2013
BIOLOGY III
1 hour

NATIONAL EXAMINATIONS COUNCIL
Senior School Certificate Examination

1 hour

BIOLOGY
PAPER III

Do **not** open this paper until you are told to do so. While waiting, read the following carefully:

1. Use **HB** pencil throughout.
2. Complete the top section of your answer sheet, where it is **not** customised, as follows:
   (a) In the space marked *Candidate's Name*, write your **surname** in capital letters followed by your **other names.**
   (b) In the space marked *School Name*, write the name of your **centre**, and in the space marked *Subject Name*, write **BIOLOGY III.**
   (c) In the box marked *Subject Code*, write the digits **2013** in the spaces. There are numbered spaces in line with each digit. Shade carefully the corresponding space with th same number under each digit.
   (d) In the box marked *Registration Number*, write your **registration number** in the spaces at the top of the box. Shade the corresponding numbered spaces in the same way as for Subject Code.
3. An example is given below. This is for a candidate whose name is **GAMBO Bamidele Uch with serial number 0010, registration number 8765432100BD,** and who is taking **Biology I (2013).**

National Examinations Council **ANSWER SHEET**

Use HB pencil to complete this form. Mark like this ▬ . Erase errors thoroughly.

Examination Type	Candidate's Serial No. in School	Subject Code	Registration Number
SSCE ▬	0 0 1 0	2 0 1 3	8 7 6 5 4 3 2 1 0 0 B D
BECE (I) (II) ▭ ▭			
Other ▭			
If Other, write exam type in the box below			
Absent ▭			

Candidate's Name	GAMBO Bamidele Uche
School Number	0210231
School Name	Government Secondary School, Minna
Subject Name	Biology III

PAPER III

Answer **all** questions.

Each question is followed by **five** options lettered **A** to **E**. Choose the correct option for each question and shade in **pencil** on your answer sheet the answer space that bears the same letter as the option you have chosen. Give only **one** answer to each question and erase completely any answer you wish to change. Do **all** rough work on this question paper.

An example is given below:

Which of the following organisms is unicellular?

A. Fern
B. Grass
C. Moss
D. Paramecium
E. Spirogyra

The correct option is 'Paramecium' which is lettered **D**. Therefore, answer space **D** would be shaded as shown below:

[A] [B] [C] [D] [E]

1. The basic structural and functional unit of life is

   A. cell.
   B. organ.
   C. organism.
   D. system.
   E. tissue.

Use **Fig. 3.1** to answer questions **2** and **3**.

