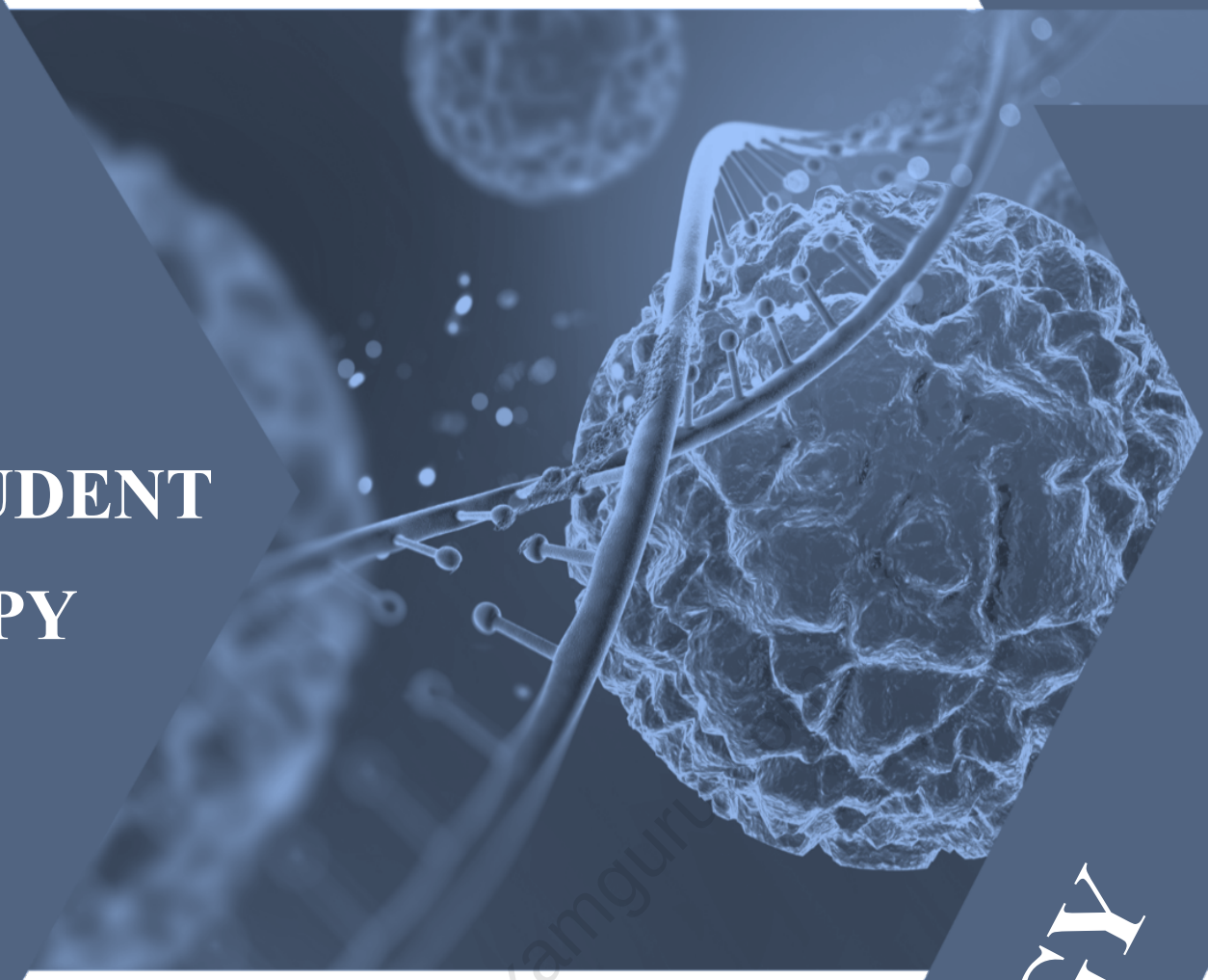

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HEADS-UP
REACH FOR THE STARS

IGCSE BIOLOGY

TOPICAL PRACTICE QUESTIONS

PAPER 4

VOL. 4

2020 EDITION

CHAPTER 16

Chapter 16: Reproduction

1 In Sichuan, in China, a sauce is made from broad bean seeds that have germinated and then have been left to ferment.

Fig. 3.1 shows a germinating broad bean seed.

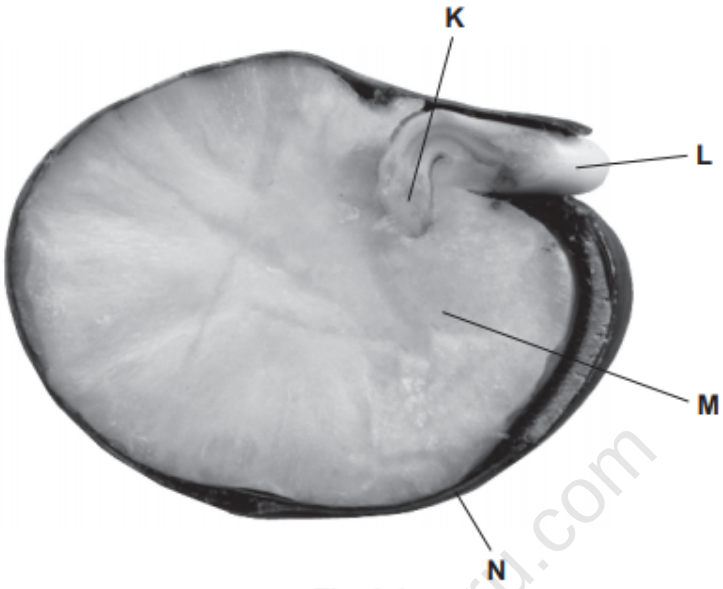

Fig. 3.1

(a) Name **K** to **N**.

K .....

L .....

M .....

N ..... [4]

Broad beans contain starch. The germinating beans are colonised by yeasts and other fungi, such as *Aspergillus*.

Aspergillus grows over the surface of beans and digests starch. It has a body made of thin threads that secrete enzymes, such as amylase.

(b) Name the thin threads that make up the body of a fungus, such as *Aspergillus*.

..... [1]

(c) The action of enzymes is often explained in terms of the 'lock and key' model as shown in Fig. 3.2.

Fig. 3.2

Use the information in Fig. 3.2 to explain how enzymes work to break down nutrient materials, such as starch.

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..... [4]

Enzymes in bean seeds are activated during germination. Some of these enzymes break down protein stored in the seeds.

A large number of bean seeds were soaked and germinated. Researchers took samples of germinating seeds over a period of 15 days. The seeds were chopped into small pieces and crushed with water to make an extract. Equal quantities of the extracts were placed into protein solutions at pH 5 and at pH 8.

The activity of the enzymes in each extract was determined by recording how quickly the protein was broken down. The results are shown in Fig. 3.3.

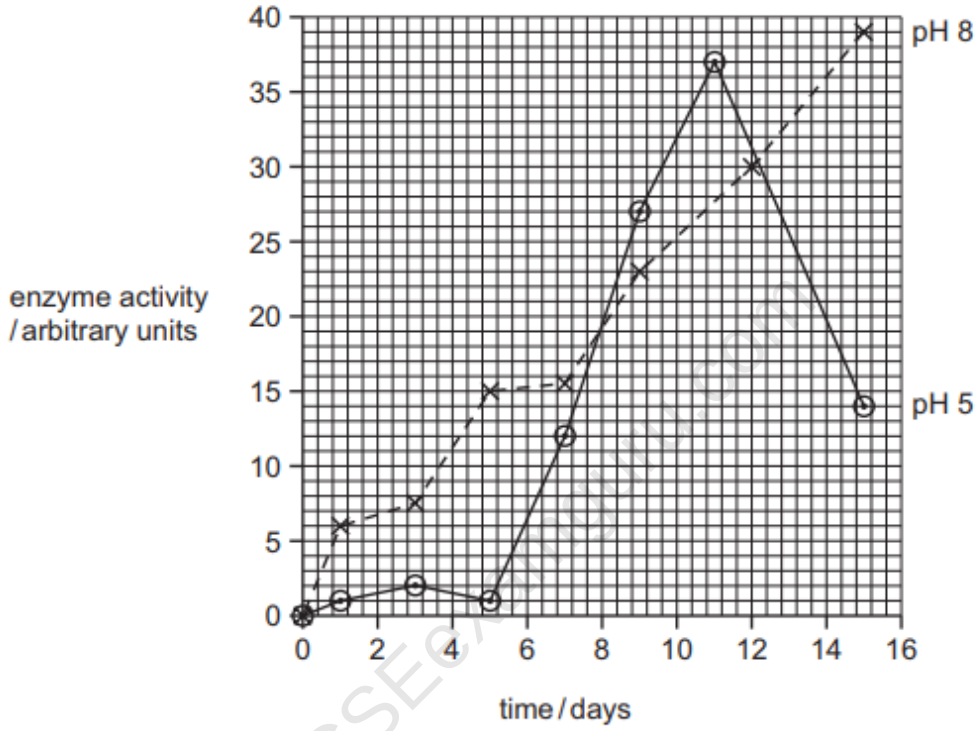

Fig. 3.3

(d) Describe the activity of the enzymes in the extracts at pH 5 over 15 days.

