

MID CAREER PROFESSIONAL EXAMINATION

1. In order to refresh and update professional knowledge of mid-seniority officers, a Mid Career Professional Examination (MCPE) for officers has been introduced in the Coast Guard w.e.f. 2000.

Aim

2. The aim of the examination is to promote self-study of professional subjects. This will also improve and update the professional knowledge and quality of middle seniority officers in the Coast Guard.

Frequency of Examination

3. The examination will be held in the month of August / September every year unless promulgated otherwise.

Mode of conduct

4. One written paper comprising of multiple answer type and short answer type questions followed by Oral Board.

Eligibility

5. All officers of 10 to 13 years of service as on 01 Jan of the year of the examination would be eligible to appear.

Requirement to Qualify

6. Qualifying the MCPE will become pre-requisite for consideration of officers for the following:-

- (a) Staff course and LDMC
- (b) Command of FPV and above
- (c) Appointments in Key Command and Staff Commanders and CSOs etc.

7. In addition to qualifying in the MCPE, the record of officers as reflected in their confidential reports would be taken into account while selecting officers for Staff course, LDMC, Command and Key Staff appointments.

Subjects and Syllabi for examination

8. The subjects / detailed syllabi for the examination for GD, Tech and Law officers have been placed as **Appendix 'A'**, **'B'** and **'C'** respectively.

Standard of Knowledge

9. The standard of knowledge from officers on various topics is indicated as 'A', 'B', or 'C' in respective syllabi, which stand for -

- 'A' - Thorough Knowledge
- 'B' - Working Knowledge
- 'C' - Knowledge of principles only

Pass Percentage

10. The MCPE consists of written examination and oral board for 150 and 100 marks respectively. Percentage of marks to qualify in the examination will be as follows:-

- (a) Written Papers - 55 %
- (b) Oral Board - 60 % (Only for General Duty Officers)

11. The breakdown of marks for written paper is mentioned in the syllabi and the breakdown of marks for oral board is placed at **Appendix 'D'**.

12. An officer obtaining an overall average of 75 % and above will be awarded a first class.

Attempts permitted

13. An officer will be permitted maximum of three attempts to qualify in the examination. It is mandatory that officers appear in written examination and oral examination (if passed in written examination) in the first attempt, failing which they will be disqualified, in the entire examination. The absence of a candidate after volunteering for the examination without valid reasons would constitute a failure at one attempt. However, if a candidate desires to withdraw his name from the examination without such penalty, due to valid reasons, he should forward his request to CGHQ through his Administrative Authority.

14. An officer will only be awarded a first class grading if he passes in the first attempt, notwithstanding marks obtained in the subsequent attempts.

Conduct of Examination

15. (a) The overall conduct of the MCPE will be overseen by a board at CGHQ, which will comprise of

DDG	-	President
D(Pers)	-	Permanent Member
D(HRD)	-	Permanent Member
D(Mat), D(FM) and CLO	-	Optional members (for Engg / Elect and Law officers)

(b) The setting of question papers and evaluation of answer books will be done by Officers specially nominated by the board.

(c) Written examinations will be conducted simultaneously at Mumbai , Chennai and Port Blair under RHQ arrangements on the dates promulgated by CGHQ.

(d) Commanding Officers of ships / establishments are to forward names of eligible officers desirous of appearing in MCPE along with the prescribed proforma (placed at **Appendix 'E'**), duly completed, to their respective administrative authorities by 10 May every year. The administrative authorities are to forward consolidated lists with the proforma to CGHQ by 31 May of that year.

(e) CGHQ after scrutiny, will promulgate the list of candidates appearing for the examination indicating index number allotted to them.

(f) Supervisory board for each center comprising of two commandants for every 15 candidates is to be appointed by the authority conducting the examination at a particular center.

(g) The required number of question papers will be forwarded in a sealed cover by CGHQ to the administrative authority that will hand them over to the President, Supervisory Board on the day of the examination. The President, Supervisory Board in the presence of the candidates will open the question papers.

(h) Before the commencement of the examination, the President, Supervisory Board will obtain the signatures of the candidates against their index number on nominal roll. Candidates are to indicate only their index number on all answer books / additional sheets in the space provided for it. They are not to write their names on the answer books / additional sheets.

(j) All candidates will be identified and seated according to a seating plan, which will be drawn in advance by the President, Supervisory Board. A copy of the seating plan indicating the names of invigilating officers, the periods for which they invigilated, the venue of examination and nominal roll of candidates, are to be enclosed with the worked answer books by the President, Supervisory Board. The worked answer books are to be arranged in an ascending order of the index number and sealed in an envelope along with the enclosures mentioned above.

(k) At the conclusion of the examination, same day, the envelope containing the worked answer books together with extra question papers and the other enclosures is to be despatched in a sealed packet marked 'Personal and Confidential' to the Dte of HRD, CGHQ, New Delhi.

Oral Board

16. Oral Examinations will only be conducted for GD/PN Officers at Chennai / Mumbai or both places simultaneously depending upon the number of candidates by a board constituted by CGHQ as under :-

- (a) DIG(GD) - President (with AOPV / OPV command experience)
- (b) Two commandants - Members (with OPV/FPV command experience)
(GD)

17. The candidates who fail to qualify in ROR are to be re-examined after 2 weeks. In case the candidates fail in the oral board then the candidate, if eligible has to appear again for written examination next year. The candidates passed in re-examination will be given pass percentage in the oral board.