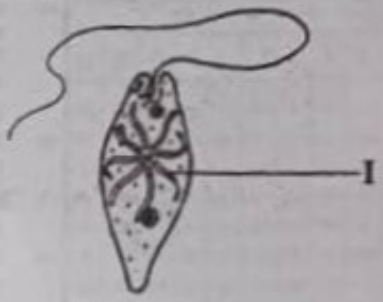

Fig. 3.1

2. **Fig. 3.1** represents a/an

   A. amoeba.
   B. chlamydomonas.
   C. euglena.
   D. paramecium.
   E. volvox.

3. The part labelled **I** is called

   A. chloroplast.
   B. eye spot.
   C. flagellum.
   D. macro nucleus.
   E. nucleus.

4. The tissue that is **not** found in the stem and root of monocots is

   A. cambium.
   B. cortex.
   C. epicycle.
   D. pith.
   E. xylem.

23. The vitamin responsible for clotting of blood is

A. A.
B. B.
C. C.
D. D.
E. K.

24. White blood cell is also called

A. erythrocyte.
B. leucocyte.
C. phagocyte.
D. plasma.
E. thrombocyte.

25. The number of chambers in the heart of frog is

A. 2.
B. 3.
C. 4.
D. 5.
E. 6.

26. The disease caused by deficiency of Vitamin C is

A. beriberi.
B. goitre.
C. kwashiorkor.
D. rickets.
E. scurvy.

27. The branch of biology that deals with the study of cell is called

A. anatomy.
B. cytology.
C. ecology.
D. embryology.
E. physiology.

28. A species of frog disappears from a pond in harmattan. The part of the pond where it lives is its

A. atmosphere.
B. biosphere.
C. environment.
D. habitat.
E. niche.

29. Spices include the following **except**

A. cinnamon.
B. cloves.
C. ginger.
D. spinach.
E. turmeric.

30. The percentage of oxygen in inhaled air is

A. 20.
B. 21.
C. 22.
D. 23.
E. 24.

31. Excess amino acids are converted into urea by the

A. heart.
B. kidney.
C. liver.
D. muscles.
E. spleen.

32. A farmer wants to store maize safely for several months. The most suitable place to store it is

A. baskets.
B. ovens.
C. refrigerators.
D. sacks.
E. silos.

42. Which of the following processes is not involved in the carbon cycle?

A. Burning
B. Decay
C. Photosynthesis
D. Respiration
E. Transpiration

43. The type of placentation in tomato fruit is

A. axile.
B. basal.
C. free-central.
D. marginal.
E. parietal.

44. The part of mammalian brain that controls voluntary action is

A. cerebellum.
B. cerebrum.
C. cranial nerve.
D. medulla oblongata.
E. olfactory lobe.

Study **Fig. 3.3** and use it to answer questions **45 - 47**.

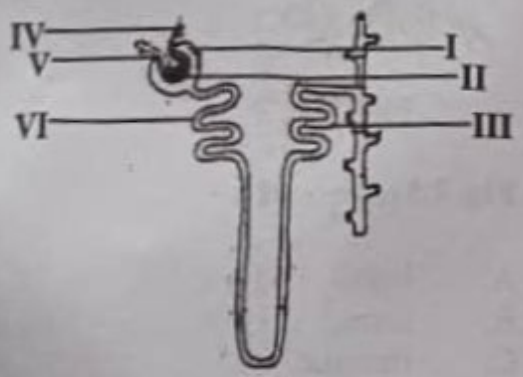

Fig. 3.3

45. **Fig. 3.3** represents a/an

A. alveolus.
B. medulla.
C. nephron.
D. neurone.
E. villus.

46. Ultra filtration takes place in the part labelled

A. **I.**
B. **II.**
C. **III.**
D. **IV.**
E. **V.**

47. Selective re-absorption of materials takes place in the parts labelled

A. **I and II.**
B. **II and V.**
C. **III and IV.**
D. **III and VI.**
E. **V and VI.**

48. The part of the ear responsible for maintenance of balance and equilibrium is

A. cochlea.
B. eustachian tube.
C. ossicles.
D. semi-circular canal.
E. tympanic membrane.

49. The judicious use of natural resources by man is referred to as

A. afforestation.
B. conservation.
C. desertification.
D. preservation.
E. regeneration.

50. The hormone responsible for contraction of the womb during birth is

A. insulin.
B. oestrogen.
C. oxytocin.
D. progesterone.
E. prolactin.

Use **Fig. 3.4** to answer questions **51** and **52**.

Fig. 3.4

51. The plant in **Fig. 3.4** is a/an

A. epiphyte.
B. halophyte.
C. hydrophyte.
D. mesophyte.
E. xerophyte.

52. The part labelled **I** is the

A. flower.
B. leaf.
C. root.
D. stem.
E. sucker.

53. Which of the following is **not** part of the female reproductive system?

A. Fallopian tube
B. Ovary
C. Seminal vesicle
D. Uterus
E. Vagina

54. Haploid number of chromosomes in man is

A. 23.
B. 24.
C. 42.
D. 46.
E. 48.

55. The backward flow of blood from the right ventricle into the right auricle of the heart is prevented by a valve called

A. aortic.
B. bicuspid.
C. mitral.
D. pulmonary.
E. tricuspid.

56. The product of the fusion of male and female gametes is a/an

A. egg.
B. embryo.
C. foetus.
D. sperm.
E. zygote.

Study **Fig. 3.5** and use it to answer questions **57** and **58**.