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..... [3]

(e) The researchers concluded that the beans contained two different enzymes that break down protein.

State the evidence from Fig. 3.3 for this conclusion.

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..... [3]

[Total: 15]

2 Fig. 5.1 shows the structure of the placenta and parts of the fetal and maternal circulatory systems.

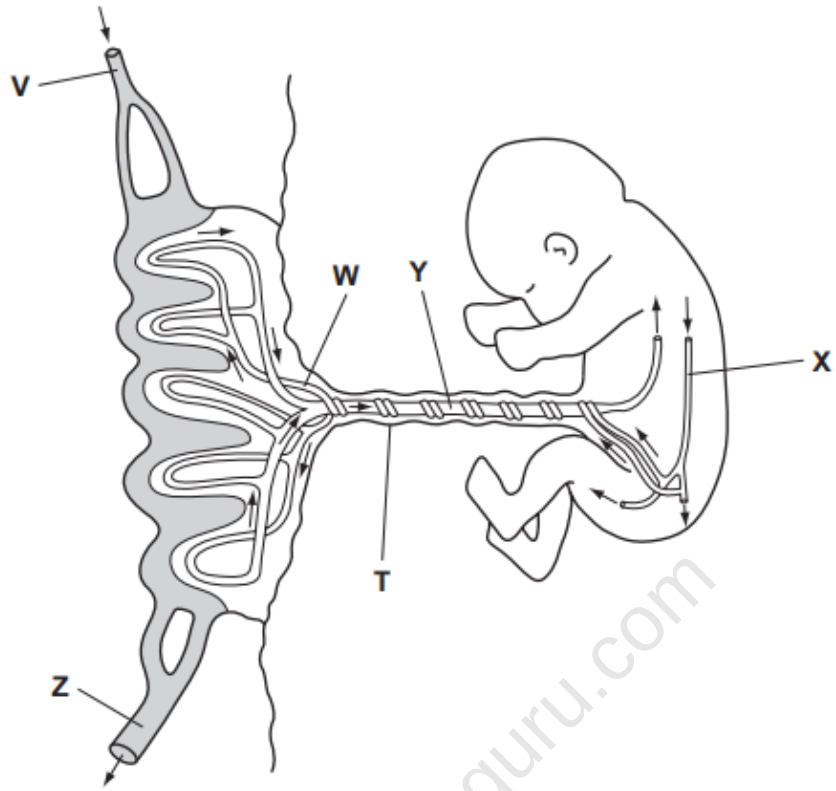

Fig. 5.1

(a) (i) Complete Table 5.1 by listing the blood vessels that carry oxygenated blood. Use the letters in Fig. 5.1 to identify the blood vessels.

Table 5.1

circulatory system	blood vessels that carry oxygenated blood
maternal	
fetal	

[2]

(ii) Name structure **T** and describe what happens to it after birth.

.....

.....

.....

..... [2]

(iii) The placenta is adapted for the exchange of substances between the maternal blood and the fetal blood.

Describe the exchanges that occur across the placenta to keep the fetus alive and well.

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..... [4]

(b) The placenta secretes the hormones oestrogen and progesterone.

Describe the roles of these hormones during pregnancy.

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..... [3]

[Total: 11]

3 Fig. 5.1 shows the human male reproductive system and part of the urinary system.

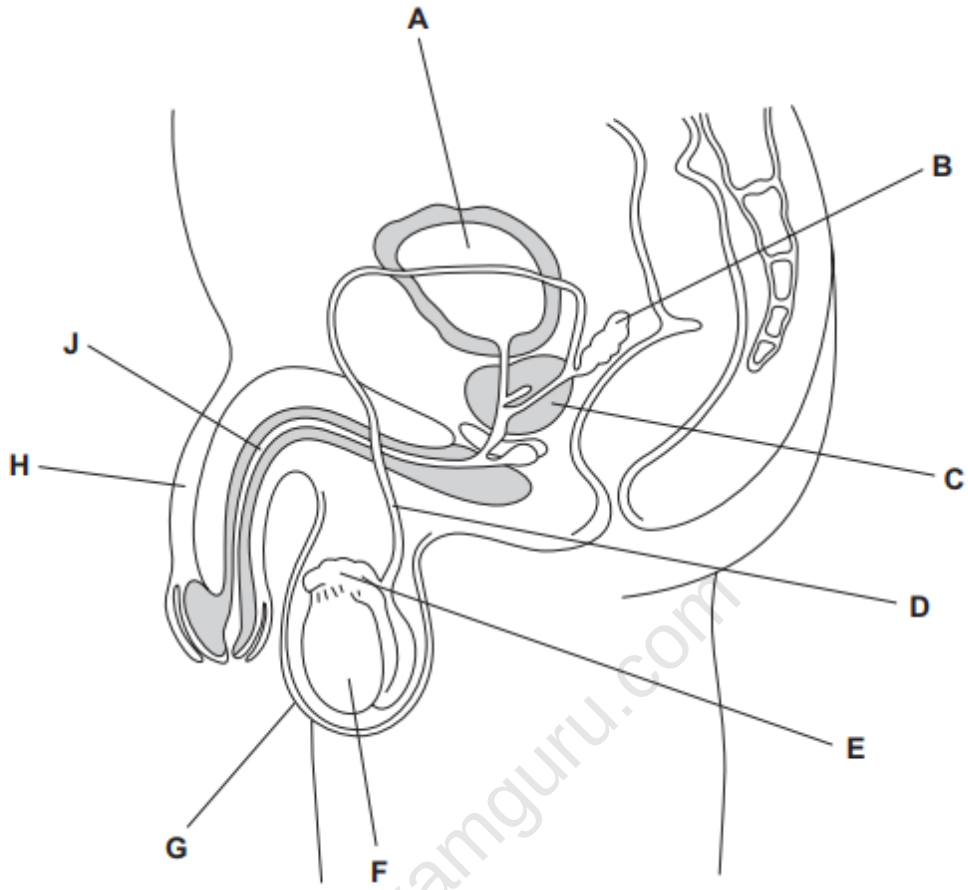

Fig. 5.1

(a) Complete Table 5.1 by identifying the structure in the male reproductive system shown in Fig. 5.1 that carries out each of the functions listed.

Write one letter only in each box. You may use the same letter more than once. There are some letters that you will not use. The first one has been done for you.

Table 5.1

function	structure
stores urine	**A**
produces gametes	
produces seminal fluid	
moves gametes by peristalsis	
produces testosterone	

[4]

(b) Describe how human male gametes differ from human female gametes.

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.....

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..... [4]

(c) Some women have difficulty becoming pregnant. They can be helped by taking fertility drugs. They can also be helped by artificial insemination.

(i) Describe how fertility drugs help women to become pregnant.

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.....

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.....

..... [3]

(ii) Describe how artificial insemination is carried out.

.....

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..... [2]

[Total: 13]

4 The egg cell is the female gamete. Fig. 5.1 shows an ovum at the time of ovulation. The ovum is surrounded by a 'jelly coat' and many follicle cells.

