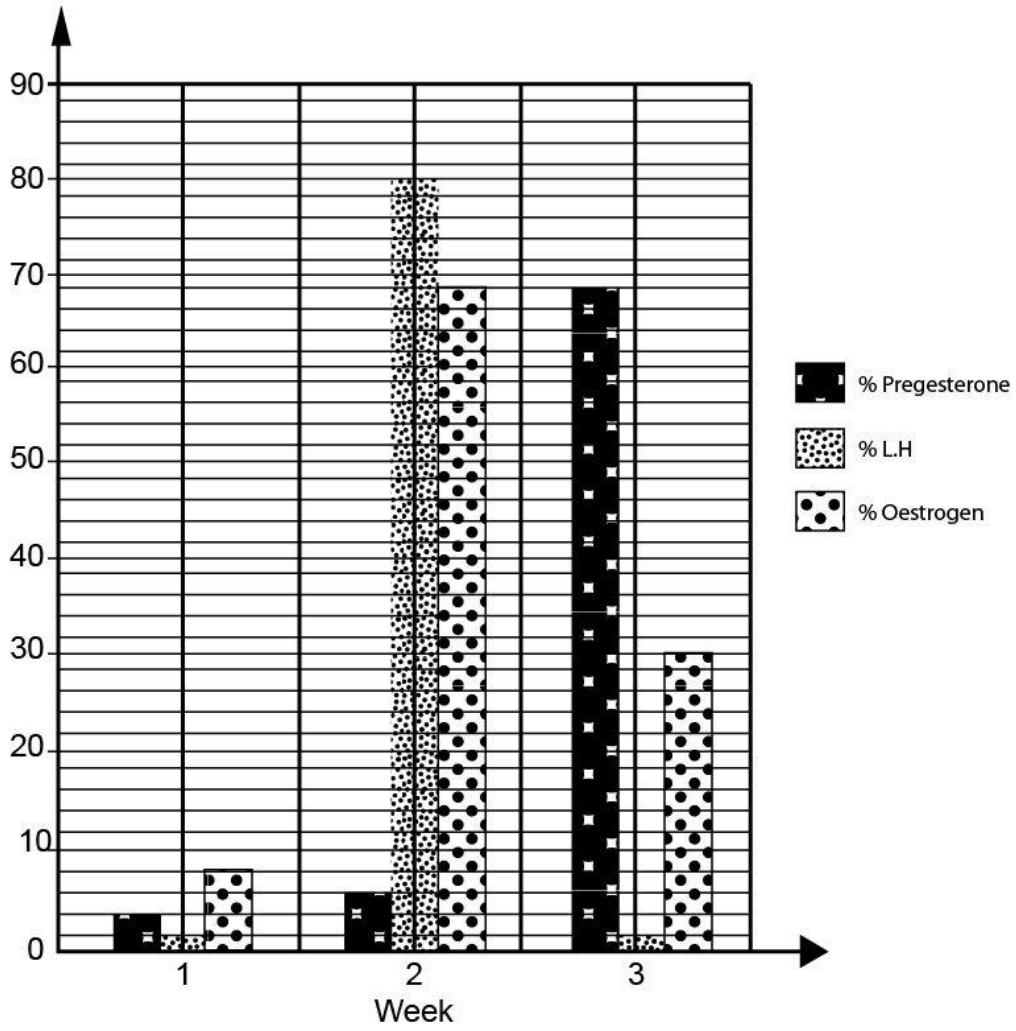
UBIOTA BIOLOGY SEMINAR QUESTIONS S4
HELD AT KYAMBOGO 17th JUNE, 2018

1. An investigation on the level of hormones in a mature female over a period of 3 weeks was analyzed and the percentage of hormones progesterone, luteinizing hormone and oestrogen was determined and the figure below drawn on scale to represent the level of hormones.



(a) From the bar graph drawn state the levels (percentage) the hormones in each respective week and fill the table shown below.

Week 1	% progesterone	% L.H	% Oestrogen
1			
2			
3			

(b) From the results filled in the table identify the week in which the female was undergoing;- (and give reasons)

(i) Menstruation. (ii) Ovulation

(c) Suggest another hormone that would be in high concentration during the first week and give reasons for your answer.

(d) State the significance of high progesterone concentration in blood during the third week.

(e) State 2 roles of;-

(i) Oestrogen (ii) Progesterone

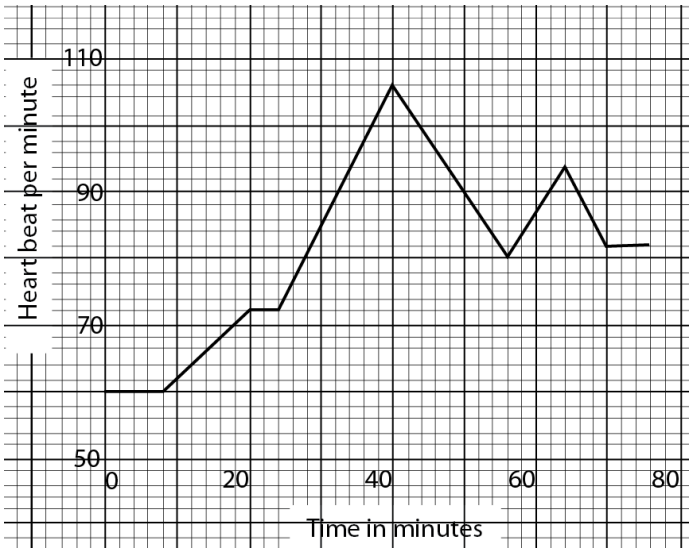
(f) Explain the significance of the varying changes in the percentage of hormones in the menstrual cycle.

