

AS Level Biology B

H022/02 Biology in depth

Question Set 10

1 Following the injection of a vaccine the antibody concentration in the blood changes.

Fig. 1 shows the concentration of antibody in the blood of an individual following a BCG vaccination for tuberculosis (TB).

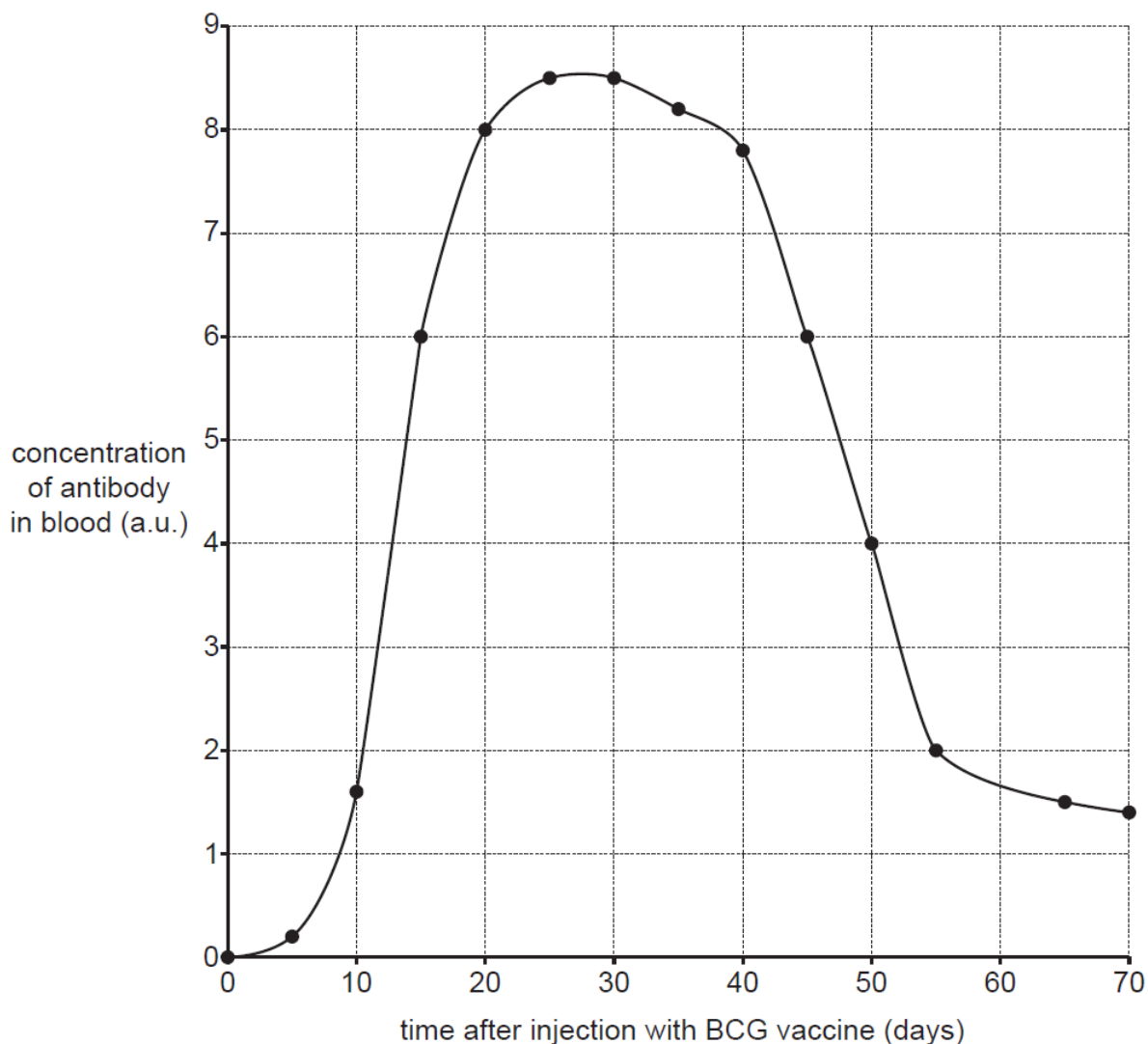


Fig. 1

(a) Describe **and** explain the pattern in the data shown in Fig. 1.

[4]

(b) The BCG vaccination can be given to babies and young children considered to be at high risk of contracting TB.

- In 2004, approximately 95 000 babies born in the UK were considered at high risk of contracting TB.
- Only 84 300 of these babies under one year old received the BCG vaccine.
- The BCG vaccine is estimated to be around 74% effective against TB when administered before a baby is one year old.

Using this information, calculate the percentage of babies who would still have been at high risk of contracting TB.

Give your answer to **two** significant figures.

[2]

- (c) Complete the table below by indicating which of the statements about different types of immunity are true (T) or false (F).

Statement	True (T) or False (F)
An injection of antibodies against the rabies virus will provide artificial active immunity.	
A person recovering from an infection of measles will have natural active immunity to the measles virus.	
A breast-fed baby receiving maternal antibodies will have natural passive immunity.	

[2]

- (d)* When certain types of pathogen enter the body they trigger a specific immune response.

Compare the roles of B and T lymphocytes in the specific immune response.

[6]

Total Marks for Question Set 10: 14

OCR

Oxford Cambridge and RSA

Copyright Information

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website (www.ocr.org.uk) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact The OCR Copyright Team, The Triangle Building, Shaftesbury Road, Cambridge CB2 8EA.

OCR is part of the Cambridge Assessment Group; Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge