

MILITARY SCIENCE

Part – I	75 Marks
Part – II	75 Marks
Total	150 Marks

Part-I (Class-IX)	Marks: 75	Time: 2:30 Hours
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PART I – GENERAL

War in General

- a) Cause of War
- b) Conflict of interest between states/societies
- c) Survival of the fittest

War and Diplomacy

- a) War is a continuation of diplomacy
- b) Wars must serve political and diplomatic aims

Military Terminology Application of Science

- a) Period prior to industrial revolution
- b) After industrial revolution
- c) Nuclear era
- d) Future trends

Miscellaneous

- a) Badges of rank in the three services.
- b) Distinctive features of the uniforms of the three services.
- c) Pay-Scales.
- d) Messing/Residential/Medical Facilities

PART II – PAKISTAN ARMY

Functions of the Army Organization

- a) Battalion/Regiment and sub-units of different arms and Services.
- b) Brigade.

Training

- a) Importance of Training.
- b) Training of officers at P.M.A. and other schools.
- c) Training of other Ranks.
- d) Training in Units.
- e) Collective Training

Fire and Movement Patrolling

- a) Aim of Patrolling
- b) Types of Patrolling

Arms and Equipment

- a) Rifles
- b) Machine Guns
- c) Mortars
- d) Guns
- e) Tanks
- f) Armoured Personnel Carriers
- g) Anti-tank Weapons
- h) Wireless Equipment and Codes
- i) Field Telephone
- j) Vehicles including recovery vehicles
- k) Helicopters, including armed helicopters
- l) Light observation aircrafts
- m) Radar
- n) Mines
- o) Anti-tank weapons.
- p) Long Range Rockets

PART III – PAKISTAN NAVY SECTION I

INTRODUCING THE SUBJECT OF THE SEA, SHIPS AND SAILORS

- a) A General Introductory lecture on sea, ships and the men who stay at sea
- b) Names of Oceans & important seas – Different categories of ships: Merchant, Passenger, Fishing and Fighting ships and their mode of propulsion, old and new.
- c) Highlight adventure and thrill experienced at sea

IMPORTANCE OF THE SEA

- a) Uses of the sea-General importance in its effect on weather, rain
- b) Means of transportation and trade
- c) Means of communication between nations
- d) Resource for food
- e) Resource for minerals and metals and chemicals
- f) Use as a battle ground
- g) Recreation and development of human character-swimming, sailing, diving etc

KNOWLEDGE OF THE SEA ENVIRONMENT AND COAST OF PAKISTAN

- a) Coastline of Pakistan.
- b) Karachi and small harbours along with coast, new development.
- c) Off shore sea area, high-seas general description, depths etc.

IMPORTANCE OF SEA TO PAKISTAN

- a) Almost total dependability for imports/exports
- b) Fish catch for own consumption and export.
- c) Recovery of minerals-oil drilling in progress etc
- d) Direct communications with Muslim countries etc
- e) Enemy threat can come from this direction

SECTION II**ORGANIZATION OF PN**

- a) Organization or Naval Headquarters & MHQ
- b) Organization of Principal support facilitates e.g. Dockyard NSD, Wireless Stations Clifton/Landhi, Floating Dock Graving Dock etc
- c) Organization of Fleet
- d) Service Structure Rank/Role Structure – Trade/profession

TYPES OF NAVAL CRAFTS & WARFARE TACTICS

- a) Petrol Crafts Gun boats, Torpedo Boats, Missile Boats, Hydro oil Hoover crafts
- b) Mine Sweepers Ocean going/coastal inshore
- c) Frigates A/A, A/D, A/S
- d) Destroyers Brief Idea
- e) Cruisers Brief Idea
- f) Aircrafts carriers
- g) Fleet tankers
- h) Ocean going Tugs/PNS Madadgar (Salvage ships)
- i) Floating Docks
- j) Auxiliary vessels
- k) Submarine –Ocean going large –Medium
 –Midgets –Chariots
- l) Landing crafts –LST –LCM –LCVP

SECTION III**NAVAL ARMAMENT, WEAPON SYSTEM AND BASIC NAVAL WAR TACTICS**

- a) Naval –ultra high muzzle Velocity –Long range
 –Flat trajectory –Dual purpose
 –A/A and Anti/ship small caliber; high rate of fire
- b) Naval Missile –Antiship Missile –AGROC
- c) Torpedo –Conventional & Homing
- d) Anti-Submarine –LIMBO-A/S Mortar –Hedgehog
 –Depth Charge –Homing Torp/ASROC
- e) Mines –Contact –Magnetic
 –Acoustic –Pressure

