



Suomen Navigaatioliitto ry

Tot. points

EXAMINATION IN COASTAL NAVIGATION 11.12.2015

The points given for each correct answer is marked next to the problem. Maximum points are 30. The limit for passing the examination is 15 points. Use the enclosed chart, tide table and deviation card.

Name _____ Teacher _____

Sos. Sign _____ Examin site _____

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Completion of EXAMINATION IN INSHORE NAVIGATION

(Place, month and year) _____

Before you start, read this introduction!

The journey is made with a power driven 12 m long seaworthy vessel. The vessel is equipped with i.a. a standard compass, a fixed spare compass, maritime VHF, GPS, chartplotter and radar.

Weather forecast for shipping the 15th of June 2004 at 12.50. Forecast until tomorrow morning: Gulf of Finland: Winds between North and East 2-5 m/s. Good visibility.

Variation = 6° E, if not otherwise mentioned.

DEVIATION CARD STANDARD COMPASS

CC	Dev	MC
0°	-1°	359°
10°	-1°	9°
20°	0°	20°
30°	+1°	31°
40°	+2°	42°
50°	+4°	54°
60°	+4°	64°
70°	+3°	73°
80°	+2°	82°
90°	0°	90°
100°	-1°	99°
110°	-3°	107°
120°	-4°	116°
130°	-6°	124°
140°	-7°	133°
150°	-8°	142°
160°	-8°	152°
170°	-6°	164°
180°	-4°	176°
190°	-3°	187°
200°	-1°	199°
210°	0°	210°
220°	+1°	221°
230°	+3°	233°
240°	+5°	245°
250°	+6°	256°
260°	+8°	268°
270°	+9°	279°
280°	+8°	288°
290°	+6°	296°
300°	+4°	304°
310°	+3°	313°
320°	+2°	322°
330°	+1°	331°
340°	0°	340°
350°	-1°	349°
360°	-1°	359°

1. On the 15th of June 2004 at 18.50 you are in the position 59°29,5'N 023°07,5'E. You are setting course towards the lighthouse Osmussaar.

a) What is the speed and direction of the tidal stream?

b) What is your compass course assuming that the tidal stream is constant during the whole voyage? The leeway caused by the North East wind is 7°. Your speed is 7 knots.

c) When will you be 2 M from the Lighthouse?

2 p

3 p

1 p

2. On the 16th of June 2004 at approximately 06.30 you are approaching Hanko harbour. The draft of the vessel is 2.2 m. The wanted Under Keel Clearance is 1.0 m. The depth in the harbour is 1.2 m according to the chart.

At what time is it possible to enter the harbour?

1 p

3. a) Your Dead Reckoning position is $59^{\circ}56,0'N$ $025^{\circ}27,5'E$. At 11.50 the relative bearing to the lighthouse Kalbådagrund is 45° to the starboard side and at 12.20 the same lighthouse is abeam on starboard side. Your compass course is 350° and your speed is 6 knots. What is your position at 12.20?

2 p

3. b) Your Dead Reckoning position is $60^{\circ}00,0'N$ $025^{\circ}04,7'E$. When crossing the 11.0 m fairway with the leading beacons west of Eestiluoto, you are taking a bearing along the leading line using the spare compass. The compass bearing is 017° . The spare compass shows $CC=120^{\circ}$. What is the deviation of the spare compass at this compass course?

1 p

4. Your Dead Reckoning position is $59^{\circ}57,0'N$ $025^{\circ}09,0'E$. Your $CC=230^{\circ}$ and your speed is 6 knots. At 14.45 the relative bearing to lighthouse Helsinki is 35° to the starboard side and at 15.15 70° to the starboard side. What is your position at 15.15?

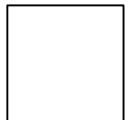
3 p

5. Your Dead Reckoning position is $59^{\circ}42,0'N$ $025^{\circ}31,5'E$. Your $CC=260^{\circ}$ and your speed is 12 knots. At 16.30 you are observing the lighthouse Juminda in compass bearing 151° and at 17.00 the lighthouse Keri in compass bearing 236° . The bearings are taken with the standard compass. What is your position at 17.00?

3 p

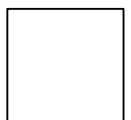
6. Your Dead Reckoning position is $59^{\circ}48,5'N$ $024^{\circ}17,9'E$. Your $CC=050^{\circ}$ and your speed is 8 knots. At 18.00 you observe the lighthouse Porkkala in compass bearing 340° and at 18.30 in compass bearing 265° . The bearings are taken with the standard compass. What is your position at 18.30?

2 p



7. Your Dead Reckoning position is $60^{\circ}03,5'N$ $025^{\circ}27,0'E$. Your steer $CC=049^{\circ}$. You are observing the lighthouse Kalbådagrund in compass bearing 130° and the lighthouse Porvoon Majakka in compass bearing 040° . The bearings are taken with the standard compass. Determine your position!

2 p



8. A windless night your Dead Reckoning position is $60^{\circ}03,0'N$ $025^{\circ}03,0'E$ and you steer $CC=093^{\circ}$. You plan to reach the 9 m fairway and follow the fairway to Ytter Tjärhällen.

a) Draw the route plan for navigating with radar on the examination chart. You use the VRM and EBL functions of the radar for the navigation.

1 p

b) How do you determine the waypoints and how do secure that you stay on course?

1 p

c) Give the coordinates for the waypoints.

1 p

9. Check the correct alternative:

Right Wrong

a) The shape of the seabed does not affect the properties of waves.

1 p

b) Rainshowers and snowfall are clearly visible on the radar display.

1 p

c) The wave height is given in meters.

1 p

d) The gyrocompass depends on the earth's magnetic field.

1 p

10.

a) How is advection fog formed?

1 p

b) Explain shortly what the ship radio station license is.

1 p

c) How is the sea breeze developed?

1 p