double and triple integration (techniques only). Applications of Beta and Gamma functions. Areas and Volumes. Riemann-Stieltje's integral. Improper integrals and their conditions of existences. Implicit function theorem.
- Conic sections in Cartesian coordinates, Plane polar coordinates and their use to represent the straight line and conic sections. Cartesian and spherical polar coordinates in three dimensions. The plane, the sphere, the ellipsoid, the paraboloid and the hyperboloid in Cartesian and spherical polar coordinates.

**Section-C (20-marks)****III. Complex Variables**

Function of a complex variable; Demoiver's theorem and its applications. Analytic functions, Cauchy's theorem. Cauchy's integral formula, Taylor's and Laurent's series. Singularities. Cauchy residue theorem and contour integration. Fourier series and Fourier transforms.

**SUGGESTED READINGS**

<b>S.No.</b>	<b>Title</b>	<b>Author</b>
1.	Advanced Calculus	Kaplan, W.
2.	Analytic Function Theory Vol.1	Hille, E.
3.	Calculus	Anton H., Biven I and Davis, S.
4.	Complex Analysis	Goodstein G.R.G.
5.	Complex Variables	Murray R. Spiegel
6.	Calculus with Analytic Geometry	Yusuf, S.M.
7.	Calculus and Analytic Geometry	Zia ul Haq
8.	Elements of Complex Analysis	Pennisi, L.L.
9.	Theory of Groups	Majeed, A.
10.	Mathematical Methods	Yusuf, S.M.
11.	Mathematical Techniques	Karamat H.Dar
12.	Mathematical Analysis	Apostal, T.M.
13.	The Theory of Groups	Macdonald, I.N.
14.	Topics in Algebra	Herstein, I.N.

**PAPER:****SINDHI****(100 MARKS)**

1. سنڌي ٻوليءَ جي قدامت  
❖ سنڌي ٻولي بابت عالمن جا نظريا.  
❖ سنڌي ٻولي جا اهم لهجا.

2. سنڌي لوڪ ادب  
❖ لوڪ گيت (سهر، هو جمالو، لولي، مورو، وغيره)  
❖ لوڪ ٻائون  
❖ ٿور  
❖ گجھارت  
❖ پرولي

3. سنڌي ادب جا مختلف دور.  
❖ سومرا دور  
❖ سما دور  
❖ ارغون، ترخان ۽ مغل دور  
❖ لهوڙا دور  
❖ الپرن جو دور  
❖ انگريز جو دور  
❖ پا ستن يعني موجوده دور

4. لاسي ل شاعر  
❖ قاضي قادن  
❖ شاهه ريم  
❖ شاهه عبداللطيف ڀاڻي  
❖ خواجه محمد زمان لنواري  
❖ سچل سرمست  
❖ عبدالرحيم گرهوڙي  
❖ سامي

5. جديد سنڌي شاعرن جون صنفون.  
❖ غزل  
❖ نظم  
❖ آزاد نظم  
❖ گيت

- ❖ هائي و  
6. قديم سنڌي شاعرن جون صنفون.  
❖ سورنو  
❖ دوهو  
❖ بيت  
❖ وائي  
❖ افي

7. جديد دور جا سنڌي شاعر.  
❖ عبدال ريم گدائي  
❖ حاجي احمد ملاح  
❖ حيدر بخش جتوئي  
❖ شيخ اياز  
❖ تنوير عباسي  
❖ امداد حسيني  
❖ استاد بخاري