SECTION IV

SIMPLE EXPLANATION OF MARITIME STRATEGY

- a) Offensive Component;
 - 1. Submarines
 - 2. SSG Navy
 - 3. Mining of Enemy water
- b) Defensive
 - 1. Maritime Reconnaissance
 - 2. Helicopter/Destroyer Hunter Killer operation
 - 3. Deployment of surface Fleet
- c) Harbour Defence/Boom Defence
- d) Qasim Fort, Battery (Coastal)
- e) Surveillance centres-Radar Early Warning
- f) Defensive Mining
- g) Beach/Coastal obstructions to seaward landings
- h) Gunboat, deployment-Anti OSA Role
- i) Hydrofoils Deployment-Anti ship Role

SECTION V

INTRODUCTION TO NAVAL EQUIPMENT

- a) Diving Suit/Deep diving
- b) Diving Equipment-Skin Diving
- c) Depth change
- d) Radar
- e) Periscope
- f) Sonar

Part-II (Class-X)

Marks: 75

Time: 2:30 Hours

PART 1 – GENERAL

Leadership

- a) Definition of Leadership
- b) Qualities of a good Leader
- c) Leadership Traits
- d) How Leadership can be developed
- e) Selected Biography of one Commander

Military Geography

- a) Pakistan
- b) India
- c) Afghanistan

Military History

- a) History of war on Land, Air & Sea
- b) Evolution of methods of warfare
- c) Study of one campaign
- d) Some principles of war

Discipline and Morale

- a) The stresses of war
- b) The role of Discipline and Morale
- c) The role of leadership, training, motivation etc. in promoting Discipline and Morale

Military Methodology

- a) Appreciation
- b) Battle Procedure
- c) System of Giving Orders

Theorists of War

- a) Ancient theorists
- b) Modern theorists
- c) Communist theorists

Security and Intelligence

- a) Psychological Warfare aimed at the minds of the enemy in order to strike at his morale
- b) The role of motivation and dissemination of information to counter Psychological Warfare
- c) Security of Personnel against subversion
- d) Security of information against espionage
- e) Security of material against sabotage

- f) Acquisition of information/intelligence about enemy:
 - (i).Strength/weaknesses
 - (ii).Dispositions
 - (iii).Plans Intention
- g) Methods employed to gain information about the enemy and to deny the same to the enemy

Nuclear/Biological and Chemical Warfare

- a) Fission and Fusion
- b) Effects of nuclear explosion – blast, heat and radiation. Radio-active fall-outs and their effects
- c) Use of germs and bacteria in warfare; protective measure
- d) Use of chemical agents such as gases etc. as a lethal means in war, protective measures

PART II - PAKISTAN ARMY

Operations of War

- a) Attack
- b) Defence

Raids and ambushes

- a) Raids
- b) Ambushes

Camouflage

- a) Why things are visible
- b) Camouflage against ground observer
- c) Camouflage against air

Obstacles

- a) Obstacles a barrier to movement
- b) Natural obstacles
- c) Artificial obstacles
- d) How to overcome obstacles

Map Reading

- a) Conventional Signs
- b) Scales
- c) Grids
- d) Representation of Relief
- e) Directions
- f) Use of maps
- g) Recognition of Stars

PART III – PAKISTAN NAVY SECTION I

GEOGRAPHICAL IDEA OF SEA AND LAND SURFACE OF EARTH

- a) Areas covered by sea and land 7/10ths surface is covered by water
- b) Comparison of weather conditions of both-rain storms, clams
- c) Ocean depths, currents & streams
- d) Botanical and biological life in the sea

HIGH IMPORTANCE OF THE INDIAN OCEAN

- a) General description of India Ocean-Arabian sea, Oil Gulf, Red sea, Other parts
- b) Mostly inhabited by Muslims
- c) Passage of very important oil cargo through Indian Ocean
- d) Most of the Third World-Afro-Asian block countries situated on the periphery of Indian Ocean
- e) Military uses of Indian ocean by big powers

ROLE OF THE SEA IN WORLD HISTORY AND DEVELOPMENT OF NATIONS

- a) General description of maritime achievements and supremacy of nations
- b) Ancient times-Phoenicians Chinese, Pre-Islamic Arabs, Romans
- c) Middle Ages-Muslims, Turkey and Spain, Portugal Holland
- d) Advantages and qualities imbibed by sea faring peoples
- e) Economic and commercial prosperity facilitated by sea
- f) Comparison between coastal and land locked stars