Fig. 3.5

57. **Fig. 3.5** represents a

A. bulb.
B. corm.
C. rhizome.
D. runner.
E. tuber.

33. If a urine sample of a patient tested with Fehling's solution gave an orange colour precipitate, it shows presence of

A. glucose.
B. lipid.
C. nitrogen.
D. sucrose.
E. water.

34. The exoskeleton of insects is made up of

A. cartilage.
B. chitin.
C. keratin.
D. melanin.
E. tendon.

35. Sudan savannah is found in the following states **except**

A. Adamawa.
B. Borno.
C. Ekiti.
D. Niger.
E. Yobe.

36. The number of lumbar vertebrae in rabbit is

A. 4.
B. 5.
C. 7.
D. 9.
E. 12.

37. Iron deficiency in man causes

A. anaemia.
B. goitre.
C. oedema.
D. rickets.
E. scurvy.

Use **Fig. 3.2** to answer questions **38** and **39**.

Fig. 3.2

38. The stage of mitotic division represented in **Fig. 3.2** is

A. anaphase.
B. interphase.
C. metaphase.
D. prophase.
E. telophase.

39. The part labelled **I** is the

A. chromosome.
B. centromere.
C. gene.
D. nucleus.
E. spindle.

40. The function of prolactin in human is to

A. induce birth by contraction.
B. induce milk production.
C. induce ovulation.
D. stimulate growth of long bones.
E. stimulate secretion of testosterone.

41. A hygrometer is used for measuring

A. light intensity.
B. relative humidity.
C. temperature.
D. turbidity.
E. wind speed.

5. The increase in size of tree trunk is caused by constant cell division of

A. bark.
B. cambium.
C. phloem.
D. sclerenchyma.
E. xylem.

6. The structure between the phloem and xylem is referred to as

A. cambium.
B. cortex.
C. endodermis.
D. epidermis.
E. pith.

7. The movement of water molecules from a region of higher concentration to a region of lower concentration is known as

A. diffusion.
B. flaccidity.
C. haemolysis.
D. osmosis.
E. turgidity.

8. Bacteria that are spherical in shape are called

A. bacilli.
B. cocci.
C. spiralla.
D. spirochete.
E. vibrio.

9. The part of the human reproductive system that serves as birth canal is

A. oviduct.
B. urethra.
C. uterus.
D. vagina.
E. vulva.

10. The function of the cell membrane is to

A. carry out respiration.
B. control substances entering and leaving the cell.
C. receive the genetic information.
D. synthesise proteins.
E. transmit hereditary materials.

11. The central nervous system is made up of the brain and

A. medulla oblongata.
B. olfactory lobe.
C. receptor cells.
D. sensory neurone.
E. spinal cord.

12. The stimulus for the sense of sight is

A. chemical.
B. light.
C. sound.
D. touch.
E. water.

13. Which of the following hormones is produced by pancreas?

A. Adrenalin
B. Insulin
C. Oxytocin
D. Testosterone
E. Thyroxine

14. The function of luteinising hormone during the menstrual cycle is to

A. cause the maturation of an egg-bearing follicle in the ovary.
B. increase the number of released eggs.
C. maintain the lining of the uterus.
D. repair the uterine lining.
E. stimulate the release of the egg.

15. A population is described as a group of organisms

A. having different species capable of interbreeding.
B. living in a particular community.
C. of different phyla found in a particular habitat.
D. of different species living together in a habitat.
E. of the same species living together in a habitat.

