

Lt. Nazare

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NCC GROUP HEADQUARTERS BELGAUM
CERTIFICATE 'B' EXAMINATION : 2010-2011

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NAVY (SD/SW) – SPECIAL SYLLABUS

AUTH – SNCCO NO 3/S/96 OF FEB 1996 & DGNCC, NEW DELHI LETTER
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DS SOLUTION

GENERAL INSTRUCTIONS

1. All questions are compulsory.
2. Use only ball point pen.
3. Answer only in space provided and in point form.
4. Cdt Must obtain 45% marks in each paper and 50% marks in aggregate to pass the examination.

PAPER IV - SPECIAL SYLLABUS

SINo	Subject	Written	Obta-ined	Prac-tical	Obta-ined	Total Marks obtained
1	(a) Naval Orientation & General Topics	52		--		
2	(b) Naval Communication	07		10		
3	(c) Navigation	25		15		
4	(d) Seamanship	28		20		
5	(e) Oceanic Wealth & Laws of Seas	13		--		
6	(f) Gunnery	26		--		
7	(g) Fire Fighting, Damage Control & Ship safety	34		10		
8	(h) Ship & Boat Modelling	27		30		
9	(j) Submarine	09		--		
10	(k) Meteorology	--		--		
11	(l) Winds, Tides & Currents	04		--		
12	(m) Search & Rescue	09		--		
13	(n) Anti Submarine Warfare	09		--		
14	(o) Swimming (Compulsory)	07		15		
		250		100		

PAPER I – NAVAL ORIENTATION AND GENERAL TOPICS

MARKS: 52

NAVAL ORIENTATION

1. Fill in the blanks (10)

- (a) Indian Navy has 02 Fleets, Eastern and Western, they are commanded by Flag Officers of the rank of Rear Admiral.
- (b) The Navy has been divided into four Naval commands, they are commanded by Flag Officers of the rank of Vice Admirals
- (c) Fleet is a group of various types of ships and aircraft grouped together for conduct of operations.
- (d) The chief of the Naval staff is Admiral Nirmal Kumar Verma
- (e) Training command of Indian Navy is Southern Naval Command
- (f) The right hand side of a ship, when facing forward is known as the STBD and Left Hand of the ship is known as the port side
- (g) The NHQ (Navy) is situated at New Delhi.
- (h) Colours is the ceremony of hoisting National flag on the jack and Naval Ensign on the Ensign staff daily at 0800 hrs in harbour.
- (i) The ship hospital is the name as Sick Bay
- (j) Western Naval Office is located at Mumbai

2. State the True or False. (10)

- (a) Supreme Commander of the Indian armed force is Defence Minister. F
- (b) Navy Day is celebrated on 4th December. T
- (c) Base port of INS Virrat is New Delhi. F
- (d) FOC- in- C is stand for Flag Officer Commanding in Chief. T
- (e) The Commanding Officer of Naval Ship is received by the Side pipe. T
- (f) Flag Officer Andaman & Nicobar Islands Vice Admiral T
- (g) NCC Day is celebrated on the 4th Sunday of November T
- (h) The Motto of NCC is Unity and Discipline T
- (i) Southern Naval Command is Located in Delhi F
- (j) Duration of the Side pipe is 12 seconds T

3. State the equivalent ranks in others service. (10)

<u>ARMY</u>	<u>NAVY</u>	<u>AIR FORCE</u>
General	Admiral	Air chief Marshal
Major General	Rear Admiral	Air vice Marshal
Brigadier	Commodore	Air Commodore
Captain	LT	Flight LT
Sepoy	SEAI	LACII

4 Write Down the full forms of the following (05)

- (i) CNS - Chief of the Naval Staff
- (ii) FOC -in- C EAST-Flag Officer Commanding Oin-Chief
- (iii) INHS-Indian Naval Hospital Ship
- (iv) CO - Commanding Officer
- (v) INAS-Indian Naval Air Station