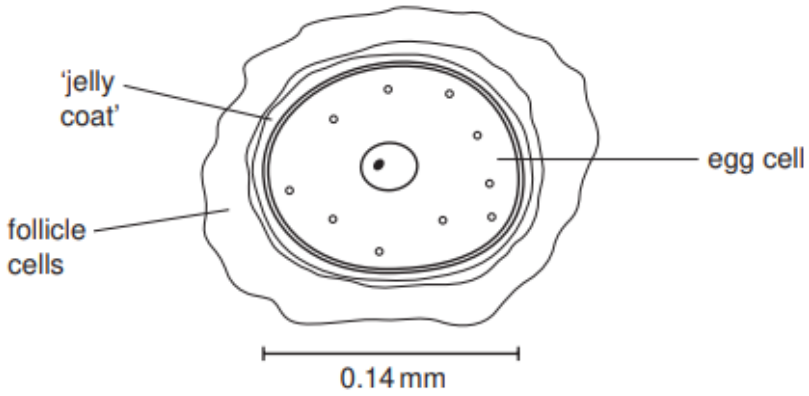

Fig. 5.1

(a) Calculate the magnification of the egg cell as shown in Fig. 5.1.

Show your working and express your answer to the nearest whole number.

answer = ... [2]

(b) State three ways in which the **structure** of an egg cell, as shown in Fig. 5.1, differs from the **structure** of a sperm cell.

1 .....

2 .....

3 ..... [3]

(c) Meiosis is involved in the production of male and female gametes.

Explain why it is important that meiosis occurs during the production of gametes.

.....

.....

.....

.....

..... [2]

Some women are unable to become pregnant because they or their partner are infertile.

(d) Suggest one reason why a man may be infertile and one reason why a woman may be infertile.

man .....

.....

.....

woman .....

.....

..... [2]

One way to treat infertility in a woman is to use artificial insemination (AI) using her partner's sperm.

The stages involved in AI are as follows.

1. If the doctor decides that AI is suitable, the woman will be given a course of a fertility drug at an appropriate stage of her menstrual cycle.
2. After two weeks, ultrasound is used to find out when the woman is likely to ovulate.
3. Sperm are collected from the man.
4. The sperm are placed into the uterus of the woman near the time of ovulation.
5. The woman is given an injection of a hormone to encourage the corpus luteum in the ovary to secrete progesterone.

(e) Explain why the sperm must be placed in the uterus near the time of ovulation.

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..... [3]

(f) Explain why it is important that progesterone is secreted after ovulation.

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..... [3]

(g) The success rate of AI is about 16%.

Suggest how the success rate of AI is calculated.

.....

..... [2]

[Total: 17]

5 The flowers of pea plants, *Pisum sativum*, are produced for sexual reproduction. The flowers are naturally self-pollinating, but they can be cross-pollinated by insects.

(a) Explain the difference between self-pollination and cross-pollination.

.....

.....

.....

..... [2]

(b) Explain the **disadvantages** for plants, such as *P. sativum*, of reproducing sexually.

.....

.....

.....

.....

.....

.....

.....

..... [4]

Pea seeds develop inside pea pods after fertilisation. They contain starch. A gene controls the production of an enzyme involved in the synthesis of starch grains.

The allele, **R**, codes for an enzyme that produces normal starch grains.
This results in seeds that are round.

The allele, **r**, does not code for the enzyme. The starch grains are not formed normally. This results in seeds that are wrinkled.

Fig. 6.1 shows round and wrinkled pea seeds.

round pea seed wrinkled pea seed

Fig. 6.1

Pure bred plants are homozygous for the gene concerned. A plant breeder had some pure bred pea plants that had grown from round seeds and some pure bred plants that had grown from wrinkled seeds.

(c) State the genotypes of the pure bred plants that had grown from round and from wrinkled seeds.

round .....

wrinkled ..... [1]

These pure bred plants were cross-pollinated (cross **1**) and the seeds collected.
All the seeds were round. These round seeds were germinated, grown into adult plants (offspring 1) and self-pollinated (cross **2**).

The pods on the offspring 1 plants contained both round and wrinkled seeds.

Further crosses (**3** and **4**) were carried out as shown in Table 6.1.

Table 6.1

cross		phenotype of seeds in the seed pods		ratio of round to wrinkled seeds
		round seeds	wrinkled seeds	
1	pure bred for round seeds x pure bred for wrinkled seeds	✓	×	1:0
2	offspring 1 self-pollinated	✓	✓	
3	offspring 1 x pure bred for round seeds			
4	offspring 1 x pure bred for wrinkled seeds			

(d) Complete Table 6.1 by indicating

- the type of seeds present in the pods with a tick (✓) or a cross (×)
- the ratio of round to wrinkled seeds.

You may use the space below for any rough working. [3]

(e) Seed shape in peas is an example of discontinuous variation.
Suggest **one** reason why seed shape is an example of discontinuous variation.

.....

..... [1]

Plants have methods to disperse their seeds over a wide area.

(f) Explain the **advantages** of having seeds that are dispersed over a wide area,

.....

.....

.....

.....

.....

..... [3]

[Total: 14]

6 The field mustard plant, *Brassica rapa*, is cross-pollinated by insects.

(a) Describe the advantages of cross-pollination to plants.

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..... [3]

Fig. 6.1 shows the events that follow pollination in *B. rapa*.

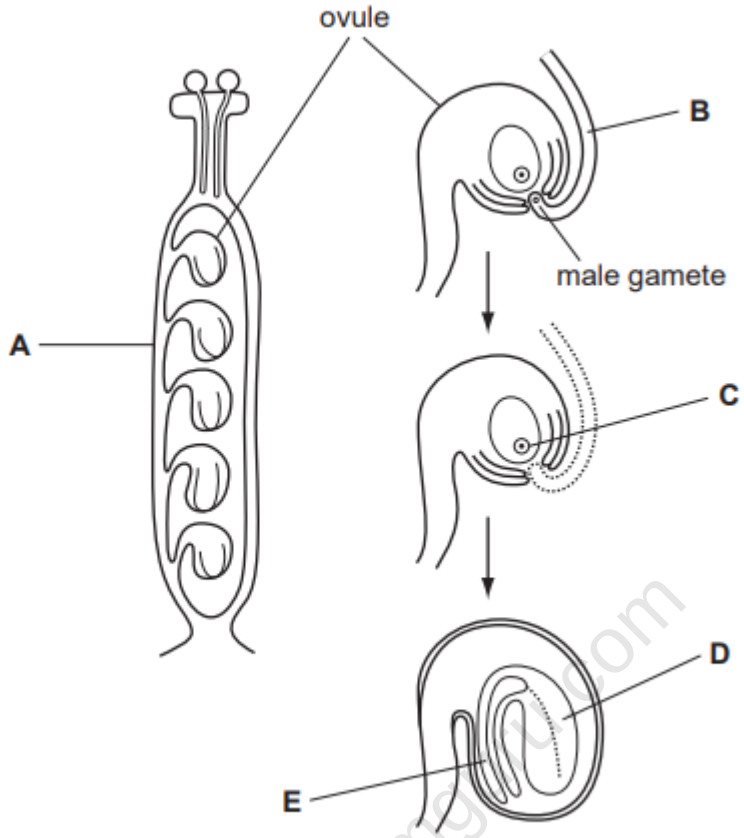

Fig. 6.1

(b) Name

(i) structures **A** to **E**.

A .....

B .....

C .....

D .....

E ..... [5]

(ii) the type of nuclear division that occurs to produce the new cells as the seed grows.

..... [1]

(c) Explain why the genotypes of the seeds are not all the same.

.....

.....

.....

.....

..... [2]

When ripe, the seed pod breaks open and the seeds are scattered. Some of the seeds germinate and grow into adult plants, but many do not.

(d) Explain why many seeds released by *B. rapa* do **not** germinate and grow into adult plants.

.....

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.....

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..... [3]

[Total: 14]

7 Fig. 3.1 shows the human female reproductive system.

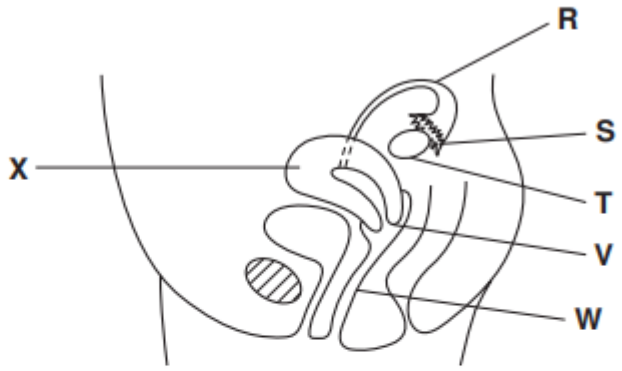

Fig. 3.1

(a) Table 3.1 shows four functions of the female reproductive system.

Complete the table by:

- naming the part of the system that carries out each of the functions;
- using the letters from Fig. 3.1 to identify the part of the system named.