❖ مخدم طالب الموليٰ



8. سنڌي نثر نگار  
 ❖ ۱ و پيرومل  
 ❖ هوتچند مولچند گربخشاڻي  
 ❖ ميران محمد شاهه  
 ❖ مرزا قليچ بيگ  
 ❖ ۲ ر عمر بن دائود پو و  
 ❖ پير علي محمد راشدي  
 ❖ پير حسام الدين راشدي  
 ❖ جي ايم سيد  
 ❖ ۳ ر نبي بخش خان بلوچ  
 ❖ ر غلام علي الانا  
 ❖ محمد عثمان ڏيپلاني  
 ❖ ۴ ۵ ۶ ۷ ۸ ۹ ۱۰ ۱۱ ۱۲ ۱۳ ۱۴ ۱۵ ۱۶ ۱۷ ۱۸ ۱۹ ۲۰ ۲۱ ۲۲ ۲۳ ۲۴ ۲۵ ۲۶ ۲۷ ۲۸ ۲۹ ۳۰ ۳۱ ۳۲ ۳۳ ۳۴ ۳۵ ۳۶ ۳۷ ۳۸ ۳۹ ۴۰ ۴۱ ۴۲ ۴۳ ۴۴ ۴۵ ۴۶ ۴۷ ۴۸ ۴۹ ۵۰ ۵۱ ۵۲ ۵۳ ۵۴ ۵۵ ۵۶ ۵۷ ۵۸ ۵۹ ۶۰ ۶۱ ۶۲ ۶۳ ۶۴ ۶۵ ۶۶ ۶۷ ۶۸ ۶۹ ۷۰ ۷۱ ۷۲ ۷۳ ۷۴ ۷۵ ۷۶ ۷۷ ۷۸ ۷۹ ۸۰ ۸۱ ۸۲ ۸۳ ۸۴ ۸۵ ۸۶ ۸۷ ۸۸ ۸۹ ۹۰ ۹۱ ۹۲ ۹۳ ۹۴ ۹۵ ۹۶ ۹۷ ۹۸ ۹۹ ۱۰۰ ۱۰۱ ۱۰۲ ۱۰۳ ۱۰۴ ۱۰۵ ۱۰۶ ۱۰۷ ۱۰۸ ۱۰۹ ۱۱۰ ۱۱۱ ۱۱۲ ۱۱۳ ۱۱۴ ۱۱۵ ۱۱۶ ۱۱۷ ۱۱۸ ۱۱۹ ۱۲۰ ۱۲۱ ۱۲۲ ۱۲۳ ۱۲۴ ۱۲۵ ۱۲۶ ۱۲۷ ۱۲۸ ۱۲۹ ۱۳۰ ۱۳۱ ۱۳۲ ۱۳۳ ۱۳۴ ۱۳۵ ۱۳۶ ۱۳۷ ۱۳۸ ۱۳۹ ۱۴۰ ۱۴۱ ۱۴۲ ۱۴۳ ۱۴۴ ۱۴۵ ۱۴۶ ۱۴۷ ۱۴۸ ۱۴۹ ۱۵۰ ۱۵۱ ۱۵۲ ۱۵۳ ۱۵۴ ۱۵۵ ۱۵۶ ۱۵۷ ۱۵۸ ۱۵۹ ۱۶۰ ۱۶۱ ۱۶۲ ۱۶۳ ۱۶۴ ۱۶۵ ۱۶۶ ۱۶۷ ۱۶۸ ۱۶۹ ۱۷۰ ۱۷۱ ۱۷۲ ۱۷۳ ۱۷۴ ۱۷۵ ۱۷۶ ۱۷۷ ۱۷۸ ۱۷۹ ۱۸۰ ۱۸۱ ۱۸۲ ۱۸۳ ۱۸۴ ۱۸۵ ۱۸۶ ۱۸۷ ۱۸۸ ۱۸۹ ۱۹۰ ۱۹۱ ۱۹۲ ۱۹۳ ۱۹۴ ۱۹۵ ۱۹۶ ۱۹۷ ۱۹۸ ۱۹۹ ۲۰۰ ۲۰۱ ۲۰۲ ۲۰۳ ۲۰۴ ۲۰۵ ۲۰۶ ۲۰۷ ۲۰۸ ۲۰۹ ۲۱۰ ۲۱۱ ۲۱۲ ۲۱۳ ۲۱۴ ۲۱۵ ۲۱۶ ۲۱۷ ۲۱۸ ۲۱۹ ۲۲۰ ۲۲۱ ۲۲۲ ۲۲۳ ۲۲۴ ۲۲۵ ۲۲۶ ۲۲۷ ۲۲۸ ۲۲۹ ۲۳۰ ۲۳۱ ۲۳۲ ۲۳۳ ۲۳۴ ۲۳۵ ۲۳۶ ۲۳۷ ۲۳۸ ۲۳۹ ۲۴۰ ۲۴۱ ۲۴۲ ۲۴۳ ۲۴۴ ۲۴۵ ۲۴۶ ۲۴۷ ۲۴۸ ۲۴۹ ۲۵۰ ۲۵۱ ۲۵۲ ۲۵۳ ۲۵۴ ۲۵۵ ۲۵۶ ۲۵۷ ۲۵۸ ۲۵۹ ۲۶۰ ۲۶۱ ۲۶۲ ۲۶۳ ۲۶۴ ۲۶۵ ۲۶۶ ۲۶۷ ۲۶۸ ۲۶۹ ۲۷۰ ۲۷۱ ۲۷۲ ۲۷۳ ۲۷۴ ۲۷۵ ۲۷۶ ۲۷۷ ۲۷۸ ۲۷۹ ۲۸۰ ۲۸۱ ۲۸۲ ۲۸۳ ۲۸۴ ۲۸۵ ۲۸۶ ۲۸۷ ۲۸۸ ۲۸۹ ۲۹۰ ۲۹۱ ۲۹۲ ۲۹۳ ۲۹۴ ۲۹۵ ۲۹۶ ۲۹۷ ۲۹۸ ۲۹۹ ۳۰۰ ۳۰۱ ۳۰۲ ۳۰۳ ۳۰۴ ۳۰۵ ۳۰۶ ۳۰۷ ۳۰۸ ۳۰۹ ۳۱۰ ۳۱۱ ۳۱۲ ۳۱۳ ۳۱۴ ۳۱۵ ۳۱۶ ۳۱۷ ۳۱۸ ۳۱۹ ۳۲۰ ۳۲۱ ۳۲۲ ۳۲۳ ۳۲۴ ۳۲۵ ۳۲۶ ۳۲۷ ۳۲۸ ۳۲۹ ۳۳۰ ۳۳۱ ۳۳۲ ۳۳۳ ۳۳۴ ۳۳۵ ۳۳۶ ۳۳۷ ۳۳۸ ۳۳۹ ۳۴۰ ۳۴۱ ۳۴۲ ۳۴۳ ۳۴۴ ۳۴۵ ۳۴۶ ۳۴۷ ۳۴۸ ۳۴۹ ۳۵۰ ۳۵۱ ۳۵۲ ۳۵۳ ۳۵۴ ۳۵۵ ۳۵۶ ۳۵۷ ۳۵۸ ۳۵۹ ۳۶۰ ۳۶۱ ۳۶۲ ۳۶۳ ۳۶۴ ۳۶۵ ۳۶۶ ۳۶۷ ۳۶۸ ۳۶۹ ۳۷۰ ۳۷۱ ۳۷۲ ۳۷۳ ۳۷۴ ۳۷۵ ۳۷۶ ۳۷۷ ۳۷۸ ۳۷۹ ۳۸۰ ۳۸۱ ۳۸۲ ۳۸۳ ۳۸۴ ۳۸۵ ۳۸۶ ۳۸۷ ۳۸۸ ۳۸۹ ۳۹۰ ۳۹۱ ۳۹۲ ۳۹۳ ۳۹۴ ۳۹۵ ۳۹۶ ۳۹۷ ۳۹۸ ۳۹۹ ۴۰۰ ۴۰۱ ۴۰۲ ۴۰۳ ۴۰۴ ۴۰۵ ۴۰۶ ۴۰۷ ۴۰۸ ۴۰۹ ۴۱۰ ۴۱۱ ۴۱۲ ۴۱۳ ۴۱۴ ۴۱۵ ۴۱۶ ۴۱۷ ۴۱۸ ۴۱۹ ۴۲۰ ۴۲۱ ۴۲۲ ۴۲۳ ۴۲۴ ۴۲۵ ۴۲۶ ۴۲۷ ۴۲۸ ۴۲۹ ۴۳۰ ۴۳۱ ۴۳۲ ۴۳۳ ۴۳۴ ۴۳۵ ۴۳۶ ۴۳۷ ۴۳۸ ۴۳۹ ۴۴۰ ۴۴۱ ۴۴۲ ۴۴۳ ۴۴۴ ۴۴۵ ۴۴۶ ۴۴۷ ۴۴۸ ۴۴۹ ۴۵۰ ۴۵۱ ۴۵۲ ۴۵۳ ۴۵۴ ۴۵۵ ۴۵۶ ۴۵۷ ۴۵۸ ۴۵۹ ۴۶۰ ۴۶۱ ۴۶۲ ۴۶۳ ۴۶۴ ۴۶۵ ۴۶۶ ۴۶۷ ۴۶۸ ۴۶۹ ۴۷۰ ۴۷۱ ۴۷۲ ۴۷۳ ۴۷۴ ۴۷۵ ۴۷۶ ۴۷۷ ۴۷۸ ۴۷۹ ۴۸۰ ۴۸۱ ۴۸۲ ۴۸۳ ۴۸۴ ۴۸۵ ۴۸۶ ۴۸۷ ۴۸۸ ۴۸۹ ۴۹۰ ۴۹۱ ۴۹۲ ۴۹۳ ۴۹۴ ۴۹۵ ۴۹۶ ۴۹۷ ۴۹۸ ۴۹۹ ۵۰۰ ۵۰۱ ۵۰۲ ۵۰۳ ۵۰۴ ۵۰۵ ۵۰۶ ۵۰۷ ۵۰۸ ۵۰۹ ۵۱۰ ۵۱۱ ۵۱۲ ۵۱۳ ۵۱۴ ۵۱۵ ۵۱۶ ۵۱۷ ۵۱۸ ۵۱۹ ۵۲۰ ۵۲۱ ۵۲۲ ۵۲۳ ۵۲۴ ۵۲۵ ۵۲۶ ۵۲۷ ۵۲۸ ۵۲۹ ۵۳۰ ۵۳۱ ۵۳۲ ۵۳۳ ۵۳۴ ۵۳۵ ۵۳۶ ۵۳۷ ۵۳۸ ۵۳۹ ۵۴۰ ۵۴۱ ۵۴۲ ۵۴۳ ۵۴۴ ۵۴۵ ۵۴۶ ۵۴۷ ۵۴۸ ۵۴۹ ۵۵۰ ۵۵۱ ۵۵۲ ۵۵۳ ۵۵۴ ۵۵۵ ۵۵۶ ۵۵۷ ۵۵۸ ۵۵۹ ۵۶۰ ۵۶۱ ۵۶۲ ۵۶۳ ۵۶۴ ۵۶۵ ۵۶۶ ۵۶۷ ۵۶۸ ۵۶۹ ۵۷۰ ۵۷۱ ۵۷۲ ۵۷۳ ۵۷۴ ۵۷۵ ۵۷۶ ۵۷۷ ۵۷۸ ۵۷۹ ۵۸۰ ۵۸۱ ۵۸۲ ۵۸۳ ۵۸۴ ۵۸۵ ۵۸۶ ۵۸۷ ۵۸۸ ۵۸۹ ۵۹۰ ۵۹۱ ۵۹۲ ۵۹

