

FEDERAL REPUBLIC OF SOMALIA

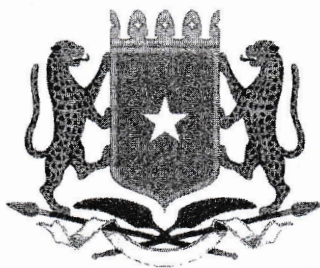
GRADE 12 EXAMS, 2020

# BIOLOGY



OFFICE OF EXAMINATIONS AND CERTIFICATION





**FEDERAL REPUBLIC OF SOMALIA**  
**MINISTRY OF EDUCATION CULTURE AND HIGHER EDUCATION**  
**OFFICE OF EXAMINATIONS AND CERTIFICATION**

**Somali Certificate for Secondary Education**

<b>Subject:</b>	<b>Biology</b>
<b>Grade:</b>	<b>12</b>
<b>Exam Year:</b>	<b>2020</b>
<b>Total Marks:</b>	<b>100</b>
<b>Allowed Time</b>	<b>2 hours</b>

**Please read all the instructions carefully before attempting the questions:**

- Write your full name, roll number and school name in English on the space provided on your answer booklet.
- Write all your answers on the answer booklet. Answers on the question paper will not be marked.
- Write legibly in dark blue pen **only**.
- Answer all questions as provided in the question paper.
- All rough work must be on the answer booklet. Any work outside of the answer booklet will not be marked.
- Adhere to examination regulations and allowed time.

**Check that your examination question paper has 5 printed pages excluding the cover page.**

**PART A: (10 MARKS)**

**Choose the correct answer and write it in the answer booklet.**

1. Which of the following neurons transmit nerve impulses from the central nervous system to the effector organ?
  - a. Sensory
  - b. Motor
  - c. Relay
  - d. Cranial
  
2. Which of the following glands is classified for secreting hormone thyroxine?
  - a. Adrenal gland
  - b. Pituitary gland
  - c. Thyroid gland
  - d. Pancreas
  
3. Choose the female organ that produce the ovum.
  - a. Oviduct
  - b. Ovary
  - c. Uterus
  - d. Fallopian tube
  
4. The part of the flower where the pollen grain is produced is called
  - a. Stigma
  - b. Petal
  - c. Anther
  - d. Filament
  
5. Select the part of the brain which controls the homeostatic functions
  - a. Cerebrum
  - b. Thalamus
  - c. Hypothalamus
  - d. Pituitary gland

6. Which of the following statements best describes the structure of the human sperm?
  - a. Ovoid head, short neck and nucleus
  - b. Middle piece, short neck and mitochondria
  - c. Short neck, nucleus and mitochondria
  - d. Ovoid head, short neck, middle piece and tail
  
7. Which of the following traits is identified as an example of continuous variation?
  - a. Sex
  - b. ABO blood group
  - c. Tongue rolling
  - d. Height
  
8. When a homozygous man from blood group **A** marries a woman who is homozygous from blood group **B**, the probability of them producing an offspring of **AB** blood group is
  - a. 25%
  - b. 50%
  - c. 75%
  - d. 100%
  
9. The type of chromosomal mutation that occurs when a section of the chromatid break and fail to reconnect to any other chromatid is called...
  - a. Duplication
  - b. Deletion
  - c. Inversion
  - d. Translocation
  
10. Which of the following glands secretes the Follicle Stimulating Hormone (FSH)
  - a. Corpus luteum
  - b. Adrenal gland
  - c. Pituitary gland
  - d. Thyroid gland

**PART B: (10 Marks)**

**Choose the correct answer for each of the blanks below and write it in the answer booklet**

1. Name two types of reproduction .....and .....
2. Describe the condition in which the embryo gets attached to the wall of the oviduct. (2 mrks)
3. The bacteria that causes syphilis is known as.....
4. The gene that determines whether a child becomes a male or female is located on a specific pair of chromosome called.....

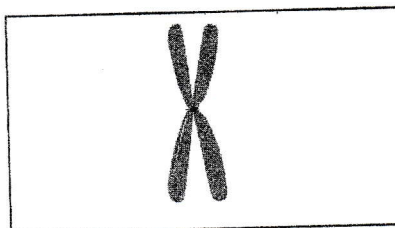
**Section C: (80 Marks)**

**Answer the following Questions in the answer booklet.**

1. a. Define the term "Genetics" (1 mark)  
b. State the two types of mutation (2 Marks)
2. Describe the functions of the different parts of female reproductive system. (5 Marks)
3. Explain how impulses are passed from receptors to effectors via the central nervous system by drawing a well-labelled diagram (4 Marks)
4. Nocturnal animals such as the owl are capable of seeing fairly well at night. Analyze the retinal adaptations of the owl help it move at night. (2 Marks)
5. Using diagram illustration, analyze the genetic cross between a man with blood group A and a woman with blood group B producing offspring of all the four blood groups. (2 Marks)
6. Describe the differences between Phenotype and Genotype. (2 Marks)
7. Discuss the effects of overproduction of thyroxine on humans. (3 Marks)
8. Differentiate between internal fertilization and external fertilization (2 Marks)



9. Using the diagram below, briefly explain how the segregation of the chromatids occurs. (2marks)



10. Define the following terms:

(1Mark each )

- i. Gestation period
- ii. Abortion
- iii. *Ovulation*
- iv. Menopause

11. Explain the physiological importance of the testes being outside the body (3 marks)

12. Predict the F1 generation produced from a cross between a purebred long winged with vestigial winged flies. Let stand "W" for long winged and "w" for vestigial winged flies.

(4 Marks)

13. Sketch and label the male parts of a flower.

(3 Marks)

14. Mrs. Fatima claims that her child was wrongly identified at a hospital, thus taking the wrong baby. Both Fatima and her husband are blood group A while the baby's blood group is O. Evaluate whether Fatima is justified in her claim by making a genetic cross using a punnet square.

(4 Marks)

15. Describe any two sex linked diseases.

(2 Mark)

16. Describe the reflex action that will lead to the withdrawal of a hand after touching a hot object.

(5 marks)

17. Estimate the number of teeth in adult human being.

(1 Mark)

18. Classify the following animals into carnivores, herbivores and omnivores (1 mark each)

- i. Elephant.....
- ii. Human being.....
- iii. Cat.....
- iv. Rat.....
- v. Goat.....

19. Name the parasite that causes malaria to humans (1 mark)

20. Discuss any two characteristics of living organisms (2 Marks)

21. If the base sequence of a DNA strand is A C G, T C A, G T A. Synthesize the complimentary strand of this DNA. (2 Marks)

22. A person is complaining of short sightedness. Explain the best possible correction method that can be used for this problem. (3 Marks)

23. Explain why is it difficult to cure the third stage of syphilis? (1 mark)

24. Discuss the *significance of meiosis*. (3 Marks)

25. Describe the role of placenta during pregnancy to foetus (4 marks)

26. If a girl started ovulation at the age of 14 and continued until the age of 49, calculate the number of eggs she produced during this. (3 Marks)

27. Draw and label the main parts of a well-designed diagram for the female reproductive system. (5 marks)