Requests for change of Examination centre

18. Officers who are unable to take the examinations at the centre notified due to leave / temporary duty / permanent transfer are to apply to their respective administrative authorities requesting for a change of centre. Administrative authorities may permit change of centre as required, keeping CGHQ informed. Extra question papers and answer books to the extent of 25 % of the registered strength of the candidates will be provided to each centre to cater this. However, in case such requests for change of centre exceed

25 % of the strength, administrative authorities may forward demand for additional question papers / answer books to CGHQ at least three weeks prior to the commencement of the examination, if the centre cannot accommodate additional candidates due to lack of question papers / answer books.

Evaluation and Declaration of Results

19. (a) On receipt of worked answer books, CGHQ will arrange to get papers evaluated by duly appointed examiners. The results of the written examination will be promulgated after the board approves these.

(b) The officers who qualify in the written examination are to appear for the oral board constituted by the CGHQ. The result of the oral examination will be forwarded to the CGHQ. The final results will be promulgated after the approval of the MCPE board.

Review of Results

20. There is no provision either for review of results / revaluation of answer books or for the perusal of evaluated answer books. However, requests for re-totalling of marks scored by a candidate may be forwarded to CGHQ by administrative authorities. As this may generate in fructuous work / avoidable correspondence, administrative authorities may exercise careful scrutiny of such request before recommending them.

Grant of Waivers / Relaxation of Eligibility conditions

21. Officers should endeavour to appear for examination as soon as they enter into eligibility zone. No waivers or relaxation of eligibility conditions will be granted except in rare cases of service exigencies or in case hospitalisation / sick leave, with a specific recommendation from the Region Commander.

REVISED SYLLABI
MCPE
GENERAL DUTY OFFICERS

1. GENERAL NAVIGATION

Marks – 25

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Type of charts, Information shown on charts Standard Symbols and Abbreviations used, Distinguishing well-surveyed chart, Correction of charts. Datum shift, ECDIS and electronic charts	A
2	Various Navigational publications	B
3	Methods of obtaining position line, Methods for Fixing ship	A
4	Pilotage, Navigation in Coastal waters, Navigation in canals and in coral waters. Passage planning, Passage in fog and thick weather	A
5	Anchoring – Planning and Execution	A
6	IALA Maritime Buoyage system in Region A	A
7	Aids to Navigation – EM log, Echo sounder, Radar, GPS, Differential GPS, Gyro, magnetic compass---Principles And limitations	B
8	Blind Pilotage with specific reference to bridge organization	A
9	Navigational Instruments - Sextant, Anemometer, Distance meter, Batternberg	B
10	Relative velocity triangle, Problems on opening/closing on a steady bearing and changing station.	A
11	Tides, Tidal Streams and currents. Tide calculation for standard ports	B
12	Tropical Revolving Storms	A
13	NDB, Chart correction log, Navarea log, Ships log book	A
14	Bridge organization and Procedures	A
15	Pilotage claims	B

2. CG TACTICS & SCOUTING OPERATIONS

Marks – 10

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	<u>Terminology & Definition.</u> Scouting, Search and Patrol, Method of Search And Patrol, Tracking and Reconnaissance, Terms used in Scouting: Track spacing, Sweep width, Coverage factor	B
2	<u>Factors affecting and Planning of Scouting Mission.</u> Aim, Initiation of Scouting operations, Consideration in search design, Security of search, Economy in use of scouts, Accuracy of Navigation, Effectiveness of search	B
3	<u>Area of Search.</u> Entry probable area, Calculation of drift factor.	B
4	<u>Search and Patrol</u> Types of Search: Rectangular search, Expanding square search, Intercepting search. Types of patrol: Fixed station patrol, Linear patrol, Cross over patrol.	B
5	Principles of Boarding operations, Conduct of anti-smuggling/poaching operations. Gradual use of force.	A

3. POLLUTION RESPONSE AND CONTROL

Marks – 10

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	<u>Marine environment</u> – Pollution response and pollution control; P3C concept for marine environment; Pollution response action; Coast Guard role; Contingency planning Tier approach for oil spill response.	A
2	<u>Oil spill at sea</u> – Causes of spill; Behavior of oil; Properties of oil' Air surveillance' Calculation of quantity, direction and speed of slick' Weathering of oil; Oil spill containment; Type of booms; Booms failure; Booms anchoring; Deployment of boom.	A
3	<u>Recovery and disposal</u> – Various types of skimmers; Principle of skimmer and their operation; Storage devices; Transportation of oil; Disposal of recovered oil and oily waste	A
4	<u>Alternative method of disposal of oil spill</u> – In-situ burning Bioremediation; Principle of bioremediation; Pro and cons of Bioremediation and in-situ burning.	B
5	<u>Oil spill on shore line</u> – Migration of oil on shore line. Types of shore line; Effect of oil on shore line.; Methods of shore line clean up; Coordination of agencies involved in shore line clean up.	B
6	<u>OSD/Chemical agents</u> – Collecting agents; Sinking agents; Dispersant; Types of dispersant' Basic principle of OSD; Basic Guidelines for use of OSD; Window of opportunity for use of OSD.	B
7	<u>Legislation</u> – NOS-DCP; National & International legislation including merchant shipping Act 1958; Environment protection Act; Indian port Act; Fund convention; MARPOL 73/78 annex-I; IOPC fund; Filing of claims.	B
8	<u>CG Pollution equipments</u> – Pollution Response equipments with Coast Guard; Usage and operation.	B
9	<u>Handling of CG vessels for combination oil pollution</u> – Capabilities and limitation. (a) AOPV'S/OPV'S (b) FPV'S/IPV'S	B
10	Case study of major oil spill disasters	B