One row has been completed for you.

Table 3.1

function	name of organ	letter from Fig. 3.1
production of gametes		
site of implantation		
site of fertilisation		
dilates during birth	cervix	**V**

[3]

The hormone FSH is important in regulating the menstrual cycle.

(b) (i) State the target organ of FSH.

..... [1]

(ii) State **one** effect of FSH.

.....

..... [1]

(c) The drug clomiphene is given to women who have difficulty in having children. The drug increases the secretion of FSH.

As part of treatment for infertility, a woman was given clomiphene for five days. The concentration of oestrogen in her blood was measured every day for 27 days.

The results are shown in Fig. 3.2.

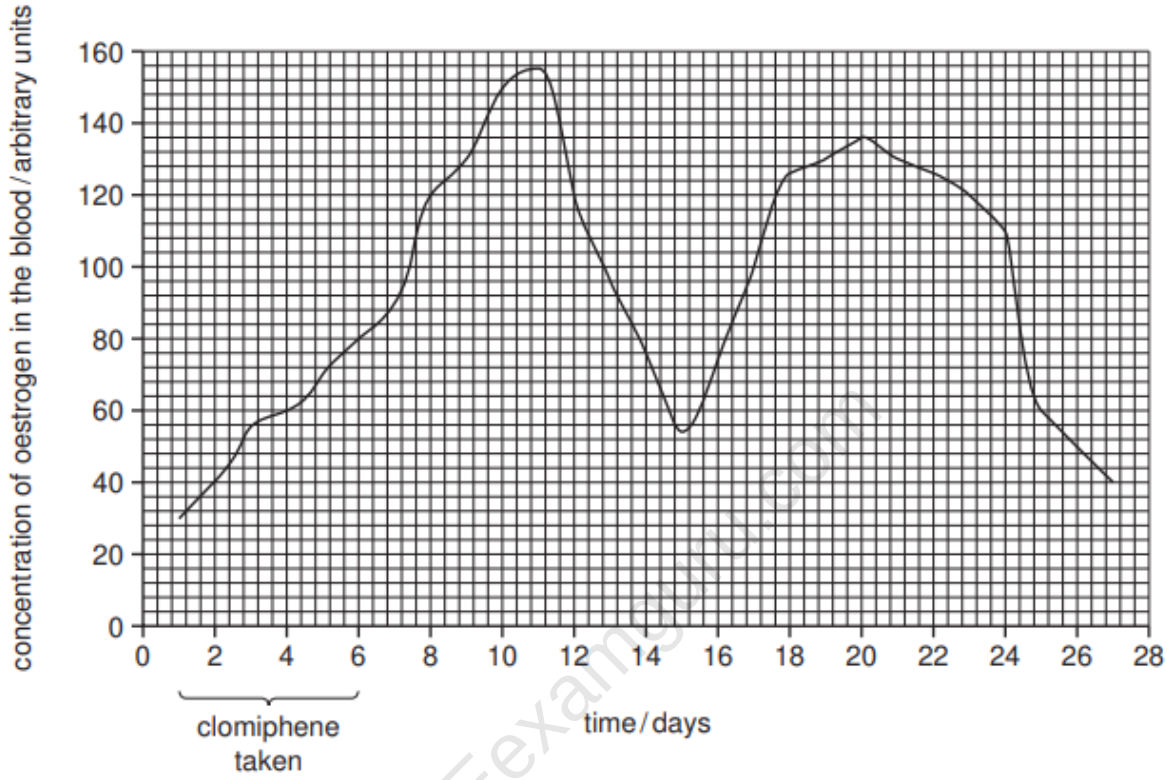

Fig. 3.2

(i) Describe the changes in oestrogen in the blood over the 27 days.

You will gain credit if you use results from Fig. 3.2 in your answer.

.....

.....

.....

.....

.....

.....

.....

..... [4]

(ii) Doctors thought that ovulation occurred around day 15.

Explain what is meant by the term *ovulation*.

.....

.....

.....

..... [2]

(d) The treatment was not successful on the first occasion.

As an alternative to this treatment, women may be offered *in vitro* fertilisation (IVF) treatment.

In IVF treatment, an egg is fertilised outside the body and the resulting embryo is placed into the uterus.

Describe what happens when an egg is fertilised by a sperm.

.....

.....

.....

.....

.....

..... [3]

(e) Some embryos produced by IVF do not develop because there are problems with their chromosomes, such as having the wrong number.

(i) Define the term *chromosome*.

.....

.....

.....

..... [2]

(ii) State the correct number of chromosomes that should be in a cell of a human embryo.

..... [1]

[Total: 17]

8 Mammals and flowering plants both have internal fertilisation and internal development.

(a) Describe what happens after pollination that results in fertilisation in flowering plants.

.....

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..... [3]

(b) Fig. 5.1 shows a fetus developing inside the uterus.

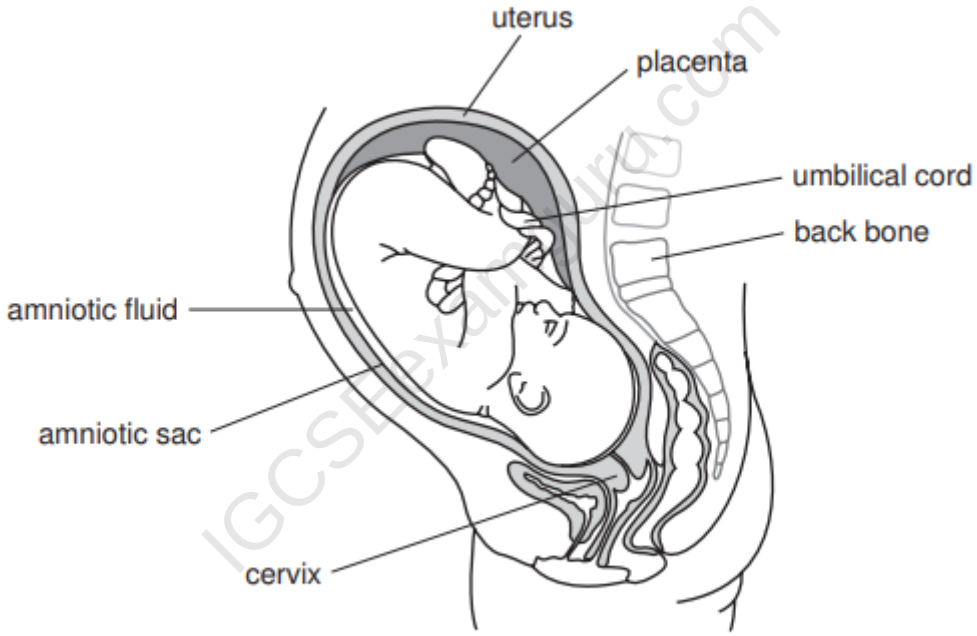

Fig. 5.1

Describe how the structures **named in Fig. 5.1** provide the following needs of the fetus.

protection .....

.....

.....

.....

.....

constant temperature .....

.....

.....

.....

.....

nutrients .....

.....

.....

.....

.....

excretion of metabolic waste .....

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.....

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..... [8]

[Total: 11]

9 **(a)** In 2005, the World Health Organization estimated that there were 2.3 million children infected with HIV.

Most children become infected from their mothers at birth or during breast feeding. Very few become infected by movement of HIV across the placenta.

Without any treatment, 25-40% of babies of mothers who are HIV positive (HIV+) will be infected. However, there are very effective treatments that have reduced transmission rates to 1%.

This has been achieved by:

- encouraging mothers to be tested for HIV;
- treating mothers and new-born babies with drugs that prevent HIV spreading within the body and reduce the chances of infection at birth;
- advising mothers not to breast feed if they are HIV+.

Explain the meaning of the following terms as used in the passage above:

transmission; .....

.....

drug. .....

..... [2]

(b) In many countries, there are dangers in using milk powder because it cannot be prepared under sterile conditions.

Explain the dangers of feeding non-sterile milk to children who may be HIV+.

.....

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.....

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.....

.....

.....

.....

..... [4]

(c) Even though there is a risk of HIV infection, it is sometimes advised that women breast feed their babies.

Explain the advantages of breast feeding.

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.....

..... [4]

(d) State **two** ways in which an adult may become infected with HIV.

1 .....

2 ..... [2]

[Total: 12]

10 Fig. 2.1 shows the changes in a human ovary during the first part of the menstrual cycle and after the fertilisation of an egg.