5 Match the following (05)

- | | |
|-----------------|---------------------------|
| (a) INS Arihant | (C) Anchor |
| (b) INS Chilka | (D) Landing Craft |
| (c) 1 knot | (E) Nuclear Submarine |
| (d) INS Magar | (B) Basic Training Base |
| (e) AC-17 | (A) 1.853 mile |

6 Write down any five Indian Naval Hospital ship (05)

- (1) INHS Patanjali (2) INHS Asvini (3) INHS Dhanvantri (4) INHS Kalyani
- (5) INHS Nivarani

7 Write names any Five type of ASW Ships of Indian Navy. (05)

- (a) Ganga(b) Gomati(c) Godavari(D) betwa (E) Beas

8 Indicate city in which Headquarter of the following in situated (02)

- a. Southern Naval Command ____ Kochi
- b. Eastern Naval Command ____ Visakhapatnam

NAVAL COMMUNICATION

MARKS: 07

9. Write the full form of following :- (02)

- (a) MSO-Main Signal Office
- (b) EWO-Electronic Warfare Officer
- (c) LRO- Leading Radio Operator

10. Write down the Morse code of the following :- (02)

- (a) CHARLIE
- (b) JULIET
- (c) ROMEO

11 List four occasions when boats wear Naval Ensign. (02)

Ans :-

- 1) In foreign water from dawn to dusk.
- 2) When ships are dressed overall.
- 3) When carrying OOG.
- 4) When President embarked.
- 5) At half mast when carrying corps.

12. Write any two types of communication used in Indian Navy. (01)

Electronic & Tactical

NAVIGATION

MARKS: 25

13 Choose correct answers :- (05)

- (a) The instrument by which depth of water is measured
(i) Log (ii) Compass (iii) **Echo Sounder**
- (b) Speed and distance traveled by the ship through water is measured by
(i) Sextant (ii) **Log** (iii) Chart
- (c) Range and direction of an object at sea is measured by
(i) Plotting table (ii) Chart (iii) **Radar**
- (d) With the help of sound waves, the direction and range of objects are obtained from
(i) Compass (ii) **Sonar** (iii) Radar
- (e) Ships position is plotted on
(i) **Chart** (ii) Sextant (iii) Sonar

14 Write short note on :- (05)

(a) **Nautical Mile**-This is standard fixed length of 1852 meters. It's correct abbreviation is NM. The distance given in Admiralty distance table and in ocean passage of the words are in International Nautical Mile.

(b) **Compass** -This instrument may be considered as a bar magnet freely suspended in the horizontal plane. It turns and settles with one end pointing approximately to the north. It will not point to the true north because the earth's geographical or true poles do not coincide with magnetic poles towards which the ends of the compass needle are attracted.

15 Write short note on Longitude & Latitude. (05)

Ans :- Latitude-The latitude of a place is the angle, which is perpendicular to the earth surface at the place makes with the plane of the equator. It is measured '0' deg to '90' deg North or South of the equator.

Longitude-The longitude of a place is the angle between the plane of the prime meridian and the meridian of the place measured from '0' deg to '180' deg East or West of Greenwich.

16 What do you understand by Navigation & Direction ? (05)

Ans :- Navigation is the process of planning and carrying out the movement, transport of all kinds from one place to another by sea. The navigation of all waterborne craft is called marine navigation. We can say that the navigation is the business of conducting a craft as it moves about its way.

17. What do you understand by Ship's Log ? (05)

Ans :- Ship's log is an instrument fitted onboard ship for knowing speed of the ship. It is fitted in the log compartment onboard ship below water line and display unit of the log is fitted in bridge. Ship's log will not show speed when engines are going astern.