4. SAR OPERATIONS

Marks – 15

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Search & Rescue – Objectives and benefits of SAR; Component of SAR.	A
2	SAR Organisation – Various international conventions; Role of Coast Guard for SAR; National SAR organization; National SAR plan; National SAR Communication system.	A
3	SAR Operation – Various maritime and aeronautical Distress; False alerts and their prevention; Sea-Air coordinated search Techniques; Planning and operations; Rescue planning and Operations; Rescue planning and operations; Mission orders.	A

5. MARITIME LAW

Marks – 10

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	International Maritime Organisation (IMO) – Organisation and its Role.	B
2	UNCLOS III, High Seas – its meaning, Freedom of the High Seas meaning, Fishing on the High Seas. Piracy – its object and where it can be committed, Right of hot pursuit.	B
3	Fisheries Regulations and Fishing rights, Fishing gear Materials – classification of fishing gears, trawl net-classification of trawl gear, Bull trawl.	B
4	Protected marine species	B
5	Offshore oil rigs and management of oil exploration	B
6	SBMs and oil/gas submarine pipeline	B
7	International Humanitarian Law and the Geneva Conventions of 1949, the First Geneva Convention (for wounded and sick), the Second Geneva Convention (Maritime Convention), the Third Geneva Convention (Treatment of POWs), the Fourth Geneva Convention (Civilians), and the Geneva Convention Act, 1960 (CGO 12/89).	B
8	The Merchant Shipping Act, 1958 – General Administration (Part III), Certificates of Officers (Part VI), Collisions, Accidents at sea and liability (Part X and XA), Prevention and containment of pollution of the sea by oil (Part XIA), Wreck and Salvage (Part XIII)	B
9	The Maritime Zones of India (Regulations of Fishing by Foreign Vessels) Act, 1981 and Rules framed there under (MZI Rules, 1982)	B
10	The Territorial Waters, Continental Shelf, Exclusive Economic Zone and Other Maritime Zones Act, 1976.	B
11	Coast Guard Law – Procedures relating to Summary Trial, Board of Inquiry, Recording of Evidence, and Abstract of Evidence, hearing of charge and disposal	A

6. CG ADMINISTRATION

Marks – 05

<u>S. NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	CGHQ Organisation with duties and function of various Directorates	B
2	Accounting of Public and Non-Public funds.	A
3	Custody, accounting of cash/stores.	A
4	Important policies in force	B
5	Duties of various departments on boards ships	A
6	Basic knowledge of refit, types of refit, security organisation	B
7	Pay & Allowance of CG Personnel, Promotion rules, condition of service, Travel entitlement (Ty/PMT duties).	A
8	CB's, BR's, SP's, CD's – care, custody and accounting, muster, destruction, loss of CB's and safe keys	A
9	Handing/taking over command	A
10	Conventions of service writing, security classification, appendixes, enclosures, headings, spacing, abbreviations, code words, nickname's etc.	C
11	Service correspondence, layout, general rules, types of correspondence-service letter, DO, letters to civilians, Govt of India letter, service note.	C
12	Delegated financial powers rules (DFPR)	C
13	Accommodation orders/Authorised Married Establishment scales for officers/EPs and civilian personnel.	C
14	Housing/Motor Car/Scooter/Computer Advance	B
15	Key organisation.	B

7. CURRENT AFFAIRS

Marks - 05

<u>S. NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Areas of world dispute with particular reference to South Asia/West Asia and the Indian Ocean region.	B
2	International and regional organizations UNO, UNESCO, FAO, ICAO, WHO, Arab League, the Warsaw Pact, NATO etc.	C
3	East West relations : The rise and decay of regional pacts and military alliances: role of neutral and uncommitted nations. The third World, North-South/South-South dialogue. The Unipolar World relevance and NAM.	B
4	National and International terrorism including low intensity conflicts.	C
5	India's neighbours Pakistan, Nepal, Bhutan, Bangladesh, Myanmar, Sri Lanka, Maldives.	B
6	Countries of South East Asia, ASEAN, recent political/military changes & re-percussions on India.	B
7	Indian Affairs. The Five Year Plans and resources to implement them. Development projects and their achievements. Indian Constitution and the roles of Central and State governments.	B
8	Defence budget, Defence PSUs, DRDO labs & their organization	B

8. LOGISTICS

Marks - 05

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Stores – permanent/consumable, demand/supply/survey and loss statement.	C
2	Ship allowance list.	C
3	Local Purchase Procedures and Accounting.	B
4	Classification & categories of uniforms.	C
5	Movement Control Organisation, Warrants and MC notes	C
6	Preparation of Statement of Case	B

9. SHIP HANDLING AND ROR

Marks – 10

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1.	<u>Ships Handling.</u> Propulsion and Steering of ships, Handling ships in narrow waters, Handling ships in heavy weather.	A
2.	Ship Borne Helo Operations . Basic capabilities of CG Aircraft (Dornier, Helicopter, ALH) Restrictions imposed on aircraft operations due to weather and role configuration.	A
3.	Handling power boats	A
4.	Ship handling during , SKBDL, Towing operations and Pollution response operations	B
5.	<u>ROR: International Regulations For Preventing Collisions At Sea, 1972</u> Part A Part B to Part D Part E	B A B

10. COMMUNICATION AND GUNNERY **(Total Marks – 15)**

SECTION-I : COMMUNICATION

Marks - 10

<u>S. NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1.	Area broadcast, ships shore and fixed services/land lines, passage communication – SOP/TOP, Sailing order, Arrival/departure signal, CHOP timing and Shift of broadcast. Security classification and procedures, Handling of exclusive message, INMARSAT, Abbreviations used, Records maintained by Communication department, Internet, Intranet, E-mail, SAR communication, GMDSS, Air-sea communication.	A

