

2001 HIGHER SCHOOL CERTIFICATE EXAMINATION

Biology

Section I – Part B (continued)

Marks

Question 25 (3 marks)

Antibiotics are drugs widely used in most industrialised societies. They are used to treat bacterial infections, are added to animal feed, and have been included in plastic products such as sandwich bags.

3

Explain TWO possible effects of this widespread use of antibiotics on the likely spread of disease in the future.

The disease may be completely killed off, and suppressed
the disease may grow new strains, and mutate to become stronger and where antibiotics no longer have an effect on it

Question 26 (3 marks)

When a body organ is transplanted from one person to another, the immune system of the recipient is triggered.

(a) Patients who have an organ transplant are given drugs to suppress their immune response. State the reason for this.

1

The foreign organ is considered 'bad' by the recipient's immune system, so it attempts to destroy it.

(b) Explain a possible consequence for the general health of organ transplant patients as a result of suppressing the immune system.

2

General health dramatically decreased, they are more susceptible to common diseases and less able to fight entering pathogens due to the inactive/sluggish nature of the immune system

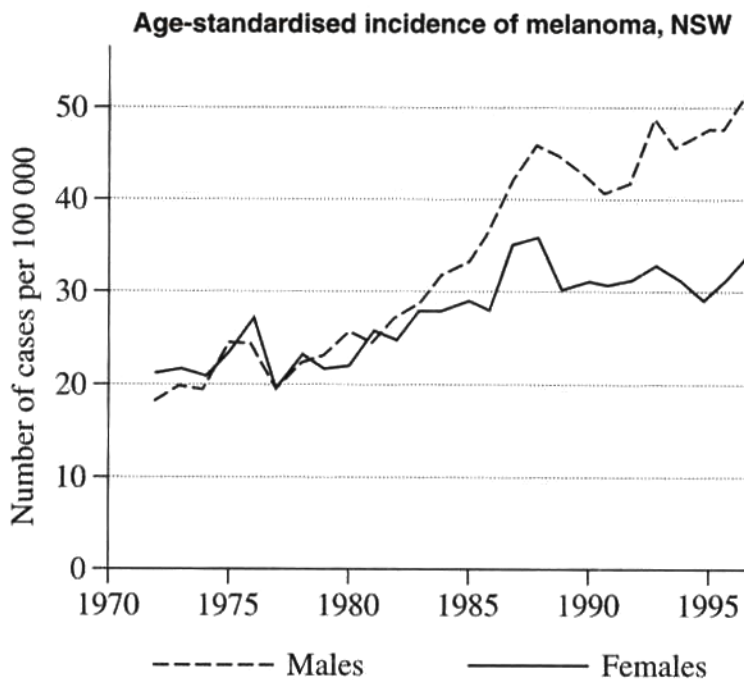
Marks

Question 27 (4 marks)

Epidemiological studies have demonstrated a relationship between ultraviolet radiation exposure and the development of melanoma, a type of skin cancer.

4

The graph shows the rate of occurrence of melanoma in males and females between 1972 and 1997.



A student studying the graph made the following statement.

‘The incidence of melanoma will continue to increase beyond 1997 at a greater rate in males than in females.’

Analyse the data in the graph to assess the validity of this statement.

This can be a valid statement since the increase seen in males is a good 10 more than females. The male graph is accelerated positively and growing rapidly where the female graph seems to be increasing sporadically but remaining constant and allows a responder to see the validity in the statement.

Marks

Question 28 (8 marks)

Evaluate the impact of major advances in scientific understanding and technology, in the field of genetics, on developments in reproductive technologies.

8

~~Major advances in scientific understanding~~ Scientific understanding and technology in the field of genetics has had major advances in society. The developments in reproductive technologies has a large, bettered society.

The availability and discovery of IVF has enabled ~~women who~~ infertile couples to infact have and deliver their own babies.

Such babies that have inherited the parents own characteristics due to the procedure in which the ~~sperm and~~ egg is fertilised by the sperm with assistance from technology under microscopes in the external environment.

The cloning of an embryo is another reproductive technology in which animals embryos are cloned via the collecting of the surrounding tissue.

Such major advances in scientific understanding and technology allows for a more diverse and wide spread race. The cloning of animals ~~to~~ and plants via pollination allows the world to continue to accept and acknowledge the better qualities of the animal and plant kingdom by cloning the better aspects.

IVF allows parents to have children, with help from technology which once was never possible.