

## Definitions and Concepts for CAIE Biology IGCSE

### Topic 16: Reproduction

*Definitions in **bold** are for supplement only*

**Abstinence** - Deliberately refraining from having sexual intercourse.

**Acquired immunodeficiency syndrome (AIDS)** - A disease which occurs when HIV destroys a given proportion of lymphocytes and the immune system is no longer functional.

**Amniotic fluid** - The liquid surrounding the embryo in the amniotic sac that protects the fetus and acts as a shock absorber.

**Amniotic sac** - A thin, transparent bag which holds the developing fetus and amniotic fluid.

**Anther** - The pollen-bearing structure of the stamen.

**Asexual reproduction** - A form of reproduction involving a single parent that creates genetically identical offspring.

**Carpel** - The female part of the plant consisting of a stigma, style and ovary.

**Cervix** - A narrow opening into the uterus that protects the fetus.

**Cross-pollination** - **A type of pollination in which pollen is transferred from an anther of one plant to a stigma of a different plant. This results in plants with greater genetic diversity.**

**Egg cell** - A specialised female sex cell involved in reproduction. It has a haploid nucleus, a large amount of cytoplasm rich in fats and proteins, and is surrounded by a jelly coat. Also known as an ovum.

**Fertilisation** - The fusion of the nucleus of male and female gametes. It restores the full chromosome number.

**Fetus** - An embryo after eight weeks of development.

**Follicle-stimulating hormone (FSH)** - **A hormone secreted by the pituitary gland that binds to follicle cells, stimulating them to mature and secrete oestrogen.**

**Gametes** - Sex cells (sperm and egg cells) with half the usual number of chromosomes. **The nuclei of gametes are haploid.**

**Germination** - The process by which a plant grows from a seed.



**Human immunodeficiency virus (HIV)** - An infectious virus that is spread by direct contact with infected body fluids. It destroys lymphocytes, impairing the ability to produce antibodies and weakening the immune system. HIV may lead to AIDS.

**Implantation** - The early stage of pregnancy in which the embryo adheres and sinks into the wall of the uterus.

**Insect-pollinated flower** - A type of flower that relies on insects to transfer pollen grains between flowers.

**Luteinising hormone (LH)** - A hormone secreted by the pituitary gland that initiates ovulation and stimulates the development of the remains of the follicle into a corpus luteum.

**Menstrual cycle** - The monthly cycle in women that involves the development of the uterus lining, ovulation, maintenance of the uterus lining and its shedding.

**Oestrogen** - A female sex hormone released by the ovaries that is involved in the development of the female secondary sexual characteristics. It also causes the growth and repair of the uterus lining in the menstrual cycle. **High levels of oestrogen stimulate a surge in LH production.**

**Ovary (human)** - An organ in the female reproductive system that produces egg cells in follicles.

**Ovary (flower)** - Part of the carpel that holds the ovules and following fertilisation, develops into the fruit.

**Oviducts** - The tubes that transport egg cells from the ovaries to the uterus. They are the site of fertilisation.

**Penis** - The male sex organ that penetrates the vagina and releases sperm.

**Petals** - Structures that surround the reproductive parts of a flower. They are often brightly coloured and fragrant to attract insects.

**Placenta** - A temporary organ attached to the lining of the uterus during pregnancy. It has a variety of roles including the exchange of gases, nutrients and excretory products between fetal and maternal blood, hormonal control, and serving as a barrier to pathogens and toxins.

**Pollen grain** - A single granule of pollen that contains the male gamete. In wind-pollinated plants, grains are small and produced in large numbers, whereas in insect-pollinated plants, they are large, sticky and produced in fewer numbers.

**Pollen tube** - A hollow tube that grows from a pollen grain to the embryo sac in the ovule after pollination. It delivers the male gametes.

**Progesterone** - A female sex hormone secreted by the corpus luteum that maintains the uterus lining. It also inhibits FSH and LH release.



**Prostate gland** - A gland located between the bladder and the penis that secretes an alkaline fluid to neutralise vaginal acidity.

**Rubella** - An infection (known as the German measles) caused by the Rubella virus. Pregnant women who contract rubella are at risk of a miscarriage or still-birth.

**Scrotum** - A pouch of skin that holds the testes and maintains an optimum temperature for sperm production.

**Self-pollination** - A type of pollination in which pollen is transferred from an anther of a plant to a stigma of the same plant. This results in plants with less genetic diversity.

**Sepals** - Modified leaves that surround and protect the flower when it is in the bud.

**Sexually transmitted infections (STI)** - A group of infections (e.g. HIV) that are transmitted via bodily fluids through sexual contact or intercourse.

**Sexual reproduction** - A form of reproduction involving the fusion of male and female gametes to form a zygote. It creates genetic variation.

**Sperm cell** - A specialised male sex cell involved in reproduction. It consists of a head containing the acrosome and haploid nucleus, a midpiece containing many mitochondria and a flagellum.

**Sperm duct** - The tube that transfers sperm from the epididymis during ejaculation.

**Stamen** - The male part of the plant consisting of an anther and a filament. It is involved in the production of male gametes in the form of pollen grains.

**Stigma** - The sticky structure of the carpel that receives pollen grains.

**Testes** - A pair of organs in the male reproductive system that produce sperm and testosterone.

**Testosterone** - A male sex hormone released by the testes that is involved in the development of the male secondary sexual characteristics.

**Umbilical cord** - A tube containing blood vessels that connects the fetus to the placenta.

**Urethra** - The tube responsible for the transfer of urine during urination (in both males and females) and semen during ejaculation (in males).

**Uterus** - The organ in the female reproductive system in which the embryo develops.

**Vagina** - The muscular canal that extends from the cervix to the outside of the body. During sexual intercourse it stimulates the penis to ejaculate.

**Wind-pollinated flower** - A type of flower that relies on wind to transfer pollen grains between flowers.



**Zygote** - A cell formed via the fusion of a male and female gamete. **The nucleus of a zygote is diploid.**