SECTION-II : GUNNERY

Marks - 05

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Knowledge of 76/62 SRGM, 2A42 30 mm Medak and 40/60 mounting with particular reference to rate of fire and effective ranges, firing precautions and mis-fire procedure.	A
2	Knowledge of spraying, sprinkling and flooding arrangement	A
3	Capabilities and limitations of small arms, Safety rules of Small Arms	A
4	Accounting, custody, precautions regarding arms, ammunition and explosives. Issue of magazine keys & small arms	B
5	Landing and Boarding party organizations with special emphasis on <ul style="list-style-type: none"> (i) Boarding Officer's duties (ii) Documents to be carried (iii) Documents to be verified from vessel being boarded 	B
6	Responsibilities of Gunnery officer	B
7	List of books and records maintained by Gunnery deptt	B
8	Watch and station Bill, Watch and Quarter Bill, Action messing, Emergency action stations and securing stations	A
9	Coast Guard (ceremonial) rules 1988	A

11. ENGINEERING, NBCD, FIRE FIGHTING AND DAMAGE CONTROL

Marks - 10

Section - I : Engineering

(a) Propulsion System of Ship

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Type of main propulsion systems, advantages and disadvantages, methods of obtaining astern power.	B
2	Power transmission arrangement in the ships –working principles.	B
3	Main propulsion system control position arrangement and working principles.	B
4	Factors affecting fuel economy, specific fuel consumption, power speed relationship, types of fuels, transmission losses.	B
5	Precautions for operation of main engines, preparatory procedures and dangers of mal-operation in ships in which serving / served.	B
6	Emergency procedures to be followed for safe operation of machinery in the event of loss of electric power, loss of lubrication, failure of important auxiliaries, in ships in which served / serving.	B

(b) Auxiliary Machinery

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Functions of important auxiliary and domestic machinery fitted in ships, effects of failure – care in operation.	B
2	Standby capacities of generating plants.	B
3	General knowledge regarding causes of machinery noise/vibration and their effects	C

(c) Maintenance, Repairs, Refits and Returns

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	On board maintenance philosophy, system of maintenance, repairs and refits of ships.	B
2	Factors affecting operational cycle of ships, refit intervals.	B
3	Factors affecting operational cycle of ships, refit intervals.	B
4	Role and responsibilities of CGRPS, RHQ'S.	B
5	Planned preventive maintenance system, implementation of follow-up.	B

(d) Diesel Engines. Precautions for safe exploitation of diesel engines need to avoid low – load operation.

(Contd....Section II)

Section-II : NBCD, Fire Fighting & Damage Control

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Duty watches and security rounds, responsibilities of OOD Duty SO'S and DC Patrol.	A
2	Damage Control and Fire Fighting organisation at sea and in harbour. Welding organization on board ships.	A
3.	Parts of ship and departmental organisation	B
4	NBCD – States of readiness	B
5	NBCD Organisation and returns	
6	Precautions to be taken during underwater activities (diving and operation of machinery)	B
7.	Principles of fire-fighting and major / minor fire-fighting equipment.	A

12. ELECTRICAL

Marks - 05

<u>S.NO</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Service requirements of generators, various distribution systems and arrangements on ships.	C
2	Converted supplies and emergency supplies and their applications/service where used. The voltage and frequency standards for converted supplies.	C
3	Precautions/procedures for connecting shore supply	C
4	Arrangement/actions to maintain power supply under damage conditions in ships.	C
5	Electric shock and care of power equipment	C
6	Precautions to be taken during dry docking with specific reference to earthing and bonding of ships.	C
7	Principle of GPS and DGPS	C
8	Philosophy of maintenance followed onboard ships	C
9	ICCP for steel and aluminum hulls, principle and precautions	C
10	Basic radar equation and factors affecting range and accuracy.	C
11	ARPA displays	C
12	Principle and operation UHF/DF and IFF	C
13	Principle and operation of SATCOM	C
14	EMI Hygiene onboard ships	C
15	Layout of typical weapon system onboard a ship.	C
16	Electro optical fire control system(EOFCS) of SRGM	C
17	Thermal Imagers	C

13. INFORMATION TECHNOLOGY

Marks – 05

I	<u>Introduction</u>	
	Familiarise with basic concepts of computer	A
	Basic I/O Systems	A
	IT Tools & Application	B
II	<u>Operating System</u>	
	Introduction of Operating System	B
	Personal Computer Software	B
III	<u>Internet</u>	C
	Introduction to Internet Tools and Application	
	IT Security	
	E-mail	
IV	<u>LAN and Networking</u>	B
	LAN and its components	
	WAN and its components	
V	<u>Introduction to Hardware</u>	B
	Storage Devices	
	Printers	
	Modems	
	Scanners	
	RAM, ROM, EPROM & PROM	

14. SEAMANSHIP

Marks - 10

PART – I

<u>S.NO</u>	<u>SUBJECT</u>	<u>SOK</u>
1	<u>Type of Ships:</u> Warships, Merchant Ships and Sailing Vessels	B
2	Handling wire ropes	B
3	Handling hawsers: Berthing hawsers. Fitting, supply and maintenance of hawsers.	A

PART – II

<u>S.NO</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Anchor and Cables: Type of anchors and chain cable. Associated gear, Associated fittings. Maintenance, survey and testing of anchors & cables.	A
2	Anchor Work – Anchoring and weighing	A
3	Towing and taking in Tow: Towing gears. Preparation for towing. Taking in tow, slipping and recovering tow. Precautions when towing or being towed.	A
4	Underway Replenishment at Sea: Methods. General requirements. Fuelling by the astern method.	A
5	Maintenance of safety and survival equipment.	A
6	Seamanship organisation and upkeep: Seamanship organization in warships, seamanship equipment upkeep.	A

