

**NPM,LOG/MRWF 33072 ANTI SUB MARINE WARFARE - IV**

(21Periods – 16 Hrs)

Max Marks 50

Pass Marks 25

Type of Exam – Written

Duration – 02 Hrs

| <b><u>PERIOD</u></b> | <b><u>TOPIC</u></b>   |
|----------------------|---|
| 01 – 02              | Introduction to ASW   |
| 03 - 06              | Current trends in ASW<br>a. Submarine Navies and ongoing trend<br>b. Submarine Air carriers – (Western & Chinese concept models)  |
| 07-10                | Submarine employment, offensive operations, defensive sub operations, sub shallow water operations, sub operational principles, submarine operating procedure, likely actions on detection by surface forces, popular myths about submarines, sub rescue vehicles |
| 11                   | Unconventional type Under Water Craft (Ex LTTE)<br>a. Human torpedo<br>b. Dummy submersible craft   |
| 12                   | SLN countermeasures against Ex LTTE UW craft<br>a. Tactics used by Fleet units<br>b. Tactics used by HarbourDefence units   |
| 13                   | Introduction and application of Under Water Acoustics (UWA) in ASW  |
| 14                   | Use of sound in ASW and its purposes  |
| 15                   | Speed of sound, Factors affecting sound speed – Temperature, Salinity and Depth   |
| 16                   | Introduction to SONAR, prime role of SONAR, Principle function of SONAR   |
| 17                   | Introduction to Mine Warfare, Sea mine and their method of activation   |
| 18 -19               | Introduction to port defense/ principal of seaward defense, methods of detection.<br>a. Typical HD plan.<br>b. Operation worldwar I/II & III  |

20-21

Case studies/Assignments

- a. Sinking of Argentine Navy ship General Belgrano by HMS Conqueror(Falkland War)
- b. Sinking of INS Khukri by submarine PNS Hangor (Indo-Pak war 1971)