SEAMANSHIP

MARKS: 28

18. Fill in the blanks :- (08)

- (a) The wooden boats used in Navy are **Carvel** or **Clinker** builds.
- (b) Anchor is a hook made of **Iron**
- (c) Pulling Boat is pulled by **Oars**
- (d) Reef Knot is used **To join two equal size of** ropes
- (e) Manila is a **Natural Cordage** rope
- (f) Polypropylene is **Man made** rope
- (g) SWR stands for **Steel Wire** rope
- (h) Clove hitch is used for **To secure rope to a spar**

19. Write the various types of anchors used in Indian Navy. (03)

Ans :- (a) Admiralty pattern (b) Admiralty standard stockless
(c) Admiralty class – 14 (d) AC 16 and AC 17
(e) Dan forth (e) CQR

20. Write down 05 parts of ship (03)

(a) Foxle (b) Bridge (c) Helo deck (d) Flag Deck (e) Quarter Deck

21. Draw diagrams of Anchor and name its parts. (04)

22. Write a short note on RAS. (04)

The term RAS means Replenishment at sea. It is done at sea for restocking of a ship with men, ammunition (including missiles), provisions, stores, fuel & water. It is described as replenishment between one ship and another when both are under way at sea. This is used for fleet to operate for longer periods away from shore bases. Replenishment must be accomplished in the shortest possible time consistent with safety because the ships engaged are restricted in their movement and therefore more vulnerable to attack.

23. What is a Berthing Hawser?

(03)

Ans:- Berthing hawsers are ropes and used to secure a ship alongside the jetty. Minimum four berthing hawsers are used. The names of berthing hawsers used to secure a ship are known Head Rope, Forward spring, Aft Spring and Astern Rope

24 Write down 10 parts of Whaler boat.

(03)

Ans :- Gunwale, Caping, Rubber, Kill box, Drop kill, Thaward knee, Forward buoyancy tank, Benches, Life line, Crutch post

OCEANIC WEALTH AND LAWS OF SEA

MARKS: 13

25 State True or False :-

(08)

- (a) If there is decrease in temperature in a thermometer it is an indication possibility of cyclone. **True**
- (b) The highest High Water is called Spring. **True**
- (c) Bad sea state is caused by high winds. **True**
- (d) Sound travels faster in air than in water. **True**
- (e) Chronometer is used to measure the wind speed. **False**
- (f) All economic and marine wealth of our EEZ belongs to our country. **True**
- (g) Unauthorised entry of any vessel in territorial water is prohibited. **True**
- (h) Coast Guard prevents smuggling and renders assistance to customs when needed. **True**
- (j) Coast Guard does not render assistance for search and rescue operation of ships and vessel in distress. **False**
- (k) The effect of sun on earth is greater than moon. **False**

26. Write short notes on the following :-

(05)

(a) **Territorial Sea** : Territorial sea is sea or area of that country which is a part of that particular country . Which is the EEz of that nation. OR We can say it is ownership of that Nation . No one can enter without informing to that country.

(b) **EEZ** EEZ is exclusive economic zone. It is area of the sea which is up 90 to 110 KN of the coast of the particular country. Inside the EEZ no ship or vessel is allowed to enter prior permission of that country like warship movements or fishing or anchoring. EEZ is economical area of that particular country.

GUNNERY

27. Elaborate the following :-

MARKS: 26

(10)

- (a) INSAS-Indian Small Arms System
- (b) HMG - Hand Machine Gun
- (c) SAM - Surface to Air Missile
- (d) LMG- Light machine Gun
- (e) SSM -Surface to Surface missile

28 Name any five Guns fitted on board Naval ships. ? (05)

Ans :- AK 100, AK 176, AK 230, AK 630, SRGM, 4.5 Gun

29 List any five missiles fitted onboard Indian Naval Ship.

Ans :- P20, P21, P22, URAN, BRAHMOS , MAGIC MATRA , Barak,

30 Write 10 parts of a 7.62mm SLR. (05)

Muzzle, Barrel, Gas plug, Gas regulator, Trigger, Trigger Guard, Pistol grip, Magazine, But, But plate

31 Write down safety rules of Small Arms (06)

- (a) Check the weapon when taking & handing over to armoury.
- (b) Never point a weapon towards anyone
- (c) Never play with the weapon
- (d) Put safety lever to safe except going to open fire at range.
- (e) Loading/Unloading of weapon is to be as per authorized as per drill