PART-III

<u>S.NO</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Types of maintenance followed on board	B
2	Different types of log books	B
3	Refit Organisation, CGRPS Organisation, maintenance staff of RHQs, procedure for off-loading jobs in Coast Guard, conducting of refit.	B
4	Ship Husbandry, Planned preventive maintenance – Kalamazoo – cards – documentation.	B

15. LEADERSHIP

Marks – 05

<u>S.NO</u>	<u>SUBJECT</u>	<u>SOK</u>
1	<u>Concept of leadership, management and command</u> – Definition of Leadership; Military Leadership; Relationship and Management; Approach to Leadership etc.	B
2	<u>Traits</u> – Leadership Traits; Are Leaders born; in-born traits; Examples; Traits positively to be found in leaders; Traits of Military Leaders; Ethics and morals in the military etc.	B
3	<u>Style</u> – Authoritarian; Democratic Leadership; Grid approach etc	B
4	<u>Indicator of Leadership</u> – Symbolic behaviour; Decision making behaviour; Concern for Task etc.,	B
5	<u>Characteristics of Leader</u> – Mental ability; Courage; Maturity Social orientation; Perception; Motivation etc.,	B
6	<u>Group Dynamics</u> – Function of groups; Understanding of goals; Sense of responsibility' Needs for autonomy; Interest and Motivation etc.	B
7	<u>Inter personnel Relations</u> – Transactional Analysis.	B
8.	<u>Biographies of following leaders: -</u> (a) Mac Arthur (b) Rommel (c) Mountbatten (d) Field Marshal Manekshaw	C

16. MARITIME STRATEGY AND MILITARY/ NAVAL BATTLES/CAMPAIGNS

Marks – 05

<u>S.NO</u>	<u>SUBJECT</u>	<u>SOK</u>
1	<u>Indian Maritime strategy</u> – Features of Indian Ocean and its strategic importance; Concept of maritime strategy in 21 century; Coast Guard multi-mission approach to maritime strategy.	B
2	<u>CG and Maritime strategy</u> – Role of Coast Guard in constabulary function in EEZ; EEZ surveillance; Security of offshore installation; Ports; Coastal approaches and other areas; Coast Guard as lead agency for maritime security; Sharing of responsibility with other partners viz. Navy, Port, Customs, Police, DG Shipping, Private sector and Public Sectors and District administration; Detection, Prevention, Protection and Deterrence as well as Consequence Management for drug and arms smuggling, Piracy, Terrorist activities and Environmental degradation	B
4	Indo-Pak conflicts – 1948, 65 and 71.	B
5	The Falklands War 1982	B
6	US campaign on Iraq	B
7	Kargil and its aftermath	B

REVISED SYLLABI **MCPE** **TECHNICAL OFFICERS**

1. The syllabus consists of 5 parts as under as mention below :-

Part I – Administration Part II – Technical Management Part III – Information Technology	}	Common for all Technical Officers
Part IV – For Marine Engineer / Air Engineer Part V – For Electrical / Air Electrical		

2. The part I,II & III are common for all Technical officers (Marine Engineering / Air Engineering/ Electrical / Air Electrical) . The Part IV related to both Marine Engineer / Air Engineer Officers . The part V is for both Electrical / Air Electrical Officers.

PART-I : ADMINISTRATION
(Max Marks – 20)

(Common for all Technical Officers)

(1) Staff Duties

Marks -10

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Forms of correspondence and service writing	B
2	Operational and Administrative organisation of the CG in general, material and repair organisation in particular	B
3	Knowledge of organisation of the Army ,Navy and Air force	C
4	Basic knowledge of research Development and inspection Organisation in ministry of Defence[DNRD,DWP, DPI(N), DRDO, DGQA etc.,	C
5	Basic knowledge of CG Act	C

(2) Ships Administration

Marks -05

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	A General knowledge of Regs. CG	B
2	Responsibility of Officers regarding public and Non Public Funds	B
3	Stores-permanent/temporary, demand/Supply Survey and Loss statements	B
4	Security –personnel and material security organisation Of ships	C
5	CBS-care, Custody and accounting musters, destruction, Loss of CBs/Keys	B
6	Duties of various departments on board ships	B
7	Sailors advancement rules, GCB award, Deprivation-Restoration, welfare agencies, leave rules, release routines, Travel entitlements, temporary/permanent duty	B
8	Summary punishment-warrant and non-warrant punishment, duties and privileges of S.O./EP, Board of Inquiry/Investigation	B

- 9 Action organisation-degree of readiness, watch and station bill, B
Action messing

(3). General

Marks –05

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Basic knowledge of civil works procedure	C
2	Decoration and awards in the Coast Guard	C
3	Industrial factories Act 1949	C
4	Geopolitics –Issues/Developments pertaining to Indian Ocean littoral and their impact on our security (Articles in the IDSA Journal and review would be useful reference)	B

(Contd.....Part-II)

PART – II : TECHNICAL MANAGEMENT

(Common for all Technical Officers)

(Max Marks – 40)

(1) General Management

Marks -10

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Management-Responsibility and functions, functions And role of good manager, Organisation-Necessity, Classification, type of organisation with reference to(CGHQ, RHQs and store depots)	B
2	Awareness of Indian Social, Political & Economic Environment in the industrial scene	C
3	Montreal protocol	C
4	MARPOL Act	C
5	Pollution, Environment control & Industrial effluent Disposal	C
6	ISO 9000, ISO 9001, ISO 9002, ISO 9001-2000	C