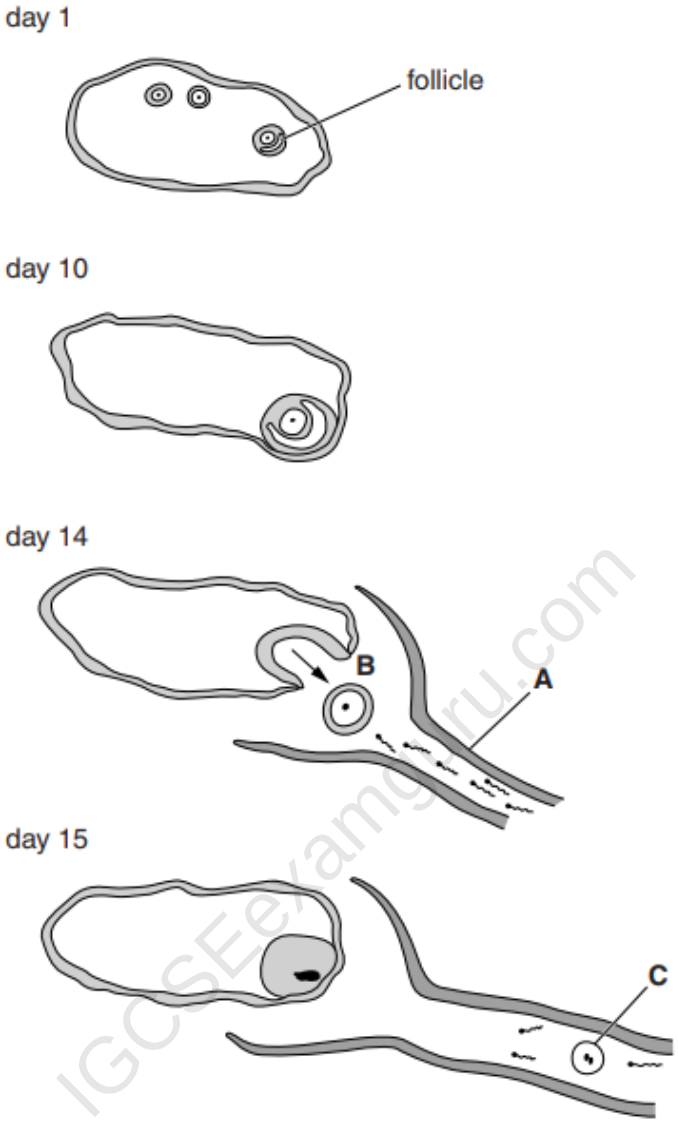

Fig. 2.1

(a) (i) Name:

organ **A** .....

process **B** .....

cell **C**. ..... [3]

(ii) Name the hormone that promotes:

the growth of the follicle .....

process **B**. ..... [2]

(iii) Explain how a sperm cell is adapted for its functions.

.....

.....

.....

.....

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.....

.....[3]

(b) Explain the advantages of sexual reproduction to an animal species.

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.....

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..... [5]

[Total: 13]

11 Fungi were often classified as different species according to their visible reproductive structures.

Penicillium dodgei and *Eupenicillium brefeldianum* were classified as different species because they had different types of spores.
However, recently it was recognised that the spores of *P. dodgei* were asexual spores, while those of *E. brefeldianum* were sexual spores. A comparison of the DNA of these two fungi shows that they are the same species.
This fungus is now known as *Penicillium brefeldianum.*

(a) State how DNA analysis can show that *P. dodgei* and *E. brefeldianum* are the same species.

.....

.....

.....[2]

(b) **(i)** Describe how a fungus, such as *P. brefeldianum*, reproduces asexually.

.....

.....

.....

.....

.....

.....[3]

(ii) Discuss the advantages of **asexual** reproduction.

.....

.....

.....

.....

.....

.....

.....[3]

[Total: 8]

12 The blood of a fetus does not mix with the blood of its mother, but substances are exchanged across the placenta.

(a) Table 3.1 shows five substances that cross the placenta, their direction of movement and the reason for the movement.

Complete Table 3.1. The second row has been completed for you.

Table 3.1

substance	direction of movement	reason
amino acids		
carbon dioxide	from fetus	waste gas from respiration
glucose		
oxygen		
urea		

[4]

(b) During pregnancy, women are often given dietary advice.

Explain why pregnant women require more iron and vitamin D in their diet.

iron .....

vitamin D ..... [2]

(c) Mothers may be encouraged to breast-feed their newborn babies. The first milk that a mother secretes is called colostrum and contains antibodies.

(i) Name the cells that produce antibodies.

..... [1]

(ii) Explain why it is important for newborn babies to have antibodies.

.....

.....

.....

.....

.....

..... [3]

(iii) Some mothers bottle-feed their newborn babies with formula milk rather than breast-feed.

Describe **four advantages** of breast-feeding, **other than** providing antibodies.

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..... [4]

[Total: 14]

13 Fig. 5.1 is a diagram of the human immunodeficiency virus (HIV).

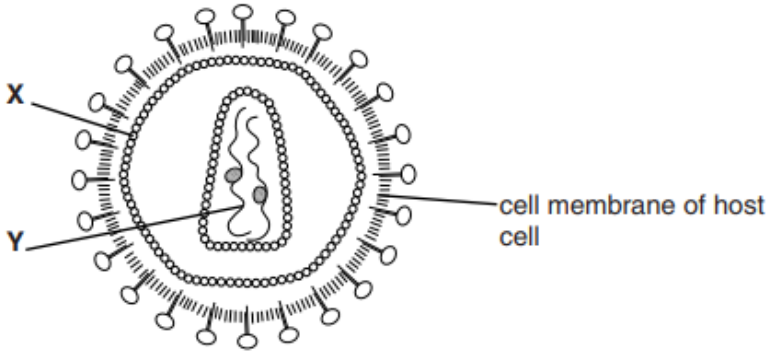

Fig. 5.1

(a) (i) Name the parts of the virus labelled **X** and **Y**.

X .....

Y .....[2]

(ii) State three ways in which the **structure** of bacteria differs from the structure of viruses.

1 .....

2 .....

3 .....[3]

(b) Sub-Saharan Africa has the highest proportion of the population living with HIV in the world. The World Health Organization estimates both the total number of people who live with HIV and the total number of people that are newly infected each year.

Fig. 5.2 shows the estimated numbers for sub-Saharan Africa between 1990 and 2010.