FIRE FIGHTING, DAMAGE CONTROL AN SHIP SAFETY

MARKS: 34

32. State True or False :-

(10)

- (a) AFFF extinguisher can be used for electrical fire. **True**
- (b) DCP extinguisher can be used for general fire. **False**
- (c) The process of removing Oxygen to extinguish fire is known as starving. **False**
- (d) The weight of CO2 cartridges in AFFF extinguisher is 120 gms. **True**
- (e) The process of removing burning material to extinguish fire is known as cooling. **False**
- (f) The composition of AFFF extinguisher is 8.460 Ltrs water and 0.550 AFFF solution. **False**
- (g) CO2 extinguisher can be used for general fire. **False**
- (h) A, B, C are the water tight markings. **False**
- (j) A, M, R are the gas tight markings. **True**
- (k) FB5X is a portable fire extinguisher. **False**

33. Expand the following :-

(10)

- (a) AFFF - Aqueous Film forming foam
- (b) NBCD - Nuclear biological chemical defence and damage control including fire fighting
- (c) ELSA - Emergency life saving apparatus
- (d) BASCCA - Breathing apparatus self contained compressed air
- (e) DCP - Dry chemical powder

34. Can we use AFFF extinguisher on Electrical Fire & how ?

(02)

Ans :- Yes, we can use AFFF extinguisher on Electrical fire in case of extreme emergency if CO2 extinguishers are not available. Tilt the AFFF extinguisher upside down and operate it. On operating only CO2 will be released from AFFF extinguisher. It is not practicable to use AFFF extinguisher on electrical fire, in case of emergency only it is to be used.

35. What are the principle of extinguishing of fire. ? (03)

Ans :- Starving, Smothering & Cooling

36. How many types of fire. ? (02)

Ans :- Five – General fire, Electrical fire, Gas fire, Oil fire, Metallic fire

37. What are precautions you will take while operating CO2 extinguisher? (02)

Ans :- 1) Do not hold metal portion as there is a chances of cold burn.
2) While operating keep your face clear
3) Release the gas as much as required. Close the opening cap of the extinguisher after use/fire extinguishes.

38 What are the contents of AFFF extinguisher ? (02)

Ans :- 120 Gm CO2 Cartridge, 8.450 Ltr Water, 0.550 Ltr AFFF compound.

39 What is Fire? What is fire tetrahedron of Fire? (03)

Ans :- Fire is the combination of Heat, Oxygen and burning material at proper ratio.

Tetrahedron –Heat , Fuel , Oxygen, Chain Reaction.

SUBMARINES

MARKS: 09

40. Write the names of five submarines of Indian Navy . How many nuclear submarine Indian Navy has and its Name ? (05)

Ans :- Shishumar Sindhughosh Shankus, Shalki , Sindhukirti, Sindhu vijay.

Nuclear submarine is –INS Arihant.

41. Name two types of weapons carried onboard submarines and their utility? (04)

Ans :- Torpedo and Strella missiles are carried onboard submarines.

Torpedo Torpedoes are expelled from these tubes by compressed air, submarines fires torpedoes from fixed below water tubes. On firing the torpedoes are expelled from the tubes by compressed air. Spare torpedoes are carried in ready racks near the tubes.

Strella Missile It is similar to stinger missile. Basically it is tube type and firing mechanism is fitted with tube itself. We may hit the target upto the range of 4 Km. Can fire on shoulder and also this missile is having Auto pilot and Gyro and INFRA RED Homing head.

SEARCH & RESQUE

Marks: 09

42. State True or False :- (05)

- (a) A boat used for rescue of a personnel is called a sea boat. **False**
- (b) Sea boat crew are nominated at the time. **False**
- (c) SAR is stands for search & Rescuel. **True**
- (d) Aircrafts are also used for SAR operators. **True**
- (e) The Morse Code for passing a distress signal is 'SOS' **True**

Ans :- Life raft, Life boat, Life buoys, life jacket.