(2) Material Management

Marks -10

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Importance of material Management, Inventory, ABC Analysis, SAP Analysis, Material Handling, VED Analysis, Quality control, Duties of Maintenance, Management and Administration of store Depots .Preservation/Stowage of inventory.	B

(3) Management Techniques**Marks -05**

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Work study, Methods Improvement, Time study effect on working conditions and environments	B
2	Operations Research Important managerial applications, Elements of OR technique, simplex method	B
3	Operating systems, function of Information technology systems, Internet, Intranet, LAN, windows, NT, E-mail system, world wide web.	B
4	Value Analysis, Cost reduction and importance of value Analysis.	C
5	Network Analysis, Network as planning and control tool, Elements of critical path method and PERT	B

(4) Personnel Management**Marks -05**

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Functions of personnel management, Training motivation, leadership, Safety management, Management's responsibility for safety Organisation , Disciplinary action against civilian employees	C

(5) Production and Planning Techniques**Marks -05**

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Need for production and planning control organisation, use of Computers and PERT for production and planning	<u>C</u>

(6) Refit Organisational structure**Marks -05**

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Indian PSUs-viz MDL, GSL, GRSE, CSL, HSL upto Asst Manager level procedure for requisition work/spares/stores, Requisition of contractors / subcontractors on approval list ,Monitoring of progress of repair work at all levels	B
2	Financial Management, CSTs, PNCs Security/ Clearance of Bills, verification of costing viz. CIFU/FOB/TAXES/DUTIES, Liquidated charges etc. work of CDA/CGDA Organisation, Monitoring of Audit/Sanction of files, Bills, ledgers	B

PART-III : INFORMATION TECHNOLOGY

(Common for all Technical Officers)

Marks -10

(1) Introduction

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Familiarise with basic concepts of computer Basic I/O Systems Central Processing Unit Computer Organisation and System Software IT Tools & Application Understand utilizes of software packages like word processing, Power Point & .Access	A

(2) Operating System

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Introduction of Operating System Personal Computer Software	A

(3) Internet and Networking in Coast Guard

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Introduction to Internet Tools and Application Communicating on the Internet, Internet Security, E-mail	B

(4) LAN and Networking in Coast Guard

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	LAN infrastructure in Coast Guard Various components of LAN and types Overviews of Computer networks	B

(5) Introduction to Hardware

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Storage Devices, Printers, Modems, Scanners RAM, ROM, EPROM & PROM	C

PART – IV : MARINE ENGINEERING/AIR ENGINEERING
(For Marine Engineer / Air Engineer officers)

(Max Marks – 80)

Section – I : Damage Control and Fire Fighting

Marks -25

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Damage control apparatus and fittings and their uses	A
2	Knowledge of ship's stability, pumping and flooding in respect of ships in which served	A
3	Knowledge of precautions to be observed immediately before, during after the docking and undocking	A
4	Specific knowledge of method of fighting of various types of fires on board ships	A
5	Emergency supply arrangements and principle of load setting during the damaged conditions	B
6	Monitoring duties of technical personnel	B
7	Ventilation	B

(Contd.... Section II)

Section - II : MARINE ENGINEERING

Marks –55

1. Ship Construction and Machinery installation

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Salient features of High speed Interceptor Boats, SDBs, IPVs/ FPVs, OPVs, AOPVs, PCVs, ACVs/Hovercraft; their principle Dimensions, capabilities and limitations etc	C
2	Evolutions/activities in a new ship Construction, Machinery installation, commissioning and evolutions like D-448 & guarantee rectification. Responsibilities of classification societies etc	B
3	Selection of engineering machinery/ Equipment/ system for new construction ship. Role of CG technical officers	B
4	Salient features of shafts/GB/ME alignment, inclining experiment, HATS, Basin trial and SATS. Various types of stern tube arrangement in CG ships.	B
5	Typical Machinery layout in various classes of CG ships	C
6	Dual class certification and damage stability.	C

2. Main Propulsion Machinery

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Modes of propulsion of CG ships	A/C
2	Construction, operation and maintenance of various main propulsion machinery/Diesel Engines, Gas Turbines including out board engines	A/C
3	Combined main propulsion plants requirements, installation features	B
4	New trends in main propulsion plants in Indian and International markets	C
5	Tests & trials, preventive maintenance and procedures for different types of main propulsion	BC
6	Ship building and allied industries in India	C
7	IS 3046 and its application in marine environment	C

3. Power Generation

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Salient feature of different types of power generation prime-movers for shipboard use	C
2	Construction, operation and maintenance of various types of power generation plants on board different classes of ships, generators paralleling, loading/unloading	A/C

4. Gearing, Shafting & Propellers

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Principles of construction, operation and maintenance of gearing systems on board ships	A/C
2	Shafting and associated system for different class of ships; maintenance and operation	A/C
3	Maintenance and operation of fixed-pitch, controllable pitch propellers and CPP systems on board different classes of CG ships	A/C
4	Boats and ships with water jets, their installation, maintenance and operation	A/C
5	Repair of propulsion shafts, re-sleeving and gauging	A/C

5. Auxiliary Machinery

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Construction, operation and maintenance principles of HP Air Compressors, LP Air compressors, Steering Gear, Distilling/RO Plants, motor driven pumps, condenser, heat exchangers, SW coolers, domestic and deck machinery, sewage treatment plants, Oily Bilge water separators, Garbage Disposal units on board CG ships	A/C

6. Ship's Engineering Systems

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Construction (including materials of construction), Operation and maintenance features of ship board air, water (fresh, sea), lubricating oil, fuel, bilge and ballast, sewage systems on board CG ships	A/C

