



Name :

Roll No. :

Invigilator's Signature :

CS/BNS/SEP.SUPPLE/SEM-5/BNS-505/2012

2012

ENVIRONMENTAL SCIENCE-III

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following :

10 × 1 = 10

- (i) An air mass originating over tropical oceans is called
 - a) tropical maritime b) tropical continental
 - c) polar continental d) polar maritime.
- (ii) Between which latitudes do the trade winds blow ?
 - a) 30° S and N latitudes b) 30° N and S latitudes
 - c) 45° S and N latitudes d) 45° N and S latitudes.
- (iii) In a cyclone the lowest pressure is found in the
 - a) centre b) outer edge
 - c) warm front d) cold front.
- (iv) Air temperature varies with
 - a) the altitude above sea level
 - b) the season of the year
 - c) the latitude or distance from the equator
 - d) all of these.



- (v) Temperature and moisture characteristics are modified in a warm or cold air mass due to
- pressure changes in the air mass
 - movement of the air mass
 - the heterogeneous nature of the air mass
 - upper level atmospheric changes.
- (vi) What is the direction of rotation of tropical cyclones, tropical storms and hurricanes in the Northern Hemisphere ?
- Clockwise and outward
 - Counterclockwise and inward
 - Counterclockwise and outward
 - Clockwise and inward.
- (vii) What area is known as the "Great Pacific Garbage Patch" ?
- | | |
|-------------------|------------------------|
| a) Baja Mexico | b) Los Angeles |
| c) Mariana Trench | d) North Pacific Gyre. |
- (viii) What is watershed ?
- A place to store water
 - An area of land that drains into a particular lake or river
 - An area of sandy soil that collects pollutants
 - Stationary wetlands that act as a sponge.
- (ix) What is point source pollution ?
- Pollution that occurs over a wide area and enters streams in water that runs off from fields, parking lots and other surfaces
 - The process of filtering pollutants out of fresh Water
 - Pollution that can be traced to a particular place, or location
 - Pollution that results in many pollutants coming together.



- (x) Which vessels will be subject to MARPOL Annex VI surveys ?
- Ships of 400 gross tonnage or above
 - Ships of 600 gross tonnage or above
 - ships of 300 gross tonnage or below
 - Any one of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

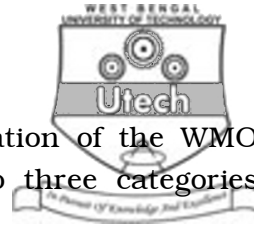
- State the classification of air masses.
- What are the factors that determine the properties of air mass. Differentiate convergence from divergence air mass.
- Name the various annexure adopted under MARPOL73/78
- Write short notes on any one of the following :
 - Oil record book
 - Garbage record book.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

- Draw the frontal symbols which are used on weather maps. Define cold and warm front. Draw a proper diagram of "Frontal depression" and explain its origin and life cycle. What is meant by frontolysis ? Which is front often referred to as line squall ? $4 + 2 + 7 + 1 + 1$



7. a) In accordance with the recommendation of the WMO, vessels of the COF are divided into three categories. Explain each of them.
- b) Define synoptic statistical and numerical methods of weather forecasting.
- c) Write briefly warning signs of an approaching TRS.
8. Decode the following report :

BBXX	ATVH	10123	99408	30492	41398
62828	10143	20082	40084	56028	76364
84364	22234	00175			

15

9. Define the following : 5 × 3
- (i) Ozone depleting substances
 - (ii) Sludge oil
 - (iii) Shipboard incinerator
 - (iv) Sox emission control area
 - (v) Control of volatile organic compounds.
10. Describe as per your comprehension regarding pollution prevention plans : 3 × 5
- (i) Garbage management plans
 - (ii) SOPEP and methods for cleaning shipboard oil spills
 - (iii) Prevention of pollution by harmful aquatic organisms in ballast water.

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