16. The release of matured ovum from the ovary is referred to as

A. copulation.
B. gestation.
C. implantation.
D. menstruation.
E. ovulation.

17. How many conjugants are involved in sexual reproduction of paramecium?

A. 2
B. 3
C. 4
D. 5
E. 6

18. The monthly discharge of blood and cell debris in female is called

A. abortion.
B. haemorrhage.
C. menstruation.
D. ovulation.
E. secretion.

19. The gestation period in human is

A. 180 days.
B. 250 days.
C. 280 days.
D. 310 days.
E. 320 days.

20. Grass → Grasshopper → Toad → Snake → Hawk

The feeding relationship above represents a

A. food chain.
B. food web.
C. pyramid of energy.
D. pyramid of number.
E. trophic level.

21. The process by which a drop of ink spreads uniformly in a beaker of water is known as

A. absorption.
B. diffusion.
C. dyeing.
D. osmosis.
E. plasmolysis.

22. Failure of a species to adapt to any environment leads to

A. adaptation.
B. extinction.
C. migration.
D. predation.
E. succession.

58. The parts labelled **X** are

A. buds.
B. leaves.
C. nodes.
D. scales.
E. stems.

59. A female carrier ($X^N X^C$) marries a normal male ($X^N Y$). The percentage of the male offspring that are carrier is

A. 10%.
B. 25%.
C. 50%.
D. 75%.
E. 100%.

60. A pair of genes that controls a trait is called a/an

A. allele.
B. dominant.
C. hybrid.
D. recessive.
E. variant.

2012
BIOLOGY II
hour 30 minutes

Name:.....

Registration Number:.....

NATIONAL EXAMINATIONS COUNCIL

Senior School Certificate Examination

1 hour 30 minutes

BIOLOGY
PAPER II

Do **not** open this paper until you are told to do so. While waiting, read the following carefully:

Write your **Name** and **Registration Number** in the spaces provided at the top right-hand corner of this page.

Answer *three* questions in this paper.

Write your answer in blue or black ink in your answer booklet.

Include annotated diagrams if they help to make the answer clearer.

Only *Scientific* or *Latinized* names are acceptable.

Each question carries **20 marks**.

PAPER II

Answer **three** questions only.

1.a	(i)	Mention **four** endocrine glands in man.	**(4 marks)**
	(ii)	Explain the effects of high salinity on organisms in a marine environment.	**(4 marks)**
	(iii)	Give **two** examples of macro nutrients.	**(2 marks)**
b	(i)	With the aid of a diagram, describe the carbon cycle.	**(6 marks)**
	(ii)	List **four** factors necessary for osmosis to occur in plants.	**(4 marks)**
2.a	(i)	In a tabular form, state **three** differences between monocot plants and dicot plants.	**(6 marks)**
	(ii)	State **three** characteristics of tropical rain forest.	**(3 marks)**
b	(i)	Describe the process by which the roots of plant absorb water and dissolved mineral salts from the soil to the leaf.	**(6 marks)**
	(ii)	List **two** examples of false fruits.	**(2 marks)**
	(iii)	Give **three** functions of proteins in the human diet.	**(3 marks)**
3.a	(i)	Mention **five** characteristics of the class Aves.	**(5 marks)**
	(ii)	List **four** examples of supporting tissues in plants.	**(4 marks)**
	(iii)	Name **two** diseases of the kidney.	**(2 marks)**
b	(i)	Explain the process of fertilisation in humans.	**(7 marks)**
	(ii)	Enumerate **two** effects of flooding on the ecosystem.	**(2 marks)**

4.a (i) Highlight **five** functions of the liver. **(5 marks)**

(ii) Explain the process of double circulation in mammal. **(5 marks)**

b (i) Draw a well labelled diagram **(8 – 10 cm)** long of the female reproductive system in human. **(6 marks)**

(ii) State **four** features that make mosquitoes adaptable for the spread of malaria. **(4 marks)**

5.a (i) Define binary fission. **(2 marks)**

(ii) Give **four** functions of UNICEF. **(4 marks)**

(iii) List **two** non-essential parts of a flower. **(2 marks)**

b (i) A pure breed of white rabbit **(WW)** was crossed with a pure breed of brown rabbit **(ww)**. Using genetic cross of the f_1 generation, determine the genotypic and phenotypic ratios of f_2 generation. **(8 marks)**

(ii) Itemise **four** courtship behaviours in animals. **(4 marks)**