7. Refrigeration & Air Machinery

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Construction, operation and maintenance features of various types of shipboard refrigeration and air conditioning plants/systems	A/C

8. Machinery Controls

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Principles of operation and maintenance of pneumatic, hydraulic, electrical, electro hydraulic and electronic control systems and equipment on board ship Integrated Platform Management System(IPMS) and other systems Viz. Integrated Machinery Control System (IMCS/BDCS) their benefit and essential requirement.	A/C

9. Engineering Materials & Metallurgy

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Salient features of use of different materials of construction of engineering equipment/machinery /systems/including valves, pipeline, glands etc. in different environmental conditions such as high / low temperatures, corrosive liquids, fatigue, humidity etc. Engineering and science of composite materials	A/C

10. Oil, Fuel and Lubricants

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Range of oil, fuel & lubricants in CG service	C
2	Characteristic features/ properties of lubricating oil and fuel	B
3	Avcat system & testing	B
4	Maintenance of POL hygiene	B
5	Accounting of POL	B

11. NDT

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Principles of measurement, analysis and application of noise, vibration, shocks, for condition/health monitoring of marine machinery	C
2	Principles of NDT techniques in marine Engineering/inspection	C

12. Machinery Operation, Tests & Trials

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Salient features of engineering machinery/ equipment, systems Operation, routine and special tests, trials etc.	B/C

13. Engineering Documentation/Returns

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	PPM systems, logs, documents and returns connected with Engineering/Electrical Department	B

14. Machinery Spares/Stores

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Engineering /Electrical machinery ranging and scaling	B
2	Introduction of new machinery/ equipment in service	B
3	Procurement/replenishment/ supply of machinery equipment, Spares, stores including fuels and lubricating oils	C
4	Standardisation of engineering equipment and its impact on Inventory management	C
5	Procurement of spares/stores through ARD	C

15. Preventive Cum Predictive Maintenance Policy for CG Ships

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Maintenance philosophy for CG ships and equipment/Machinery	B
2	Responsibility of ships, BMU, CGRPS, store depots with regard to maintenance of ships	B
3	Refit/Refurbishment/Repair of engineering machinery/ equipment in BMUs/Dyds/Trade	B

16. Engineering Machinery of New Acquisition/ Construction ships

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Salient features of engineering machinery / Equipment pertaining to New acquisition / construction ships	C

17. Miscellaneous

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Ships upkeep-Hull preservation, Cathodic protection, ICCP and under water paint scheme	B
2	Corrosion prevention, Hull maintenance	A
3	Engineer Officers/Sailors training	B
4	Preservation of machinery/ equipment	B
5	Shelf life	C
6	Evaluation of machinery system under trial	C

PART – V : ELECTRICAL / AIR ELECTRICAL
(For Electrical / Air Electrical Officers)

(Max Marks – 80)

SECTION - I : Power/Gyro/Nav-Aids

Marks –45

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Service requirements of generators, various distribution systems and arrangements on ships.	A
2	Converted supplies and emergency supplies, and their applications/ service where used. The voltage and frequency standards for converted supplies.	A
3	Care, maintenance and handling of secondary batteries on board ships and their applications. Difference between Tubular, Maintenance Free and Sealed Maintenance Free Batteries.	A
4	Precautions/Procedures for connecting shore supply.	A
5	Importance/necessity of stabilized shore supply for ships. Specifications/fluctuations allowed in stabilized supplies.	A
6	Actions/Arrangements to maintain power supply under damage conditions in ships.	A
7	Three phase supply, its sequence of connections; and Star and delta connections	A
8	Methods of Paralleling/Synchronization of generators and load sharing	A
9	Load trials of alternators and details of acceptance carried out on the main alternators on installation on board new construction ships	B
10	Need for voltage regulators and principle of operation of various types of voltage regulation	B
11	Basic maintenance and care of power equipment	B
12	Electric shock and care of personnel.	B
13	Function of automatic voltage regulators on board ships. Description and working principles of AVRs.	A
14	Remote control and monitoring of power and general machinery in ships. Concept of power automation, Low Fire Hazard (LFH) cables and soft starters.	B
15	Precautions to be taken during dry docking with specific reference to earthing and bonding of ships.	A

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
16	Design criteria for ships power systems, diversity factor, utility factor, Load calculations, stability measurement methods.	B
17	Modern trends in frequency and speed control of motors and generators	C
18	Principle of EM Log. Different types of EM Logs in Service. Calibration procedure for EM Logs.	B
19	Free Running Gyro, conversion of a Free Running Gyro to a North Seeking Gyro Compass, Gyro failure alarms, Static Frequency Converters, Gyro supplies and various types of Gyros used in service.	B
20	Method of acceptance of gyro from a repair agency/firm after major overhauls/repairs. Various tests to be carried out together with specifications	A
21	(i) Principle of Ring Laser Gyro. (ii) Principle of GPS and DGPS	C
22	Salient features of Integrated Platform Management System/ Integrated Machinery Control System; Power Management System; Navigational Integrated Bridge System.	C
23	Considerations to be taken into account while determining lighting Supplies on board Coast Guard ships.	A
24	Test equipment for carrying out routines/condition based maintenance on board ships.	A
25	Philosophy of maintenance followed on board ships.	A
26	ICCP for steel and aluminums hulls - Principle and precautions.	A
27	Basic Radar equation and factors affecting range and accuracy. Factors affecting choice of scanner for Navigation/Surveillance/Fire Control Radar. Radar horizon.	A
28	Raster Scan displays, Multi function consoles, Advantages and disadvantages of using common antenna for X/S band radars; Multi function radar; ARPA displays. Principle of IFF/Radar Beacons; Principle of operation of RRB /SID and its applications.	A
29	Concept of In-circuit/Functional PCB Tester	A
30	Concept of MCT Glands.	B
31	Bathy – Thermograph.	B