(b) Write the contents of life raft.

Ans :- Topping up valves, deflation plugs, leak stoppers, topping up pump, rescue quoits and lines, handbook for survivors (BR 1329), Heliograph, sponges, seasickness tablets, floating knives, water pockets, drogues or sea anchor, distress signal, first aid kit, survival suits and miters, flashing beacon, rations, glucose sweets 351X34 gm packets.

WINDS, TIDES AND CURRENTS

MARKS: 04

44 (a) Tides are the result of gravitation attraction of the **Sun** and **Moon** on the earth?
(b) The ocean is cover nearly $3/4^{\text{th}}$ of the earth

45. Write types of tides & their Causes. (02)

Ans:- High tide & Low tide. Tides causes due to gravitation attraction of the **Sun** and **Moon** on the earth?

SHIP MODELLING

MARKS: 27

46. What wood is commonly used for Ship Modeling? (02)

Ans:- Yellow pine , red cedar , African White wood, Mahogany, Teak and Balsa Wood commonly used in ship modeling.

47. What is the use of Pins in Ship Modeling.? (02)

Ans:- Pins are used to joins frames and blocks together in ship modeling.

48. What is the use of sand paper? (02)

Ans:- To give finishing to the model or its parts.

49. What is NC putty ? Where it is used ? (02)

Ans:- NC putty is Nitro Cellulose (NC) based lacquer in form of powder it is used to give smoothness to the surface of model, also it is used to fill the gap if any to the model.

50. Why is the keel of sail boat made long and heavy? (02)

Ans:- Beause total weight of the model is on keel due to this keel always to be strong and one piece.

51. Write any five tools used in ship modeling ? (03)

Ans:- Measuring Tools, Chiesels, Cutting Tools, Boring Tools, Vice and clamps.

52. list out types of joints used in carpentry ? (03)

Ans:- Lap Joint, Halving Joint, Martice and tendon joints, Bridle Joints, Tongue and groove Joints.

53. Why lead weight is used in ship modeling ? (02)
Ans:- After completion of ship model equivalent weight is to be there in correct position and check that the hull floats true . If after completion of model ballast is required to bring the model down to her marks or to correct trim. For that lead weight is used.

54. What is the use of metal paste ? (02)
Ans:- Metal paste is used to join two metal parts together in ship modeling.

55. Why fevicol is not used in ship modeling ? (02)
Ans:- Fevicol is not used in ship modeling because fevicol will loss its property of stickness in presence of water. It will washed out due to water.

56. Why balsa wood be preferred in ship modeling ? (02)
Ans:- Balsa wood is most suitable because it is soft and does not absorb the water.

57. Name the types of ship model ? (03)
Ans:- a) Solid Model, b) Working Model, c) Sailing Model.

ANTI SUBMARINE WARFARE (ASW)

58. Write the names of any three ASW weapons along with the Indian Naval ships that carry them. (05) **MARKS: 09**

Ans :- 1) Torpedo tube 2) Torpedo launcher 3) Depth charger
4) RL 1200 Rocket launcher

59. State True or False. (04)

- (a) Range of a Submarine is obtained through Radio transmission? **True**
- (b) In SONAR detection electrical energy is converted into sound energy? **True**
- (c) The equipment through which the transmission is made for SONAR detection is called transducer? **True**
- (d) Modern submarine can launch missiles also **True**

SWIMMING

MARKS: 07

60. Write down types of swimming? (03)

Ans :- Free style, Butter fly, Breath stroke, Back stroke

61. What Precautions you will take prior to entering in swimming pool? (03)

Ans :- 1) Should be medically fit.
2) Take bath before jumping into swimming pool.
3) Make sure you had carried your swimming trunk with you.
4) Should not have any skin diseases.

62. What are the advantages of swimming? (01)

Ans :- 1) You can save yourself as well as others.
2) You can keep yourself fit by daily swimming.
3) Swimming is the best exercise for whole body movement.