امر جليل	❖ جن مان نه هوننس
ستار پي	❖ قيديءَ جي عيد
عابده گهانگهرو	❖ تخليق جو انت
انور ۱ ۱	❖ وصيت نامو
آغا سليم	❖ چن جا تمنائي
ماهتاب محبوب	❖ چاندي جون تارون
مرزا قليچ بيگ	❖ 12 ڀرامن جا
مرزا قليچ بيگ	❖ ليلي مجنون
مرزا قليچ بيگ	❖ حسنا دلدار
مرزا قليچ بيگ	❖ شهزادو بهرام
محمد اسماعيل عرساڻي	❖ اند وائري آفيسر
شمشير الحيدري	❖ بد نصيب ٿري
ممتاز مرزا	❖ اڪ محل
قاضي خادم	❖ آخري رات
شيخ اياز	❖ لڪل ڪلڪ زنجير
قمر شهباز	❖ جي جو بيجل ٻوليو
	❖ واچوڙن ۾ لاٽ
	13. اهم سفرناما
قاضي عبدالمجيد عابد	❖ يورپ جي ڊائري
سيد غلام مصطفي شاهه	❖ سير ۽ سفر
ڊا ر عبدالجبار جوڻيجو	❖ ماڻو جي مل ۾
الطاف شيخ	❖ منهنجو ساگر منهنجو ساحل
فقير محمد لاشاري	❖ سگهارو هماليه هيٺا ماڻهو
شيخ عزيز	❖ مون لينن جو ڏيهه ڏٺو
محبوب شيخ	❖ ميه کان ماس و
تنوير عباسي	❖ ٿوري ٿوري ڏيهه
احمد علي رند	❖ چار گھ يون چين ۾
ماهتاب محبوب	❖ سرهي سرهي سار
اسحاق انصاري	❖ پرين هن پار
	14. ٿياري لاءِ مددي تاب
لياڻ آڏواڻي	1 شاهه جو رسالو
ڊا ر گربخشاڻي	2 مقدمه لطيفي
سراج	3 سنڌي ٻولي
جي ايم سيد	4 پيغام لطيف
تنوير عباسي	5 شاهه جي عوامي شاعري
ڊا ر نبي بخش بلوچ	6 سنڌي ٻولي ۽ ادب جي تاريخ
پيرومل آڏواڻي	7 سنڌي ٻولي جي تاريخ
ڊا ر غلام علي الانا	8 سنڌي ٻولي جو بڻ بنياد
ڊا ر عبدالجبار جوڻيجو	9 سنڌي ادب جي تاريخ
پبلشر: سنڌي لئنگويج اٿارٽي، حيدرآباد	جلد 1
	جلد 2
	جلد 3
هينرو ر	10 قاضي قادن جو لام

11. ريم جو لام      ڊا ر دائود پو و  
12. چل جو لام      عثمان انصاري  
13. سنڌي شاعري جون صنفون      ظفر عباسي  
14. سنڌي ٻولي ۽ ادب جي مختصر تاريخ      طارق عزيز شيخ پبلشر: انڀاواڙ اسد ور راجي  
15. چار مقالا      اسماعيل عرسائي  
16. سنڌي لوڪ ادب جو تحقيقي جائزو      عليدا ريم سنڊيلو  
17. سنڌي ادب جي تاريخ      مختيار ملاح  
18. سنڌي لوڪ ٻوليون      ڊا ر نبي بخش بلوچ  
19. ار (مضمونن جو تاب)      ڊا ر نواز علي شوق  
20. سنڌي افسانو      ميمڻ رانجهڻ خان  
21. سنڌي نثر جي تاريخ      منگهارام ملهائي  
22. چوند سنڌي افسانا      ڊا ر غلام علي الانا  
23. سچل سارو سچ      مرتب: ڊا ر نواز علي شوق  
24. چهريءَ جا مور      ڊا ر مال ڄام و  
25. شاعرانو اڀياس      پروفيسر منظور ڪڇ و  
26. هه عبداللطيف ڀٽائي ۽ پا      ستاني ٻولين جا صوفي شاعر  
( مال ڄام و ۽ طارق عزيز شيخ )