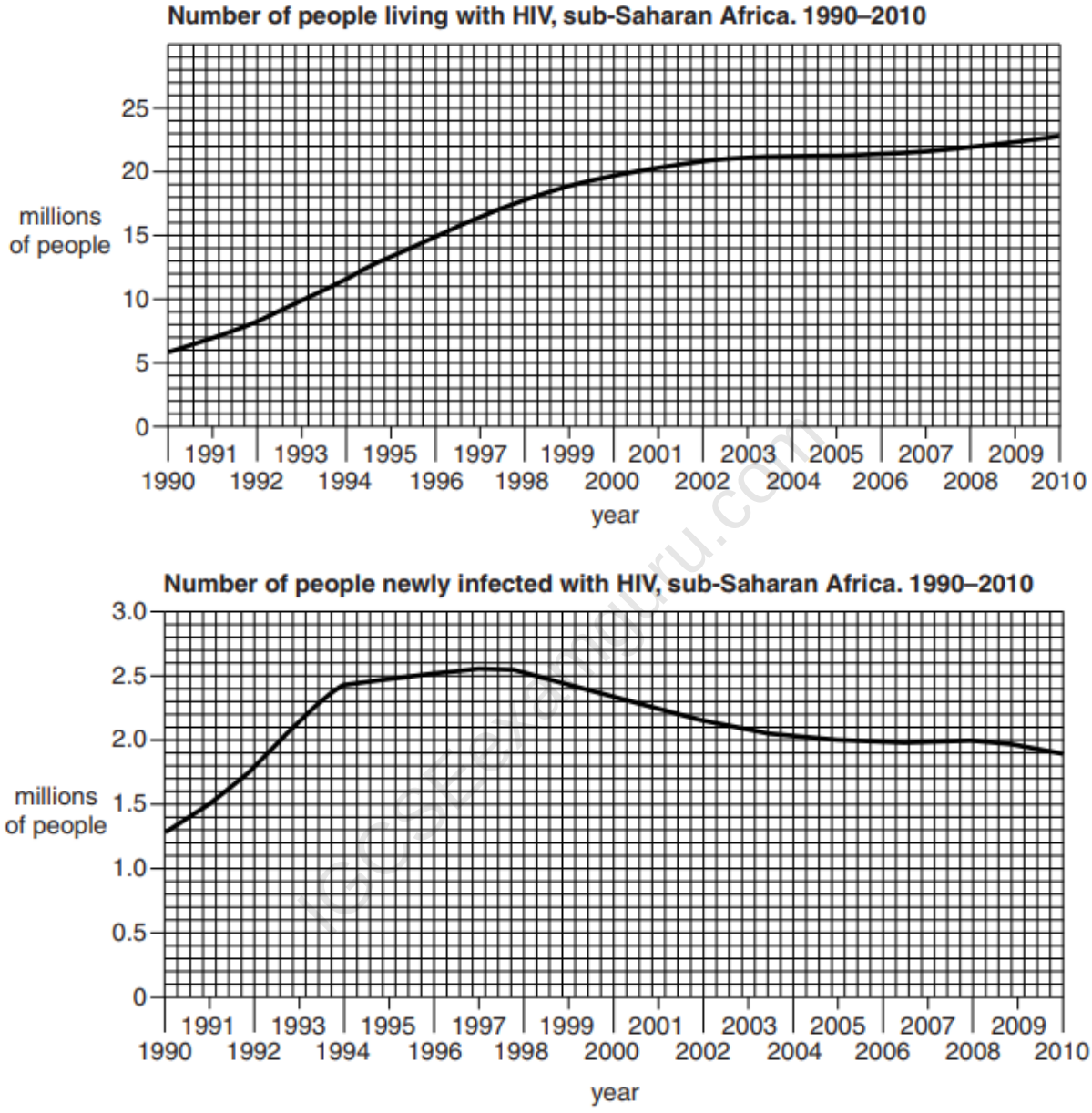

Fig. 5.2

(i) Summarise the changes between 1990 and 2009 in the number of people living with HIV and the number of people newly infected with HIV.

number of people living with HIV.....

.....

.....

.....

number of people newly infected with HIV .....

.....

.....

.....[4]

(ii) Suggest why in 2010 the number of people living with HIV increased but the number of newly infected people decreased.

.....

.....

.....

.....

.....

.....[2]

(iii) Describe **three** ways in which HIV is transmitted from infected to uninfected people.

1 .....

.....

2 .....

.....

3 .....

.....[3]

(iv) Describe the effects of HIV on the immune system.

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.....

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.....[3]

[Total: 17]

14 **(a)** Define the term *growth*.

.....

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.....

.....[3]

(b) Fig. 3.1 shows the events that follow fertilisation in a human.

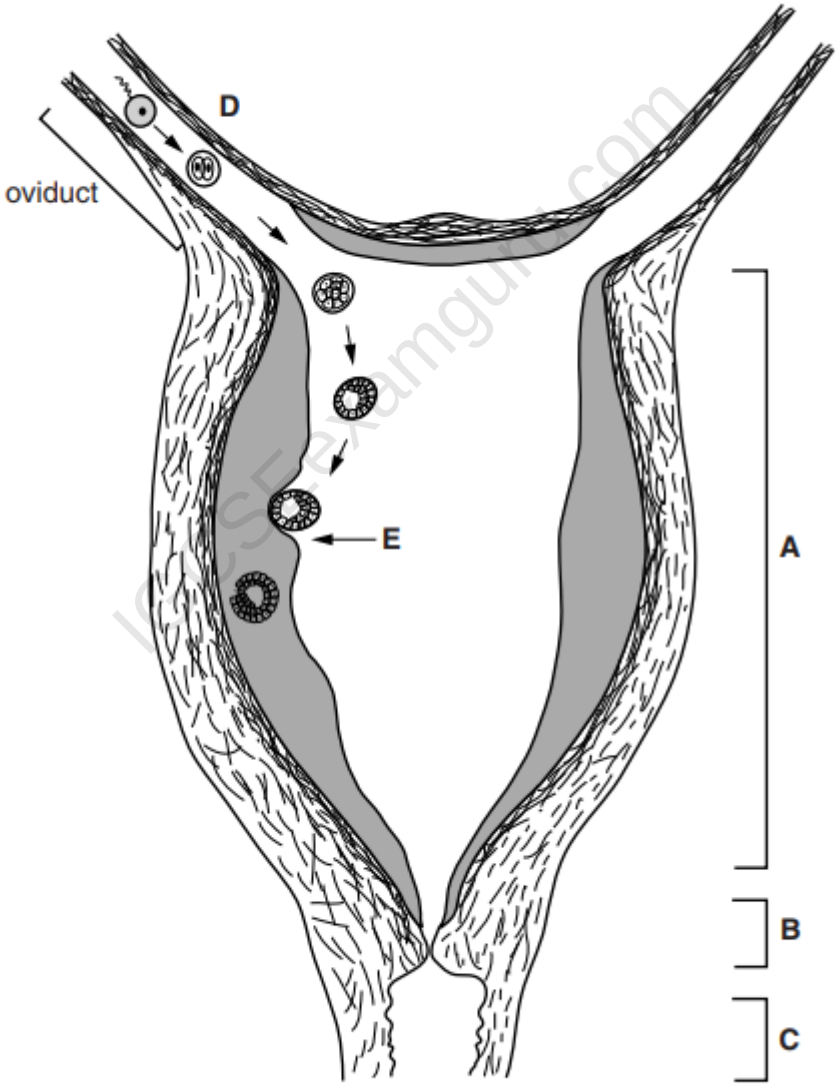

Fig. 3.1

(i) Name structures **A**, **B** and **C**.

A .....

B .....

C .....[3]

(ii) State the process that is occurring at **D** and the process that is occurring at **E**.

D .....

E .....[2]

(iii) Suggest how the embryo is moved along the oviduct.

.....

.....

.....

.....[2]

[Total: 10]

15 The menstrual cycle is coordinated by hormones secreted by the pituitary gland and hormones secreted by the ovaries.

Fig. 3.1 shows some of the events that occur during the menstrual cycle.

H	FSH is secreted by the pituitary gland
J	oestrogen stimulates repair and growth of the lining of the uterus
K	one or more follicles start to develop in an ovary
L	ovulation occurs
M	oestrogen is secreted by follicle cells
N	LH is secreted by the pituitary gland
O	oestrogen inhibits secretion of FSH

Fig. 3.1

(a) Put the stages into the correct sequence. Two have been done for you.

H						**L**

[2]

(b) **(i)** Describe what happens at ovulation.

.....

.....

.....

.....

.....[2]

(ii) Name the cell produced at fertilisation by the fusion of two gametes.

.....[1]

(c) If an embryo implants in the uterus, the embryo secretes a hormone known as hCG that stimulates the reproductive organs of the woman to continue to secrete progesterone.

Describe what happens after fertilisation until the time that the embryo secretes hCG.

.....

.....

.....

.....

.....

.....

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.....

.....[5]

(d) State **two** places where progesterone is produced during pregnancy.

1 .....

2 .....

[2]

(e) **(i)** Fertility drugs are taken to increase the chance that a woman may become pregnant.

Describe **and** explain how these drugs improve the chances of becoming pregnant.

.....

.....

.....

.....

.....

.....

.....[3]

(ii) Outline **two** social implications of using fertility drugs.

1 .....

.....

2 .....

.....

[2]

[Total: 17]

16 The growth and development of an embryo begins immediately after fertilisation.

(a) Fig. 5.1 shows some of the events (**S** to **Y**) between fertilisation and birth.

S	development of the heart
T	placenta forms
U	hormones are released by mother to start contractions
V	implantation of the embryo in the lining of the uterus
W	embryo forms into a ball of eight cells
X	development of sex organs
Y	fertilised ovum divides into two cells by mitosis

Fig. 5.1

(i) Put the events into the correct sequence. Two have been done for you.

Y					**X**	

[2]

Fig. 5.2 shows a developing fetus and part of the reproductive system of the mother.

