



SAMPLE

Conquesta 2014

(International Multiple Choice Primary School Olympiads – Est. 1998)

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Natural Sciences – Grade 7

Welcome to your Conquesta Olympiad. When you have decided which of the answers is correct, scratch out the letter in the matching square on your answer sheet using **ONLY a black or blue ballpoint or black khaki pen.** (Do not use pencils, crayons, pencil crayons, highlighters, tippex or glue.) If the answer to question 4 is c, then scratch out the letter c in the square containing c next to the number 4 (see example 1 below). If you've made a mistake and b should have been the answer, neatly cross out the mistake and then scratch out b (see example 2 below).

Example 1:-

4.	a	b	<input checked="" type="checkbox"/>	d
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Example 2:-

4.	a	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	d
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Reproduction

Reproduction

- Human reproduction involves the joining together of a male sperm and a female egg in a process called **fertilisation**.
- The fertilised egg implants itself into the uterus lining and begins its development into a baby.
- A human pregnancy lasts approximately nine months or 40 weeks.

Fertilisation

- Fertilisation is the **fusing together** of the **sperm nucleus** and the **egg nucleus**.
[sperm enters egg; once inside, tail of sperm breaks off and nuclei fuse]

After Fertilisation

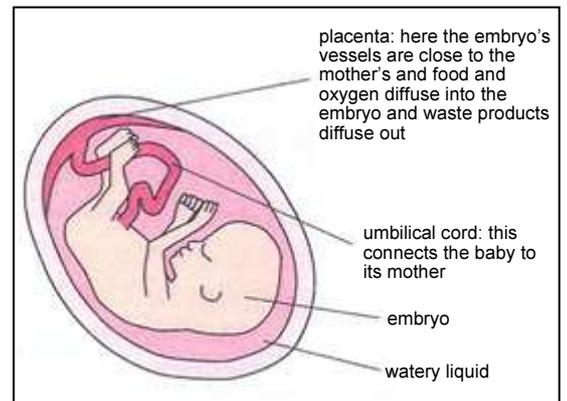
- The fertilised egg divides into a ball of cells as it passes down the Fallopian tube (oviduct).
- The ball of cells becomes an **embryo** and embeds itself into the uterus lining. This is called **implantation**.
- The embryo develops into a baby.

Development and Protection

- During the development of the embryo it is provided with food and oxygen by the **umbilical cord**.
- Waste materials from the embryo pass back along the umbilical cord.
- The blood of the embryo and the mother do not mix but pass close together to allow the exchange of food, oxygen and waste.
- The **placenta** is an organ that grows early in the pregnancy. It acts as a barrier to help prevent harmful substances reaching the embryo
- The embryo is attached to the placenta by the umbilical cord.
- The baby is protected inside the uterus by a sac filled with a watery liquid, called the **amniotic fluid**. The fluid acts as a shock absorber against minor bumps.
- The **endocrine system** produces hormones, which are needed for proper body function and growth.

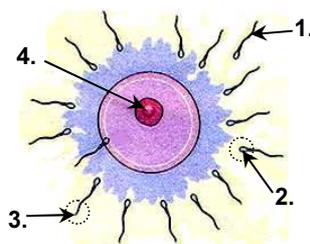
Twins

- Identical** twins are formed if the fertilised egg divides into two, and each part develops into a baby.
- Non-identical** twins are formed when two eggs are released from the ovary and both are fertilised.



Match the correct labels in (a) – (d) below, to what they represent on the diagram, for questions 1 – 4.

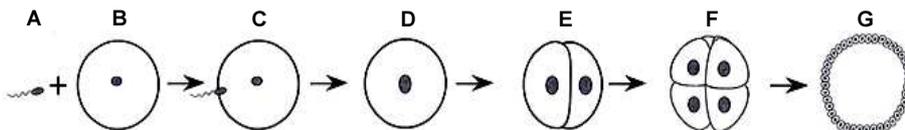
- (a) nucleus
- (b) sperm
- (c) tail
- (d) head



5. Fertilisation in humans happens when

- two eggs join together.
- a cell divides.
- a sperm cell joins with an egg cell.
- a pollen cell joins together with an egg cell.

Study the diagram below to answer questions 6 – 9.



- Identify A.
(a) gene (b) ovum (c) nucleus (d) sperm
- Identify B.
(a) gene (b) ovum (c) nucleus (d) sperm
- Identify the process occurring at C.
(a) germination (b) gestation (c) fertilisation (d) mitosis
- Identify the process occurring between E and F.
(a) cell division (b) egg splitting (c) egg multiplying (d) fertilisation

