

## UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS General Certificate of Education Ordinary Level

MARINE SCIENCE 5180/02

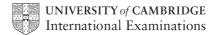
Paper 2 SPECIMEN MARK SCHEME

For Examination from 2014

1 hour 30 minutes

## **MAXIMUM MARK: 60**

This document consists of 4 printed pages.



1 (a) Axes labelled correctly (species and number caught per hour or catch rate); Bars labelled / key; Each bar plotted correctly (5 marks); [7] **(b)** 214 ÷ 5; = 42.8 fish per hour; [correct answer only gains both marks] [2] [1] (c) (i) Haddock; (ii) Lemon sole; [1] (d) Any two of: References to differences in stocks / numbers; Reference to differences in habitat of these fish; Reference to seasons; Reference to mesh size of net; [2] (e) Damage to corals / eq; Catch non-target species / eq; [2]

[Total: 15]

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2 (a) Any three of:
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Reference to tourism / diving / fishing; Reduce erosion of shore; Dissipate energy of waves / eq; Protect anchorages; Create waves for surfing; [3] (b) (i) Concrete; Steel; [2] (ii) Steel balls / bridge rubble / iron and steel railway engine / steel tower / concrete telephone poles / concrete boxes / steel girders; [1] (c) (i) Any two of: Reference to availability; Heavy (so sinks); Unlikely to move during a storm; Large surface area (for attachment of organisms); Hollow (to provide habitat); [2]

(iii) South Carolina; [1]

(iv) Aluminium is lighter / less dense than steel ;

Create new habitat for marine organisms / eq;

Aluminium corrodes in sea water;

Aluminium is more expensive than steel / eq;

Reference to foam making them buoyant;

(v) Engines contain fuel / oil ;

(ii) 291;

Fuel / oil could leak out ;

Reference to oil floating / moving away;

Causing pollution;

Harmful to marine organisms / eq; [3]

[Total: 15]

[1]

[2]

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(a) Carbohydrates;
    Provide energy;
    Fats / oils / lipids;
    Provide energy / insulation / buoyancy;
    Proteins;
    Used for growth / repair / body building / eq;
    Vitamins:
    Named example (of vitamin) and function;
    Minerals
    Named example (of mineral) and function;
                                                                                            [8]
(b) (Fish muscle provides)
    Water;
    (Small amounts of) glycogen / carbohydrate;
    Proteins;
    Fats / oils / lipids;
    Vitamins:
    Named example of a vitamin;
    Minerals;
    Named example of a mineral;
                                                                                            [7]
                                                                                    [Total: 15]
(a) Reference to exoskeleton / external skeleton;
    Chitin;
    Hardened with calcium;
    Have jointed legs / limbs / appendages;
    Five pairs;
    Carapace:
    Abdomen;
    Pincers / eq;
    Walking legs;
    Antennae;
                                                                                            [8]
    Compound eyes;
(b) Separate sexes / male and female;
    Males produce sperm / females produce eggs;
    Male transfers spermatophore to female;
    Reference to external fertilisation;
    Fertilised eggs held by female;
    Planktonic larvae;
    Reference to growth by moulting;
    Form miniature adults;
    Which settle on substrate / eq;
                                                                                            [7]
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[Total: 15]

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