15. (الف) سنڌي ۾ ڏنل مضمون جو انگريزي ۾ ترجمو  
(ب) انگريزي ۾ ڏنل پيراگراف جو سنڌي ۾ ترجمو

**PAPER:****SOCIOLOGY****(100 MARKS)****I. General Sociology**

1. **Individual:** Sociability or the sociality of man.
2. **Culture:** Meaning and Characteristics (Culture is variable, learnt, social, shared, transmissive, dynamic and adaptive), types (Material, Non –material), functions (transfer of knowledge, define situation, provide behaviour pattern, moulds personality) and elements of culture (norms, values, beliefs, sanctions, customs). Culture and Socialization; formal and non-formal socialization, transmission of culture, cultural relativism. Sub-cultures. Ethnocentrism and xenocentrism, Cultural lag, High culture and popular culture. Multiculturalism, assimilation, and acculturation.
3. **Society:** Meaning and characteristics. Community; meaning and characteristics. Individual and society. Relationship between individual and society. Two main theories regarding the relationship of man and society (i) the social contact theory and (ii) the organismic theory. Social and cultural evolution of society (Hunting and Gathering Society, Herding and Advance Herding Society, Horticultural Society, Agrarian Society, Industrial Society, Post modern Society).
4. **Social Interaction:** Caste and classes, Forms of social classes, Feudal system in Pakistan, Social Mobility-nature of social mobility and its determinants in Pakistani society, Culture of poverty.
5. **Social Control:** Mechanisms of social control-formal and informal means of social control, Anomie, Alienation and social Integration-Means of social integration in Pakistani Society.
6. **Social and Cultural Change and Social Policy:** Processes of Social and Cultural Change-discovery, Inhibitions to social and cultural change in Pakistan, Social planning and directed social and cultural change, Effect of Industrialization, Urbanization, Modernization and Modern Means of Communication on Social Change.
7. **Public Opinion:** Formation of public opinion, concept of opinion leader, characteristics of opinion leadership.
8. **Community:** The rural community, Traditional Characteristics of rural life, The urban community, Rural – Urban convergence, Urbanism, Future of cities in Pakistan.
9. **Social Institutions:** The nature and genesis of institutions, The process of institutionalization, Functions of Social Institutions: Family, Religion, Education, Economy and Politics.
10. **Social Problems in Pakistan:** High population growth rate, Rural –urban migration. Issues of technical/vocational training, Deviance and street crime, Unemployment, illiteracy and School drop out, Smuggling, Prostitution, Poverty,

Drug Addiction, Child Labour and Abuse, Bonded Labour, Social customs and Traditions affecting Women in Pakistan, Violence Against Women and Domestic Violence, Issues concerning the Elderly in Pakistan.

## II. Sociological Theory:

Three sociological perspectives: Structural Functionalism, Symbolic interactions and Conflict. Theorists: Ibn-i-Khaldun, Spencer, August Comte, Emile Durkheim, Max Weber, Karl Marx, Parson.

## III. Methods of Sociological Research:

Scientific Method, Steps in research, Types of Questionnaire Research Design, Surveys, Observation and Case Studies.

### SUGGESTED READINGS

S.No.	Title	Author
1.	Sociology : A down to earth approach	James M. Henslin
2.	Methods of Social Research	Baily
3.	Poverty Curtains	Dr. Mehboob-ul-haq
4.	Contemporary Sociological Theories	Pitrim Sorokin
5.	Master of Sociological Thought	Lewis A. Coser
6.	Sociology	Ogburn & Nimkoff
7.	Social Change and History	Robert Nisbet
8.	Feudal System in Pakistan	Nawab Haider Naqvi
9.	The Sociology of Rural Life	Lynn Smith, T.
10.	Sociology-Social Structure and Social Conflict	Kerbo, Harold R. (1989).
11.	Sociology: An Introduction to the Science of Society	Koenig Samuel
12.	Marriage and The Family	Lee, Alfred Mclung and Lee, Elizabeth Briant (1961).
13.	The Design of Social Research,	Ackoff, Russel, L. (Latest ed.)
14.	An Introduction to the History of Sociology	Barnes, H.E. (Ed.) (1966)
15.	Pakistani Society	Akbar Ahmad, S.
16.	Contemporary Sociological Theories	Pitrim Sorokin
17.	Sociology, 10th edition	John, J. Macionis. 2004.
18.	Research Methodology	Neuman, Lawrance (Rvs. Ed.)
19.	Sociological Theory	Ritzer, Georg, (1988).

