LIFE SCIENCES: PAPER II

EXAMINATION NUMBER

ANSWER BOOKLET

There are (iv) pages in this Booklet.

QUESTION 1

Answer this question in the spaces provided. Place this Answer Booklet inside the Answer Book in which you answer the rest of the examination paper.

1.1   Select the term in Column B that best matches a description in the Column A. Write the letter of the matching term in the corresponding space provided between the brackets.

Each letter may only be used once.

Column A		Column B	
[ ]	The reproductive hormone that remains at a consistently high level during pregnancy	A	Ovulation
[ ]	Rupture of the Graafian follicle	B	Oestrogen
[ ]	Attachment of the developing embryo as it sinks into the endometrium	C	Placenta
[ ]	The most common site of fertilisation	D	Amnion
[ ]	Process by which the embryo grows	E	Progesterone
[ ]	Responsible for transport of foetal waste products	F	Meiosis
[ ]	Acts as a barrier against pathogens and drugs	G	Implantation
[ ]	A strong membrane around the embryo	H	Uterus
[ ]	Substance that protects and cushions the foetus from impact injury	I	Mitosis
[ ]	Labour is initiated by contraction of certain muscles in this organ	J	Oviduct
		K	Amniotic fluid
		L	Umbilical cord

(10)

1.2
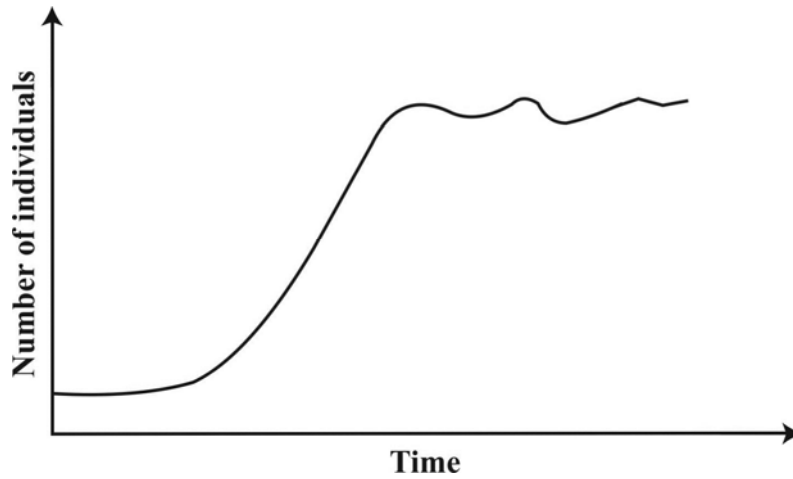
Graph to show the growth form of a population

1.2.1   Draw in and label a line on the graph above to indicate the **carrying capacity**. (2)

1.2.2   Draw in and label a few arrows to show the area of the graph where environmental resistance operates. (2)

1.2.3   Give an example of ONE limiting factor if this graph represented a pod (group) of dolphins.

(1)

1.3   Read the following information and then answer the questions that follow.

Peaches
Learners investigated two peach orchards. Orchard A had 20 peach trees with a beehive close by. Orchard B had 15 trees and no beehive. They collected some of the blossoms during spring and they examined the blossoms and drew diagrams to show the structure of the blossoms (flowers). Later in the summer they counted the number of peaches on some of the trees. The results are in the table below.

[Google images]

[Examiner's data]

Table: **Number of peaches per tree in two orchards**

ORCHARD	Tree 1	Tree 2	Tree 3	Tree 4
A (bees)	150	98	132	100
B (no bees)	54	100	66	0

[Examiner's data]

Write the letter of the most correct answer to Questions 1.3.1 – 1.3.5 in the answer box given next to the question.

1.3.1   The ratio of the number of peaches per tree in Orchard A to Orchard B is:

A   2400 : 3300
B   98 : 100
C   120 : 73
D   480 : 220

1.3.2   The dependent variable in this investigation is:

A   number of peaches
B   number of trees
C   presence of beehive
D   time of the year

1.3.3   Which of the following represents an hypothesis that can be supported by the table of results?

A   The number of peaches per orchard will be the same.
B   An investigation to determine the number of peaches per tree.
C   There will be fewer peaches in Orchard A than Orchard B.
D   In the orchard with the beehive more peaches are produced.

1.3.4   From the data given you can reasonably conclude that ...

A   the average number of peaches per orchard is the same.
B   there is more water in Orchard A than B.
C   the greater presence of bees are responsible for the greater number of peaches in Orchard A.
D   bees have nothing to do with pollination.

1.3.5   The accuracy of this investigation would improve

A   by using more learners to count the peaches.
B   by increasing the number of trees counted.
C   by placing a beehive in Orchard B.
D   by picking off more blossoms in spring.   (10)

1.3.6   In the space provided below, make a longitudinal section sketch of a flower such as a peach. Label THREE parts of the flower associated with sexual reproduction.

Peach blossoms

[Google Images]

(5)

1.3.7   State ONE advantage of sexual reproduction in peaches.

(2)

1.3.8   Clearly explain the difference between pollination and fertilisation.

(4)

1.3.9   There are a number of different varieties (cultivars) of peaches. These are produced using asexual reproductive processes. Briefly **debate** the pros and cons around the production of peach varieties using such processes.

(4)

[40]