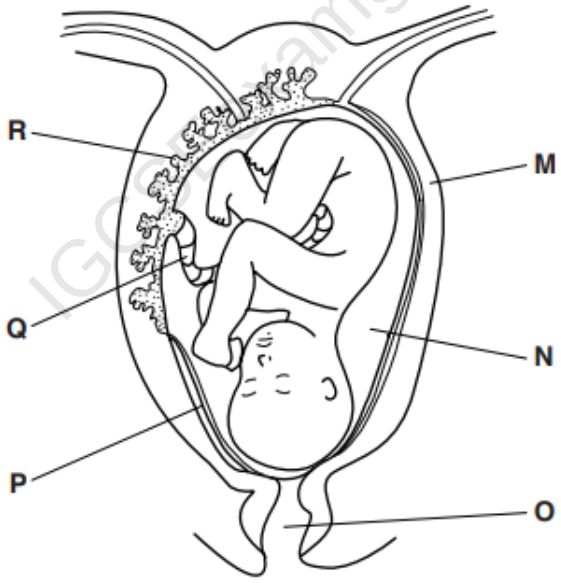

Fig. 5.2

(ii) Table 5.1 shows some functions and names of parts of the developing fetus and pregnant mother.

Complete the table. One row has been done for you.

Table 5.1

letter from Fig. 5.2	name	function during pregnancy
P	amniotic sac	encloses the amniotic fluid
		attaches the placenta to the fetus
	amniotic fluid	
		contracts to push the baby through the birth canal
	placenta	
		widens during labour to allow the head of the baby to pass

[5]

(b) Mothers are often given nutritional advice for their newborn babies. Scientists compared breast-feeding to bottle-feeding with formula milk. Their data is shown in Table 5.2.

Table 5.2

	breast milk	formula milk
lipid/g per dm^3	37	38
lactose/g per dm^3	73	72
protein/g per dm^3	8.7	12.9
energy/kJ per dm^3	680	690
volume of milk taken/g per day	448	732

Use the data in Table 5.2 to describe **one** difference and **one** similarity between the nutritional value of breast milk and formula milk.

difference .....

.....

similarity .....

.....

[2]

(c) The scientists measured the growth of the babies fed with breast milk and babies fed with formula milk described in Table 5.2. The mass of the babies from birth until they were 15 months old is shown in Fig. 5.3.

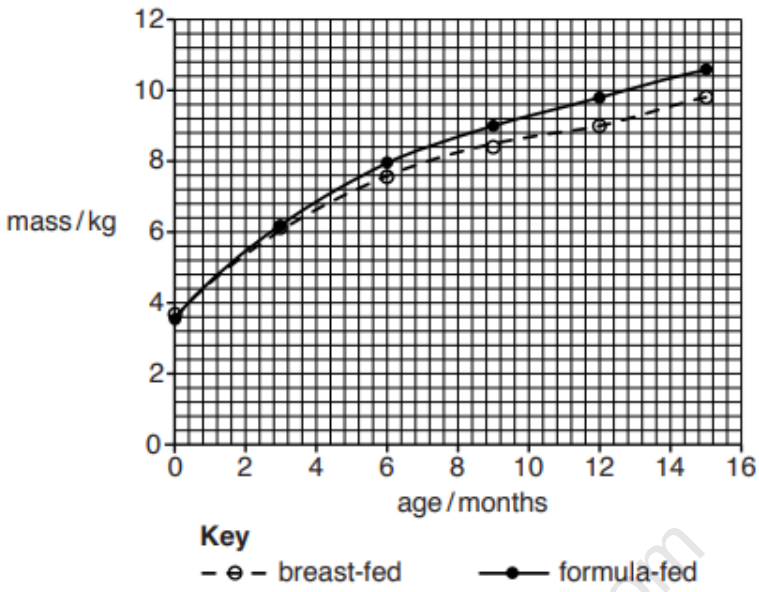

Fig. 5.3

(i) Define the term *growth*.

.....

.....

.....

.....

..... [2]

(ii) Using the information in Table 5.2 and Fig. 5.3, describe and explain the changes in the mass of the babies that were breast-fed and babies that were bottle-fed with formula milk.

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..... [4]

(iii) The scientists noticed that there were other differences between the breast-fed babies and the babies fed with formula milk.

Describe the advantages and disadvantages of breast-feeding.

advantages .....

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.....

.....

disadvantages .....

.....

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.....

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[4]

[Total: 19]

17 The menstrual cycle involves monthly changes in the ovary and the uterus.

(a) Fig. 5.1 shows the sequence of changes within the ovary that occur during the menstrual cycle.

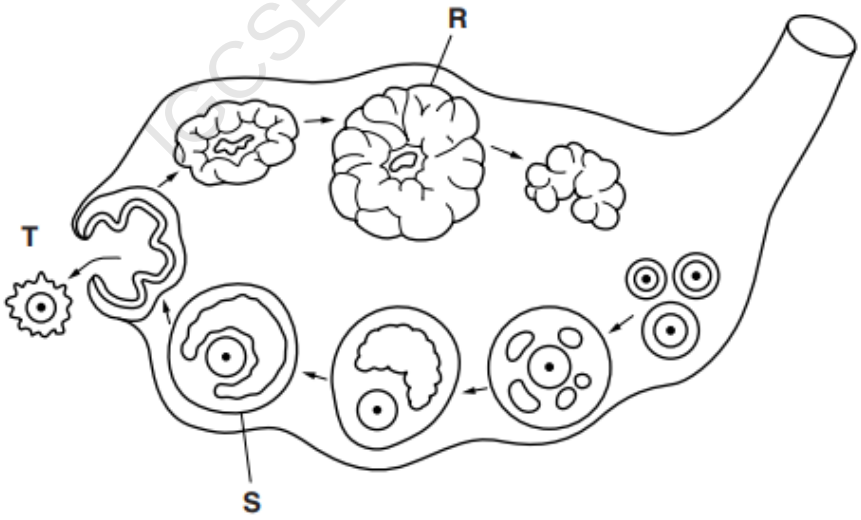

Fig. 5.1

(i) Name structures **R** and **S**.

R .....

S .....

[2]

(ii) State the name of the process that is occurring at **T**.

.....[1]

(b) The ovary secretes hormones that control the growth and maintenance of the lining of the uterus.

Name the hormone that stimulates:

(i) the growth of the lining of the uterus during the first half of the menstrual cycle

.....[1]

(ii) the maintenance of the lining of the uterus during the second half of the menstrual cycle.

.....[1]

(c) Fig. 5.2 is an electron micrograph showing a sperm cell on the surface of an egg cell.

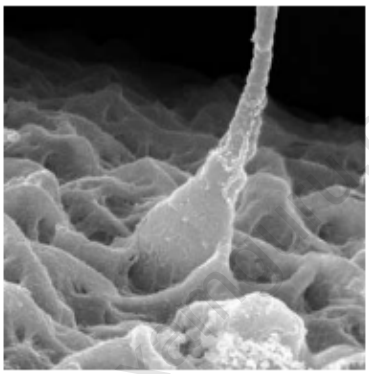

Fig. 5.2

(i) State **three** ways in which a sperm cell differs from an egg cell.

1 .....

2 .....

3 .....[3]

(ii) Human body cells have 46 chromosomes. Human egg and sperm cells have 23 chromosomes each.

What term is used to describe the number of chromosomes in a gamete, such as an egg cell or a sperm cell?

.....[1]

(iii) State the organ in which fertilisation occurs in humans.

.....[1]

(iv) Describe what happens between the event shown in Fig. 5.2 and implantation in the uterus.

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.....

.....[4]

(d) Clomiphene citrate is a fertility drug that has been available for over 50 years. As part of a fertility treatment clomiphene citrate is taken once a day (daily dose) for about five days.

Researchers investigated the use of the drug in Denmark between 1974 and 1993. The results of their study are shown in Fig. 5.3.