**PAPER:****STATISTICS****(100 MARKS)****Part – I (50 marks)****I. Descriptive Statistics**

Definition, Importance and scope of Statistics, Descriptive and Inferential Statistics, Presentation of the Data, Tables, Graphs and Charts: Stem-and leaf diagram, Box and Whisker Plots. Measures of Central Tendency/location, Measures of Dispersion/Variability: Measures of Skewness and Kurtosis.

**II. Basic Probability**

Basic Probability Concepts, Additive and Multiplicative laws of Probability, Joint and Marginal Probabilities, Conditional Probability and Statistical Independence, Bayes' rule. Concept of a Random Variable, Mathematical Expectations, Discrete and Continuous Random Variables, Probability Distribution, Mean and Variance of a Discrete Probability Distribution.

**III. Probability Distributions**

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

**IV. Regression Analysis & Correlation Analysis**

Concepts of Regression and Correlation and their application, Simple and Multiple Linear Regression (upto three variables), Estimation of the Parameters of simple regression Model, Method of least square, Inference regarding regression parameters.

Correlation, Correlation Coefficient, Properties of Correlation Coefficient, Inference regarding correlation coefficient, Partial Correlation and Multiple Correlation Coefficients (upto three variables).

**V. Non-Parametric Methods**

Parametric versus nonparametric tests, when to use non-parametric procedures, One-sample tests: Sign test, Wilcoxon signed ranks tests, Kolmogorov-Smirnov test, run test.

Tests for two related samples: sign test, run tests, chi-square test, Test for two independent samples: Mann-Whitney test, Kolmogorov-Smirnov test.

**Part – II (50 marks)****I. Sampling & Sampling Distributions**

Population and Sample, Advantages of Sampling, Sampling Design, Probability & Non-Probability Sampling techniques. Brief Concepts of Simple Random, Stratified,

Systematic, Cluster, Multiphase and Multistage Sampling. Non-probability 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.

## **II. Statistical Inferences**

Estimation: Point Estimation, Properties of a good Estimator. Interval Estimation. Interval Estimation of Single Population means and Single proportion. Difference between two means and Difference between two proportions.

Hypothesis Testing: Types of errors. Hypothesis Testing for Population Mean. Inferences for difference between Two Population Means. Inferences for the difference between Means of Two Normal Populations using Independent Samples (variances are assumed Equal) for sample size. Inference for Two Populations Mean using Paired Samples. Hypothesis testing for Single Population Proportion and difference between two population proportions. Estimation of sample size

Analysis of categorized data. Goodness of fit tests. Contingency tables. Test of independence in contingency tables.

## **III. 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).

## **IV. Population Analysis & Vital Statistics**

Population and Demographic Methods, Sources of Demographic data, Basic Demographic Measures, Sex Ratio, Child Women Ratio, Vital Index, Crude and Specific Birth and Death Rates, Total Fertility and Net Reproduction Rates.

Official Statistics: Statistical Systems in Pakistan, Functions of Statistics Division, Bureaus of Statistics and NADRA. The National Income, Gross Domestic Product, Saving and Wealth, Index Numbers.

**SUGGESTED READINGS**

<b>Sr. No.</b>	<b>Title</b>	<b>Author</b>
1.	Principles and Procedures of Statistics	Steel, R and Torrie, J.H.
2.	Probability and Statistics for Engineers and Scientist	Walpole, R.E., Myers, R.H. and Myers, S.L.
3.	Introduction to Statistical Theory, Part-I & II	Chaudhry, S.M. and Kamal, S.
4.	Introduction to Probability Theory and Statistical Inference, 3 <sup>rd</sup> Edition.	Larson, H.J.
5.	Design and Analysis of Experiments	Montgomery, D.C.
6.	Fundamentals of Modern Statistical Methods	Wilcox, R.
7.	Biostatistical Analysis	Zar, J.H.
8.	Latest Statistical Methods	Vaidyanathan, M.
9.	Statistical Methods	Aggarwal, Y.P.
10.	Mathematical Statistics	Freund, John E.
11.	Demographic Methods	Andrew Hinde
12.	Publications of Federal Board of Statistics and Provincial Board of Statistics, Pakistan.	Govt. of Pakistan



**PAPER: TOWN PLANNING & URBAN MANAGEMENT (100 MARKS)**

- I. **Definition of Town Planning, Goals and objectives of Town Planning:** Town Planning as a multi-disciplinary approach and relationship of Town Planning with other professions.
- II. **Historical Perspective of Urban Planning:** Planning of historical towns in the world. Examples of planned towns in Europe, Nile Valley region, Euphrates and Tigris Valley region and Indus Valley region (Mohenjodaro, Harappa, Kot Diji and Mehr Garh and Gandhara Civilization).
- III. **Urban Rural Differences and Hierarchy of Settlements:** Urbanization and its effects on the environment of urban areas.
- IV. **History of planning in Pakistan:** 5 year plans, Regional Plans, Master Plans etc.
- V. **Managing Urbanization**
  - How to manage urbanization
  - Best Practices
  - Land use classification policy
  - Building and development control
  - Removal of encroachments
  - Introduction to Intelligent Transport Systems (ITS)
- VI. **Housing community and Economic Development:** To prepare professionals with the skills and knowledge of equitable development. Commitment to expanding opportunities and providing quality of life for disadvantaged groups.
- VII. **Public Policy and Urban Design Management:** Solving social and environmental problems using:
  - a. Economics,
  - b. Policy analysis,
  - c. Political science and
  - d. Urban Design
- VIII. **Sustainability, Environmental Policy and Planning:** How society conserves and manages its natural resources and works to promote development, while conserving and maintaining healthy environment.
- IX. **Urban Information Systems:** Use of planning related software and spatial analysis tools and systems e.g. GIS, SPSS etc.

**SUGGESTED READINGS**

<b>S.No.</b>	<b>Title</b>	<b>Author</b>
1.	Introducing Town Planning	Clara Greed
2.	Introduction to Town and Country Planning	John Ratcliff
3.	Town Planning for the Third World	A.K. Bhatti
4.	Contemporary Urban Planning	J.M. Levy
5.	Land Use, Planning, and Zoning	Peter J. Loughlin,
6.	Town and Country Planning in the UK	J.B. Cullingworth, Vincent Nadin
7.	Town Planning in Practice	Raymond Unwin,
8.	World Cities and Urban	Mike Janks
9.	Urban Land Use Planning	Philip R. B
10.	Environmental Science: A Global Concern	William P
11.	Megacity Management in the Asian and Pacific Region (Vol-2)	Stubbs, Jeffery Giles Clarke
12.	Dying Cities: Surviving the Urban Jungle	Somaiya N
13.	Handbook on Urban Sustainability	Springer
14.	Emerald Cities – Urban sustainability and Economics	Joan Fitzgerald
15.	Growing Greener Cities	Eugene Birch, Susan Wachter
16.	The Earth scan Reader in Sustainability Cities	David Sattethwaite
17.	The Poverty Curtain	Dr. Mehboob –ul-Haq
18.	Reflections on Human Development	Dr. Mehboob –ul-Haq
19.	Smart Cities	Anthony Townsend

**PAPER:****URDU LITERATURE****(100 MARKS)**

- ۱۔ اردو ادب کا مطالعہ 25
- i۔ اردو زبان و ادب کی اسلامی شناخت
- ii۔ بیسویں صدی کی ادبی تحریکیں
- iii۔ پاکستانی ادب کی اصطلاح: تشکیل و روایت اور ارتقاء
- ۲۔ شعری ادب کا تنقیدی مطالعہ
- الف۔ دور قدیم 15
- i۔ میر (غزل - انتخاب میر مولوی عبدالحق)
- ii۔ غالب (دیوان غالب)
- iii۔ حالی (مسدس)
- iv۔ اقبال (طلوع اسلام، خضر راہ، مسجد قرطبہ)
- ب۔ دور جدید 10
- i۔ فیض (غزل - دست صبا)
- ii۔ راشد (نظم - ایران میں اجنبی)
- iii۔ مجید امجد (نظم - شب رفته)
- iv۔ ناصر کاظمی (غزل - برگ نے)
- ۳۔ نثری ادب کا تنقیدی مطالعہ
- الف۔ غیر افسانوی نثر 10
- i۔ شبلی (سیرت النبی ﷺ، جلد اول)
- ii۔ مولوی عبدالحق (خاکے، چند ہم عصر)
- ب۔ افسانوی نثر 15
- i۔ منٹو (افسانے، منٹو کے ہیں افسانے: مرتب ڈاکٹر انوار احمد، ڈاکٹر اے بی اشرف)
- ii۔ احمد ندیم تاشکی (افسانے، کپاس کا پھول)
- iii۔ مشتاق احمد یوسفی (طنز و مزاح، آبِ گم)