ASSOCIATION OF MUSLIM WITH THE SEA AND THEIR ROLE IN DEVELOPMENT OF SEA CRAFT

- a) With the rise of Islam spirit of adventure and learning brought Muslims closer to sea
- b) Early sea expeditions by Muslims – times of Umar. Muawiys and other campaigns & conquests in Eastern Mediterranean Islands Indian Ocean. West coast of India. Western Mediterranean Spain etc. Persian Gulf, Red sea
- c) Emphasis on campaigns of Muhammad Bin Qasim and Tariq bin Zaid. Ibne Qasim arrived by land but reserve support arrived by sea expedition; he also left by sea. Tariq made amphibious landing and burnt the boats
- d) Development of Navigation and sea craft by Muslims during 8th to 16th century
- e) Navigation basically dependent upon geography Mathematics and Astronomy which were highly developed by Muslims. In addition Muslims developed optics, sail making and boat building
- f) Indian Ocean and Mediterranean Sea vastly influenced by Muslims. Muslim settlements in coastal areas and Islands spread throughout seas
- g) Sea trade between Persian Gulf and North Africans passing round the Cap of Good Hope was in progress long before Vascoda Gama passed that way. Even Vascoda Gama had a Muslim Cartographer & navigator for his voyage
- h) Importance crew members including a Navigator of Columbus were Muslims on his voyage to America
- i) Recent evidence unearthed that Muslims from North Africa were sailing to America in century hundred years before Columbus reached there

LIFE DEEDS OF A GREAT MUSLIM NAVAL PERSONALITY

- a) Life of Khairuddin Barbarossa
- b) His objectives of saving Moorish Muslims from Spanish persecution of preventing Christian powers conquest of North African Muslim states and of wresting, maritime control of Mediterranean from Spain

DETAILED FUNCTIONS OF THE NAVY SECTION II
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- a) General surveillance and supervision of our cost and territorial waters to prevent irregularities, encroachments etc. and to exert our own right of seabed exploitation, fisheries etc
- b) Survey of our coast and waters. Work done by PNS Zulfiqar
- c) Assist the Government in development of ports and harbours Bandur Qasim Guadars Ormara etc
- d) Aid to Civil Government in management and operations of Harbour and coastal facilities during strikes/disturbances running of Karachi port Trust, manning tug boats pilot duties etc
- e) Disaster Relief work, during floods, heavy rains etc
- f) Salvage/Diving work, services rendered by PN Divers at Davns, Barrages Harbour operations
- g) Rescue at sea-towing of Pakistan or foreign Ships stranded in our waters, rescue of cress etc. during emergencies on shops at sea off or coast
- h) Provide logistic and repair/maintenance facilities of PN Dockyard to friendly Navies, Iran Arab states, Egypt have used our services
- i) Administrative operational and training assistance to friendly and Muslim countries – training of their naval officers and men helping them in building up their navies
- j) Cooperation with Army and Air force-training, survival and rescue at sea SSG waterman ship.
- k) Assistance in development of Pak Merchant Navy – Training administration etc
- l) Promotion of Pakistan's policies in development of friendly relations with foreign countries – good will cum operational visits, description of major visits to Oil Gulf, Red Sea, South Indian Ocean, East Africa, South East Asia

SECTION VII SOME HISTORICAL SEA ENGAGEMENTS AND OPERATIONS

- a) Battle of Preveza between Ottoman and Combined Spanish Italian fleets which decide maritime supremacy of Turks in the Mediterranean
- b) Inadequacy of sea power of Mughals in India – a reason of their downfall. Attempts of Build up Sea power by Hyder Ali and Tipu Sultan. Dwarka Operation by Pakistan Navy in 1965. Sinking of Indian Frigate by PN submarine in 1971
- c) Campaign of Gallipoli against the Turks-failure of British
- d) Normandy landings during World War II
- e) Japanese attack on Pearl Harbour

PART IV PAKISTAN AIR FORCE

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| 1 Function of the Air Force | 2 Training |
| 3 Organization | 4 Development of Air Power |
| 5 Types of Aircraft | 6 Armament |
| 7 Air Defense | 8 Bomber Force |
| 9 Tactical Air Force | 10 Maritime Air Force |
| 11 Air Transport Force | 12 Air Reconnaissance |
| 13 Effectiveness of Air Power in
Different types of Terrain | 14 Japanese Surprise Attack on
Pearl Harbour. |
| 15 Battle of 'D' —Day. 6 th June, 1944 | 16 Arab-Israel Wars |

Prescribed Book: Military Science for Class—(IX–X)

Authors: Lt. Cdr. Zahur Ahmad , Major Muhammad Ali , Flt. Lt. Ghulam
Yasin Butt , P.A.F. Academy, Risalpur

Published by: Malik Siraj Din & Sons, Kashmiri Bazar, Lahore.

For: NWFP Textbook Board, Peshawar.

