

Immune system

Question Paper

Level	Pre U
Subject	Biology
Exam Board	Cambridge International Examinations
Topic	Animal physiology
Sub Topic	Immune system
Booklet	Question Paper

Time Allowed: 23 minutes

Score: /19

Percentage: /100

Part - B

1. One laboratory method for investigating possible evolutionary relationships between mammals uses immunology and is summarised in Fig. 3.1.

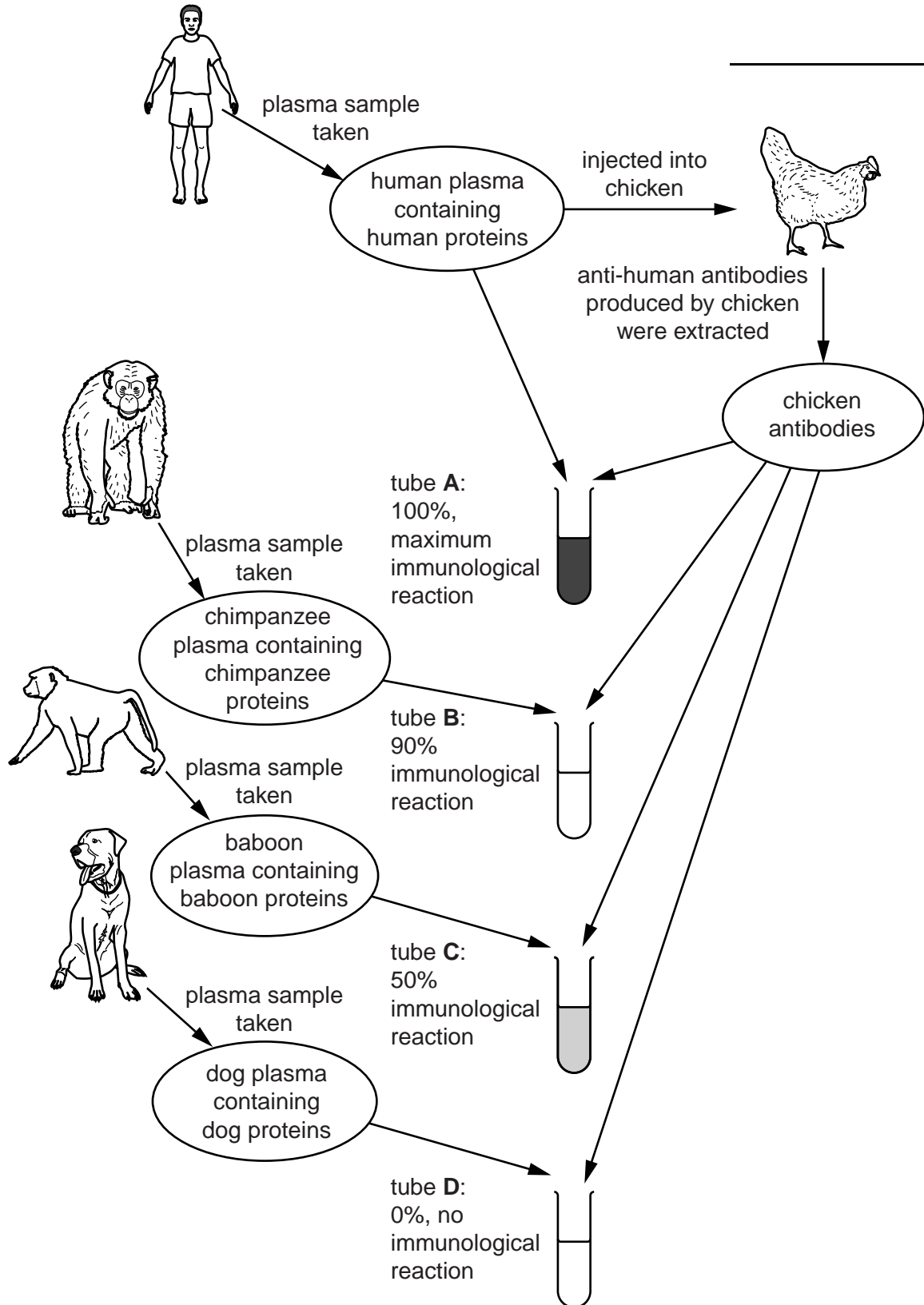


Fig. 3.1

(a) The immune system of birds is similar to that of mammals. With reference to Fig. 3.1,

(i) explain why injecting human proteins into a chicken causes an immune response

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..... [2]

(ii) suggest why investigators described the reaction of the chicken antibodies with the human proteins as 100% (tube **A**).

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..... [2]

(b) Describe **and** explain the conclusions which could be made about the evolutionary relationships between the **mammals** shown in Fig. 3.1.

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[Total: 9]

- 2 Fig. 1.1 is an electronmicrograph of a differentiated human B-cell (plasma cell) in the process of producing antibodies.

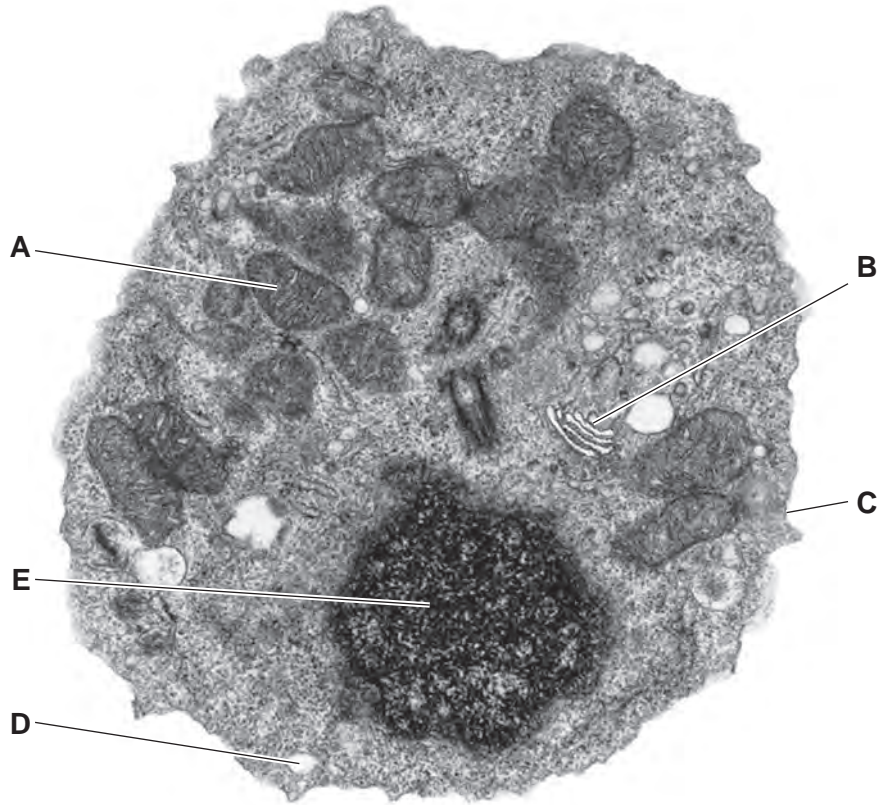


Fig. 1.1

(a) Name a part of the human body where B-cells

(i) are produced by division of stem cells,

.....[1]

(ii) produce antibodies.

.....[1]

(b) Name structures **A** and **B**.

A

B[2]

(c) Antibodies are proteins. With reference to structures **A** to **E**, outline the sequence of events that occur in the production and release of antibody proteins by differentiated B-cells (plasma cells).

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[Total: 10]