10

۴۔ تخصیص

15

۵۔ مضمون

مجوزہ کتب برائے مطالعہ

- |                                  |  |
|----------------------------------|--|
| ڈاکٹر وزیر آغا                   | ۱۔ تنقید اور جدید اردو تنقید           |
| ڈاکٹر انور سدید                  | ۲۔ اردو ادب کی تحریکیں                 |
| شیخ محمد اکرام                   | ۳۔ آب کوثر                             |
| شیخ محمد اکرام                   | ۴۔ روڈ کوثر                            |
| شیخ محمد اکرام                   | ۵۔ مون کوثر                            |
| ڈاکٹر روبینہ شہناز               | ۶۔ اردو تنقید میں پاکستانی تصور قومیت  |
| مرتبین: ڈاکٹر رفیع الدین ہاشمی،  | ۷۔ قابلیات کے سو سال                   |
| ڈاکٹر سہیل عمر، ڈاکٹر وحید عشرت  |  |
| ترتیب نو: ڈاکٹر خواجہ محمد زکریا | ۸۔ تاریخ ادبیات مسلمانان پاکستان و ہند |
| مرتب: ڈاکٹر نواز علی             | ۹۔ اردو ادب کے پچاس سال                |

**PAPER: ZOOLOGY (100 MARKS)****I. Animal Diversity-Invertebrates**

- Architectural pattern of an animal, Taxonomy and phylogeny, Major subdivisions of animal kingdom.
- Animal-Like Protists: The Protozoa: evolutionary perspective, locomotion and reproduction, Protozoa of veterinary and medical importance.
- Porifera: Body wall, skeleton and water currents system. Coelenterates: Reproduction plan and alteration of generation (Polymorphism), Coral reefs.
- Platyhelminthes and Nematodes: Parasitic adaptations and medical importance. Annelids: Metamerism and ecological importance.
- Molluscs: Modification of foot, Feeding and their role in the shell fishery.
- Arthropods: Modification in their mouth parts, Role of arthropods as vectors in the transmission in microbial infection. Arthropods and their ecological importance.
- Echinoderms: Characteristics, Evolutionary perspective, Relationships to other animals; echinoderm characteristics.

**II. Animal Diversity-Chordata**

- Hemichordates and Invertebrate Chordates: Evolutionary Perspective: Phylogenetic Relationships and considerations.
- Fishes: Structural and functional adaptations of fishes.
- Amphibians: Movement onto land and early evolution of terrestrial vertebrates.
- Reptiles: Characteristics of reptiles, adaptations in reptilians.
- Birds: Migration and navigation, adaptations.
- Mammals: Structural and functional adaptations of mammals.

**III. Principles of Animal Life**

- The chemical basis of animal life: Brief introduction to bio-molecules; carbohydrates, lipids, proteins and nucleic acids.
- Cell concept and cell theory, Organization of cellular organelle (their structure and functions), Central dogma of cell biology (Transcription and Translation), Meiosis and Mitosis
- Protozoa: Reproduction pattern in protozoan, Parasitism in protozoan
- Mesozoa and Parazoa: Porifera: Cells types, body wall and skeleton and water currents system, Coelenterata: Reproduction plan and alteration of generation (Polymorphism)
- Tissues Types: epithelial, connective, muscle and nervous tissues; organs and organ systems.
- Enzymes function and factors affecting their activity, cofactors and coenzymes. Energy Harvesting: Aerobic and anaerobic respiration the major source of ATP.

- Mendel's law of inheritance, Chromosomal basis of inheritance, Multiple alleles, Eukaryotic chromosomes: Mutations and chromosomal aberrations.
- Ecological Concepts: Interactions, Concepts and components of ecosystem, Food chain, Food web, Biogeochemical cycles, Forests, Biomes, Wildlife conservation and management, Environmental pollution, Green house effect, Acid rain, Global warming and climate change.
- Evolution: Darwinian evolutionary theory based on natural selection and the evidence, Microevolution: Genetic variation and change within species, Macroevolution: Species and speciation (Allopatric, Parapatric and Sympatric speciation)

#### IV. 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
- Homeostasis: Excretion, Vertebrate kidney mechanisms, Temperature regulation
- 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,
- Animal Behavior: Learning, Habituation, Insight learning, latent learning, classical learning: Control of Behavior; social behavior

#### SUGGESTED READINGS

S.No.	Title	Author
1.	Integrated Principles of Zoology.	Hickman, Jr. C.P., Keen, S. L, Larson, and Eisenhour, D.J.
2.	Zoology	Miller, S. A. and Harley, J. B.
3.	Biology	Campbell, N.A.
4.	Evolution. 2nd Edition	Douglas Futuyma
5.	Animal behavior:- An Evolutionary Approach, (9 <sup>th</sup> Edition)	John Alcock