

NAME: \_\_\_\_\_ ADM NO: \_\_\_\_ CLASS: \_\_\_\_\_

DATE: \_\_\_\_\_ SIGN: \_\_\_\_\_

FORM 3  
BIOLOGY  
TERM 3, 2023

MARKS HERE

MARKING SCHEME

INSTRUCTIONS: (answer all questions)

TIME: (1h 30 min)

1. (a) What is asexual reproduction? (1mk)

**Type of reproduction where an already existing individual develops into a new free existing individual ; does not involve the fusion of male and female gametes.**

- (b) State three types of asexual reproduction . ( 3mks)

**binary fission**

**Sporulation**

**budding**

2. Give three differences between mitosis and mitosis and meiosis . (3mrks)

**mitosis**

**Daughter cells are identical to the mother/ parent cell.**

**Homologous chromosomes do not associate with each other.**

**There is no chiasma formation hence no crossing over/variation.**

**Occurs in somatic cells leading to growth.**

**Takes place in only one nuclear division of four stages.**

**meiosis**

**Four daughter cells are formed.**

**The number of chromosomes is halved/ haploid cells are formed.**

**Daughter cells are not identical with the parent/ mother cell.**

**Homologous chromosomes associate with each other.**

**There is chiasma formation hence crossing over/variation**

3. What is meant by the terms: - (2mks)

i) Epigynous flower . **ovary is located below other floral parts**

ii) Staminate flower; **flower with male parts**

4. Differentiate between a seed and fruit. (2mrks)

**A seed is covered by a testa/seed coat ; fruit is covered with pericarp.**

**A seed has one scar/hilum ;fruit has two scars (where it was attached to the fruit stalk and style.**

**A seed is formed from ovule ; the fruit is formed from ovary.**

5. Name three changes that occur in the flower after fertilization. (3mrks)

**Ovary form a fruit.**

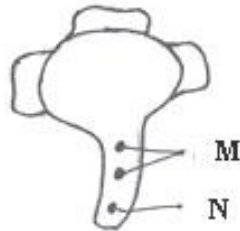
**Ovule develops into a seed. □ Ovary wall forms pericarp.**

**Integuments form a seed coat/ testa.**

**Zygote forms embryo.**

**Primary endosperm nucleus develops into endosperm**

6. The diagram below shows a pollen tube as it develops down the style.



- a. Name the parts labeled M and N. (2mrks)

**M male nuclei**

**N tube nucleus**

- b. State the function of the part labeled M. (1mrks)

**Directs the growth of the pollen tube**

7. What do you understand by the term double fertilization? (1mrks)

**Fusion of one male nucleus with egg cell to form diploid nucleus;and the other male nucleus with two polar nuclei to for triploid nucleus.**

8. State three ways in which flowers prevent self-pollination. (3mrks)

**Hermaphrodite; Heterostyly; Dioecism;monoecism**

9. Give three roles of amniotic fluid. (3mrks)

**Protects the foetus against mechanical damage/ injury/acts as a shock absorber.**

**Provides a medium for foetus to move about/ suspends the embryo providing it with support.**

**Prevents the foetus from drying.**

**It ensures constant temperature within the womb.**

**Equalize pressure around the foetus.**

10. Name and give the roles of hormones involved in milk let-down . (2mrks)

**Prolactin; milk production**

**Oxytocin; milk release**

11. Name the hormone that: (2mrks)

- a. Stimulate the contraction of uterus during birth.

**oxytocin**

- b.Stimulate the disintegration of corpus luteum when fertilization fails to take place.

**Human chorionic gonadotrophin hormone**

12. Describe the role of the following hormones in the menstrual cycle (12mrks)

**Follicle Stimulating Hormone (FSH); Produced by the anterior lobe of the pituitary gland; it stimulates the development of the Graafian follicle in the ovaries; stimulates the ovarian tissue/wall; to secrete oestrogen;**

**Oestrogen; Brings about/stimulates the healing and repair of the uterine wall; after menstruation; stimulates the pituitary gland to secrete luteinising hormone;**

**Luteinising Hormone (LH) Produced by the pituitary gland; cause the bursting of the Graafian follicle; to release a mature egg/ovum/causes ovulation; stimulates the reorganisation/conversion of the Graafian follicle to form corpus luteum; stimulates the corpus luteum; to secrete progesterone hormone;**

**Progesterone Secreted by the corpus luteum; it stimulates the thickening of the endometrium/uterine wall; in preparation for implantation; inhibits secretion of the Follicle Stimulating Hormone; therefore preventing further development of the Graafian follicle;**

13. Describe the adaptations of male reproductive system to its functions.(10mrks)

**The testes have sertoli cells that nourish the sperms. The testes are located to hang outside the body to provide a cooler environment for sperm production.**

**The Seminal vesicle (connected to the sperm duct a short distance from where the sperm duct enters the urethra) secretes an alkaline fluid which contains nutrients for the sperms.**

**The Prostate gland (is located at the junction between the sperm duct and urethra) secretes an alkaline fluid to neutralize the vaginal fluids and activate the sperms.**

**The Cowper's gland (located below the prostate gland) secretes an alkaline fluid to neutralize the acidity along the urethra (caused by pH variations of urine).**

**The alkaline fluid and sperms form semen.**

**The Sperm duct/ vas deferens is tubular connecting the epididymis and urethra and is used for passage of sperms/ acts as ejaculatory duct.**

**The Urethra is tubular to expel urine and semen (hence said to have urino-genital role).**