

V26/S01047/EE/20160722

Time : 3 Hours

Marks : 80

Instruction :

1. All Questions are Compulsory.
 2. Each Sub-question carry 5 marks.
 3. Each Sub-question should be answered between 75 to 100 words. Write every questions answer on separate page.
 4. Question paper of 80 Marks, it will be converted in to your programme structure marks.
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1. Solve any **four** sub-questions.
 - a) What is a Polar front? 5
 - b) What is a frontal depression and by which other names is it known? 5
 - c) Explain with diagrams in a frontal depression - Cyclogenesis and open stage. 5
 - d) Explain with diagram in a frontal depression - Occluded stage and dissolving stage. 5
 - e) What is Beaufort Wind Scale? 5
2. Solve any **four** sub-questions.
 - a) What is the difference between a frontal depression and a non-frontal depression? 5
 - b) What is a tropical depression? 5
 - c) What is a Thermal Low? 5
 - d) What is a Lee depression? 5
 - e) What is a Polar air depression? 5
3. Solve any **four** sub-questions.
 - a) Explain with diagram a cold front. 5
 - b) Explain with diagram a stationary front. 5
 - c) List the publications supplied by India Meteorological Department to selected and supplementary ships? 5
 - d) What is Annex V of MARPOL and how it is complied with on board a vessel? 5
 - e) What is Annex III of MARPOL and how it is complied with on board a vessel? 5

4. Solve any **four** sub-questions.

- a) If in Northern Hemisphere you find your vessel in dangerous quadrant of a storm, what action will you take to avoid the storm? 5
- b) Explain in brief what precautions are taken on board to prevent pollution from Garbage at sea? 5
- c) What is a storm surge or a tidal wave with respect to storms or cyclones? 5
- d) From a vessel on a course of 245° at 13 knots, the apparent wind was observed to be 130° at 16 knots. Find the direction and speed of true wind. 5
- e) Code the following report : 5

Ship : 9VGI, Position 21 deg 19 min N, 123 deg 20 min E, Course made good for last 3 hrs 035 deg at 14 knots, visibility : 1 KM, wind : 072 deg estimated at 30 knots, Pressure : 1004.5 mb, Tendency : -3.5 mb , Barograph trace : decreasing, GMT 14d 06h 10m,

Temperature : dry 21.5 deg C, Wet 18.0 deg C, Sea 25.5 deg C,

Clouds : overcast sky with few blue patches, low clouds 4/8 of sky, Cu of strong vertical extent, Ac in chaotic sky.

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Weather : present - poor visibility due to patches of shallow fog.

Past weather - Thunderstorms with rain

Sea : period 08 seconds, height 2.5 meter, swell : from 080 deg, period 8 secs, height 03 meters.

