**[12.0.0 Reproduction in Plants and Animals (50 Lessons)](http://www.elimu.net/Secondary/Kenya/KCSE_Student/Biology/Form3/Reproduction/Reproduction.htm)**

1. - Acts as a shock absorber protecting the foetus from external mechanical damage;
   * Prevents the foetus from desiccation;
   * Suspends the foetus allowing it to grow and move free; ***(any 2, 2 marks)***

1. A – Forms a zygote which later develops to an embryo;

B – Degenates;

***NB; The embryo sac is inverted***.

3. (a) Parietal;

(b) A – Ovules/seeds; Reject ovule/seed.

4. (a) (i) Antipodal cells (1mk); Rej.Antipodal cell

(ii) Egg cell (1mk); Rej. Egg cells.

(b) Endosperm.

5. - Stimulates synthesis of sperms. (1mk);

* + Stimulates interstitial cells to release the male hormones known as androgens. (1mk);

6. (a) Graph.

* 1. (i) - Progesterone 10.5 +\_ 0.5; (1mk)

- HCG 48.0 +\_ 1.0; (1mk)

* + 1. 2.6 +\_ 0.5; and 19.4 +\_ 0.5;

(1mk) (1mk)

* + 1. 0 – 8 weeks – sharp increase; to ensure that corpus luteum does not disintegrate; to continue producing progesterone/oestrogen hence prevents degeneration of endometrium;

0 – 20 weeks, a sharp decline; the placenta has started to produce

progesterone and oestrogen to maintain pregnancy; Max 4

* 1. - Causes proliferation of the uterine wall in preparation of implantation;
     + Inhibits production of FSH;
     + Inhibits contraction of uterus and maintain pregnancy.
     + Stimulates growth of mammary glands; Max 3
  2. Stimulates development of secondary sexual characteristics; Acc. A specific characteristics e.g. spermatogenesis.

7. a) To prevent entry of further spermatozoa; (1mk)

To protect the zygote;

b)

|  |  |
| --- | --- |
| Egg | Sperm |
| i)has no tail | Has tail |
| ii)Contain a yolk | Does not contain a yolk |
| iii)No acrosome | Has acrosome |
| iv)no mitochondria | A lot of mitochondria |
| v)large insize | Small size |

8. Tip of the pollen tube burst open/ tube nucleus disintegrates; Reject degenerate.

One of the male nuclei fuses with egg cell nucleus; To form a diploid zygote; the remaining male nucleus fuses with the polar nuclei to form a triploid endosperm nucleus; (3mks)

9. Having unprotected sex with infected person; coming into contact with infected blood; (2mks)

10. (a) **A** pollen tube; √  **B**  synergids; √

* 1. (i) zygote; √

(ii) Primary endosperm; √

* 1. C - diploid; √

D **–** Triploid**;** √

* 1. is the process by which one male nucleus fuses with the egg cell to form a zygote; √ and another nucleus fuses with the polar nuclei to form primary endosperm; √
  2. synergids; √

11**. Wind dispersal.**

* Some seeds/fruits have parachute (hair like structures extending from the seed coat/ fruit wall; which increases the surface area for floating in air; to be blown over a long distance e.g in sow thistle.
* Some seeds have papery extensions (winged seed/fruits) to increase the surface for floating in air so that they can easily be carried by wind e.g jacaranda, spathola sp
* Some plants have ovaries which are capsule shaped which on drying up burst open along lines of weakness thus scattering the seed into the air; this is called censor mechanism e.g simsim  Some seeds are light in weight to be easily blown by wind.

**Animal dispersal**

* Having hooks on the ovary wall or calyx ; which stick on the fur/clothes of animals passing by e.g. blackjack fruit, devils horsewhip fruit
* Seeds having a hard indigestive seed coat which passes through the animals digestive system undigested e.g. guavas
* Being brightly coloured when ripe to attract animals e.g oranges,guavas,tomatoes
* Being large in size and conspicuous to be seen by animals easily e.g. oranges  **Water dispersal**
* Having fibrous walls containing many air pockets for easy floating on water so that it can be carried by water waves/scatter.

12. i) Protogyny (1mk)

Stigma matures earlier and is ready to receive pollen grains before the anthers are ready;

ii) Dioecism (1mk) Male and female gametes occur in separate plants;

13. a) Q – Antipodal cell(s);

* + 1. – Polar nucleus / body;
    2. – Functional egg cell;
  1. pathway through which male nuclei reach the embryo sac / improves efficiency of fertilization; its tip produce lytic enzyme which dissolves the embyo sac wall to allow entry of male nuclei;

14. (a) No mixing of genetic material thus no variation

* 1. - protandry and protogyny
     1. Heterostyly
     2. Self-sterily and incompatibility

Bright coloured petals, scented and production of nectar in bisexual flowers.

*Mark first two*

15. (a) K – Ovary

1. – Integument
2. – Ovule / embryo sac
3. L – testa

N – Zygote

1. - Protondry / protogyny

-Heterostyly

-Self sterility / in computability.

16. (a) Produces progesterone / oestrogen;

b) Amniotic fluid absorbs shock; prevent dehydration; placenta filter / block pathogens from mother; umbilical cord / placenta attach embryo to mother. (2mks)

1. (a) Wind; (1mk)

b) Presence of hairs (b) tied to (a) √1 (1mk)

1. a) Wind; (1 mark)

b) To enable it trap pollen grains in the air; (1 mark)

1. (i) Centriole – produce spindle fibre; (1mk)

(ii) Centromere- holds chromatids together/provide point of attachment to spindle fibres; (1mk)

1. (a) (i) Testis – have seminiferous tubules for spermatogenesis/are glandular to secrete hormones ; (1mk)

(ii) uterus – Hollow to accommodate developing foetus/muscular to expel foetus; (1mk)

Placenta fully developed and secrete progesterone and small quantity of oestrogen to maintain pregnancy; (1mk)