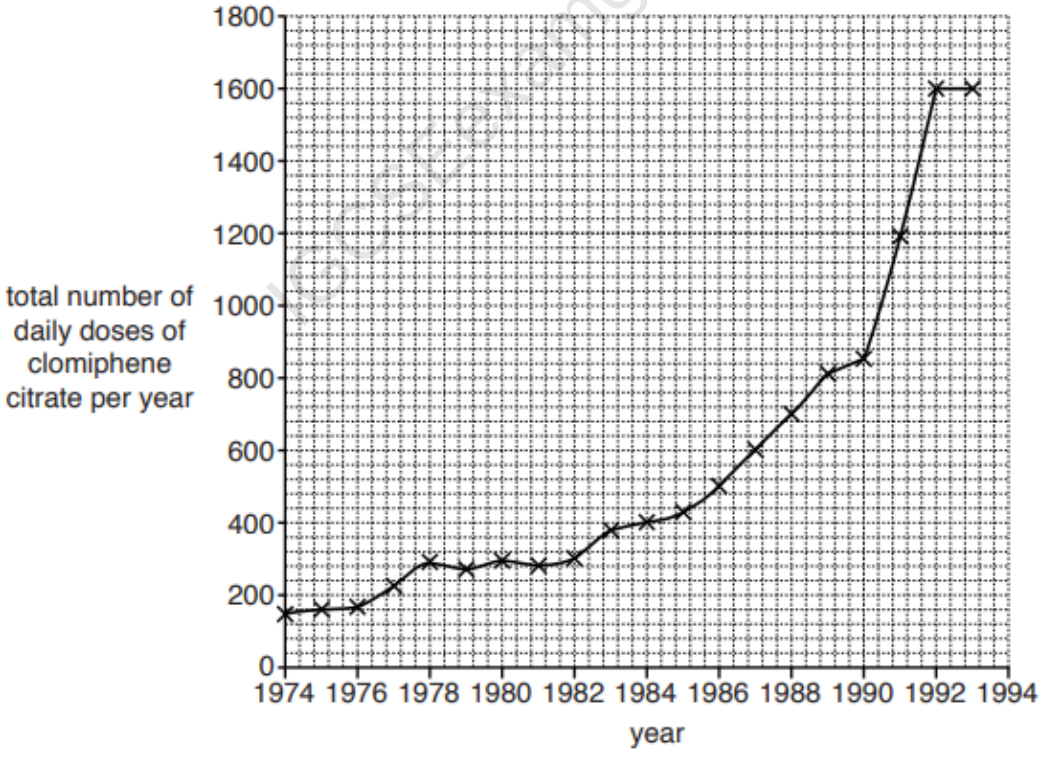

Fig. 5.3

(i) Describe the change in the use of clomiphene citrate in Denmark between 1974 and 1993. Use data from Fig. 5.3 in your answer.

.....

.....

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.....

.....[2]

(ii) Clomiphene citrate is used as part of a treatment cycle to help women become pregnant. Often this involves artificial insemination (AI).

Describe how a treatment cycle involving fertility drugs **and** AI would be carried out.

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.....[3]

[Total: 19]

18 Fig. 5.1 is a diagram showing the events from pollination to fertilisation in a species of flowering plant.

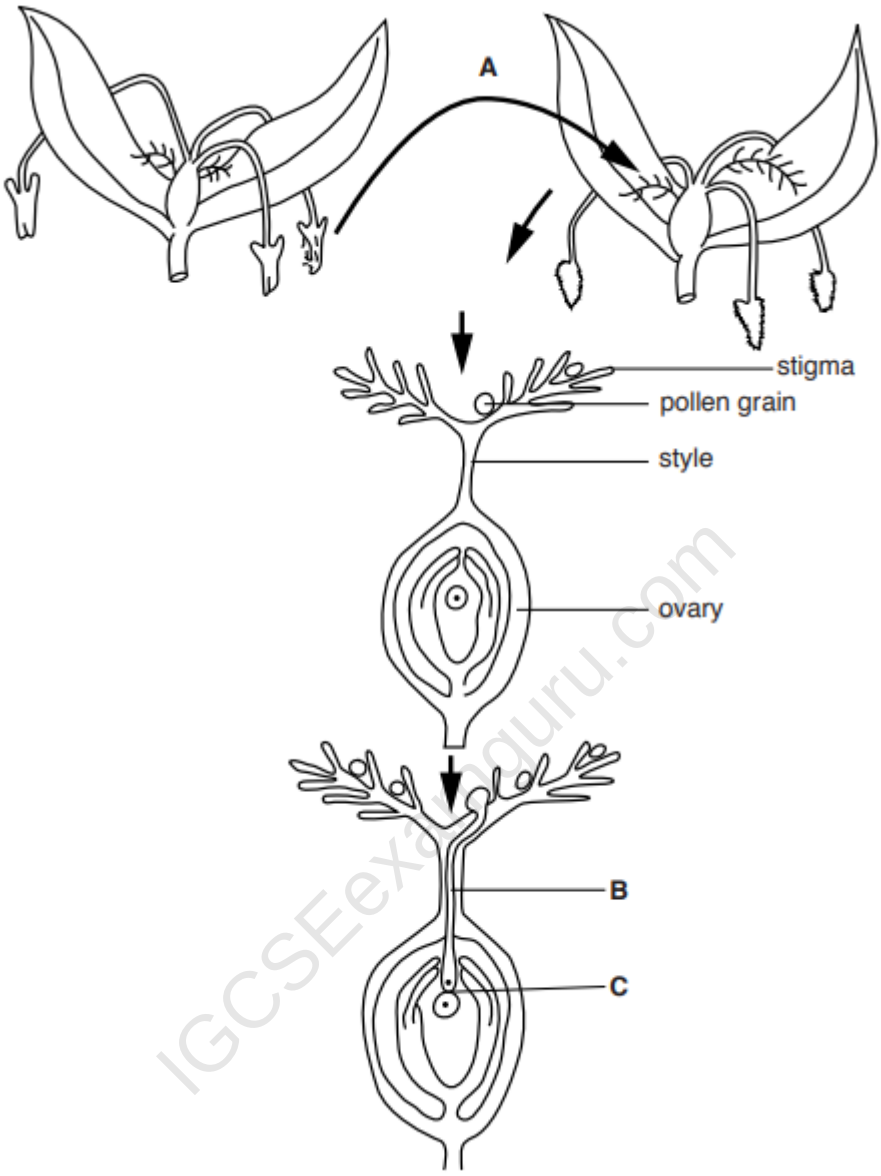

Fig. 5.1

(a) Name the likely method of pollination for the flowers shown at **A** in Fig. 5.1. Give an explanation for your choice.

method of pollination .....

explanation .....

.....

.....

.....

[3]

(b) In Fig. 5.1 pollen is transferred from one plant to another.

State the name for this type of pollination.

.....[1]

(c) Name structure **B** shown in Fig. 5.1 and state its function.

.....

.....

.....[2]

(d) Fertilisation occurs at **C** as shown in Fig. 5.1.

Describe what happens at fertilisation in flowering plants.

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.....[2]

(e) Seed formation occurs after fertilisation. Seeds are formed inside the fruits and then dispersed.

(i) Name the part of the flower that develops into the seed.

.....[1]

(ii) Name the part of the flower that develops into the fruit.

.....[1]

(iii) State an advantage of seed dispersal.

.....

.....[1]

(f) Seed germination occurs when conditions are suitable.

Explain the role of enzymes in seed germination.

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.....[2]

[Total: 13]

19 Fig. 1.1 shows seven marsupial mammals.

not drawn to scale

Fig. 1.1

(a) (i) State **one** visible feature that could be used to identify the marsupials in Fig. 1.1 as mammals.

.....[1]

(ii) Use the key to identify each species. Write the letter of each species (**A** to **G**) in the correct box beside the key. One has been done for you.

key

1	(a)	tail visible	go to 2	
	(b)	no tail visible	go to 3	
2	(a)	back feet at least twice as long as front feet	go to 4	
	(b)	back feet and front feet of similar length	go to 5	
3	(a)	large ears relative to the size of the head	*Phascolarctos cinereus*	
	(b)	small ears relative to the size of the head	*Vombatus ursinus*	
4	(a)	tail at least twice as long as body	*Sminthopsis longicaudata*	
	(b)	tail less than twice as long as body	*Macropus rufus*	
5	(a)	uniform body colouring	*Paljara tirarense*	
	(b)	markings on body	go to 6	
6	(a)	white band across back and chest	*Sarcophilus harrisii*	
	(b)	no white band across back and chest	*Dasyurus maculatus*	**G**

[3]

(b) Sexual reproduction occurs in all mammals. A zygote is formed from the fertilisation of a male gamete and a female gamete.

(i) Name the process that results in the formation of haploid gametes.

.....[1]

(ii) Explain the importance of sexual reproduction in mammals.

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.....[3]

(c) Marsupials differ from other mammals by giving birth to relatively undeveloped offspring. Female humans have a placenta and therefore give birth to more developed offspring.

(i) Describe the role of the placenta in humans.

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.....[4]

(ii) In humans, the placenta is connected to the amniotic sac which contains amniotic fluid.

State **two** functions of the amniotic fluid.

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.....[2]

[Total: 14]