(Contd....Section II)

SECTION – II : Communication EMI/EMC

Marks –25

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Propagation of radio waves and various factors affecting reception/transmission VLF/MF/HF/VHF and UHF.	B
2	Basic theory of Aerials and arrays.	B
3	Factors affecting sensitivity, selectivity and output of communication equipment	A
4	Principle of SATCOM/INMARSAT	B
5	Principle of frequency hopping and spread spectrum technology.	C
6	Diversity reception (Freq. and space).	B
7	Principle of data link and digital communication	C
8	Fundamentals of EMI/EMC/EMP including types of causes of interference.	C
9	EMI Hygiene on board ships.	C
10	Global Mobile System on communication	C
11	ECCM techniques.	C
12	Internal communication – Main Broad cast, Intercoms, Telephone Exchange, Sound Power Telephone etc.	B

SECTION – III : Weapons

Marks –10

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Testing and tuning, HATs and SATs of weapon system.	C
2	Preservation of weapon system, occasion, purpose and procedure.	B
3	Layout of a typical weapon system on board a ship.	B
4	Electro Optical Fire Control System (EOFCS).	B
5	Basics of Vertical Reference Unit (VRU).	C
6	Basics of Short Rapid Gun Mounting (SRGM).	B
7	30 mm Gun.	C
8	Basics of Thermal Imager.	C

Appendix 'C'
(Refers to Para 8)

REVISED SYLLABI
MCPE
LAW OFFICERS

PART – I : CG ADMINISTRATION

Marks –25

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	CGHQ Organisation with duties and function of Various Directorates	B
2	Accounting of Public Funds and Non-Public Funds	A
3	CG Law-Summary trial, requestment / defaulter, ROE	A
4	Information Technology	B
5	Various important Policies in force	B
6	Duties of various departments onboard ships	B
7	Basic knowledge of refit, types of refit, Security Organisation	C
8	Pay & Allowances of CG Personnel, Promotion rules, travel entitlement (Ty/PMT duties)	A
9	CB's, BR's, SP's, CD's – care, custody and accounting, Muster, destruction, loss of CB's and safe keys	B
10	Current Affairs	B

PART - II

1. COAST GUARD LAW

Marks –80

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Coast Guard Act 1978	A
2	Coast Guard (Discipline) Rules, 1983	A
3	Coast Guard (Condition of Service) Rules, 1986	A
4	Coast Guard (General) Rules, 1986	A
5	Coast Guard (Seniority and Promotion) Rules, 1987	A
6	Coast Guard (Ceremonial) Rules, 1988	A

2. CIVIL LAW

Marks –15

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	Indian Penal Code 1860 – Salient provisions relating to General Exceptions and Offences affecting human body.	A
2	Indian Evidence Act, 1872 – Salient Provisions	A
3	Constitutions of India- (a) Part XIV – Chapter I – Service Conditions 9Article 308 to 313) (b) Writ jurisdiction of Supreme Court and High Court (Article 32 and 226)	A
4	Prevention of Corruption Act, 1988	A

3. MARITIME LAW

Marks –30

<u>S.NO.</u>	<u>SUBJECT</u>	<u>SOK</u>
1	The Territorial Waters, Continental Shelf, Exclusive Economic Zone and Other Maritime Zones Act, 1976.	A
2	The Maritime Zones of India (Regulations of Fishing by Foreign Vessels) Act, 1981 and Rules framed there under (MZI Rules, 1982)	A
3	The Merchant Shipping Act, 1957 – Collisions, Accidents at sea and liability (Part X), Limitation of Liability (Part XA), Civil Liability for oil pollution damage (Part XB), Prevention and containment of pollution of the sea by oil (Part XIA), Wreck and Salvage (Part XIII)	A
4	The Water (Prevention and Control of Pollution) Act, 1974 – Definitions, Prevention and Control of Water Pollution (Chapter V), Penalties and Procedure (Chapter VII)	A
5	The Environment (Protection) Act, 1986 – Definitions, General Powers of the Central Government, Prevention, Control and Abatement of Environmental Pollution, and Miscellaneous provisions.	A
6	Third UNCLOS – Salient provisions	A
7	Maritime Conventions relating to maritime environment and prevention and control of marine pollution ratified by India	A

Appendix 'D'
(Refers to Para 11)

BREAKDOWN OF MARKS – ORAL BOARD
(GENERAL DUTY OFFICERS)

SL.	SUBJECT	MARKS
1.	Navigation	20
2.	Ship handling	10
3.	ROR	05
4.	SAR	10
5.	Pollution Response	10
6.	Seamanship	15
7.	Communication / Gunnery	10
8.	NBCD / Firefighting	05
9.	Aviation	05
10.	Maritime Law	10
TOTAL		100

Appendix 'E'
(Refers to Para 15(d))

**PROFORMA FOR VOLUNTEERING FOR THE
MID CAREER PROFESSIONAL EXAMINATION**

(All entries should be in block letters)

1. Rank, Name & No. :
2. Branch :
3. Ship /Establishment :
4. Seniority in service as on 01 Jan _____ : _____years ____ months
5. Whether first attempt :
6. If 'No' state number of attempts
so far made with years : Attempt Years Results

(Also include absence / withdrawal
after volunteering. If absence was
condoned quote authority)

7. Centre of Examination : Mumbai / Chennai / Port Blair
(Strike out if not applicable)

(Signature of the Candidate)

II

Forwarded

Commanding officer

III

Recommended

Administrative Authority