2. An investigation was carried out on an individual to determine the changes on the heart beat during a different interval of body activity at a time of the day and a specified time interval. The activities are shown below in the **Table 3** and results obtained are shown in the graph below.

Table 3

Time of day	Individual Body activity
At night	Sleeping
Early morning	Waking up
Mid-morning	Running
Evening	Freighted by a snake

Graph



(a) Suggest a suitable title of the graph.

(b) Describe the variation of the heart beat per minute for the individual up to the 56th minute as shown on the graph.

(c) From the graph, what is the heart beat of individual at

(i) 24 minutes

(ii) 62 minutes

(d) Suggest the range in time on the graph where the individual was;-

i. Running

ii. Sleeping

iii. Waking up

iv. Frightened by the snake

(e) Explain your answer for the mention time in

d) (i)

d) (iv)

(f) Mention any four factors which determine the rate of heart beat.

3. The figure below shows a soil profile, studied and investigated by a group of students.

a) (i) Identify the layers A,B,C

(ii) Suggest any two characteristic properties of each layer.

The profile was thoroughly investigated, the diameter of the soil particle were measured and recorded as shown below.

Particle size	**Average diameter**
Gravel	4.0mm
Sand	2.0mm
Silt	0.02mm
Clay	Less than 0.02mm

b) Describe the variation of each particle.

c) Explain the effect of;

(i) Capillarity

(ii) drainage

d) State the importance of the diameter size of soil particle to man;

(i) Clay

(ii) Sand

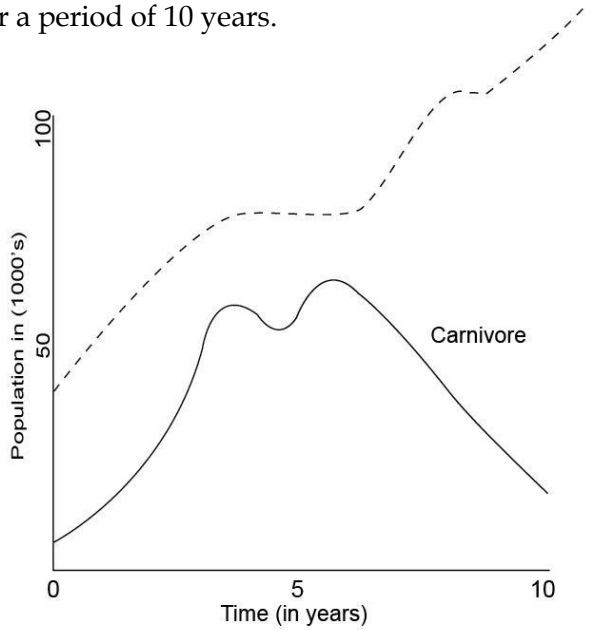
(iii) Gravel

Work out the ratio of surface of;

(i) Clay to sand

(ii) Clay to gravel

4. The following graph shows the relationship between co-existing populations of herbivores and their predators for a period of 10 years.



(a) What is the relationship between the population of herbivores and carnivores between 0 and 35 years?

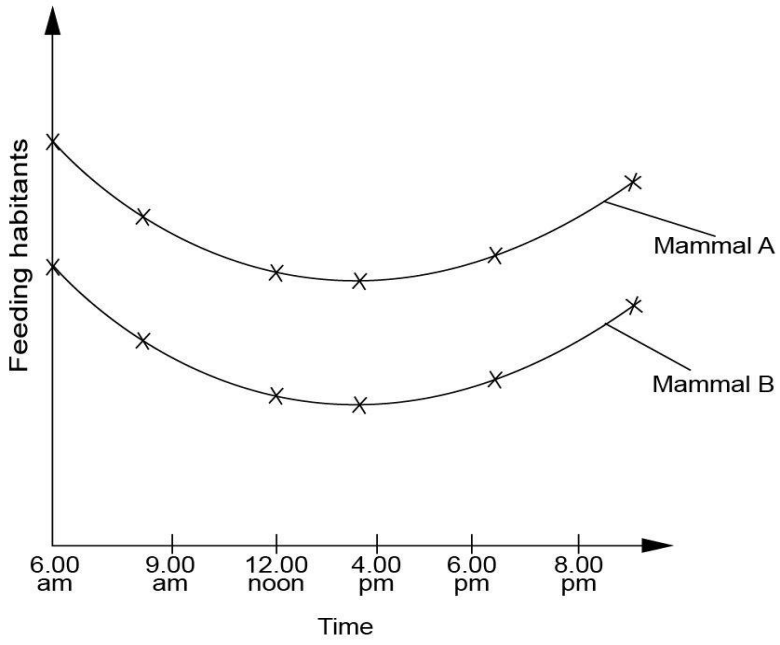
(b) Give possible reasons for the following;

(i) Decrease in the carnivore population between the 5th and 10th year.

(ii) Increase of herbivore population between 7th and 10th year.

(c) Suggest reasons that may cause decline in herbivore population after the 10th year.

5. The following graph shows results investigation on the feeding habits of two different sized mammals A and B of the same species. They study is conducted and results recorded every day for three months.



a) State the time of the day when both mammals had;
   (i) Consumed the least volume of food.
   (ii) Consumed the highest volume of food.

b) Suggest reasons for your answer in (a) (i) and (ii) above.

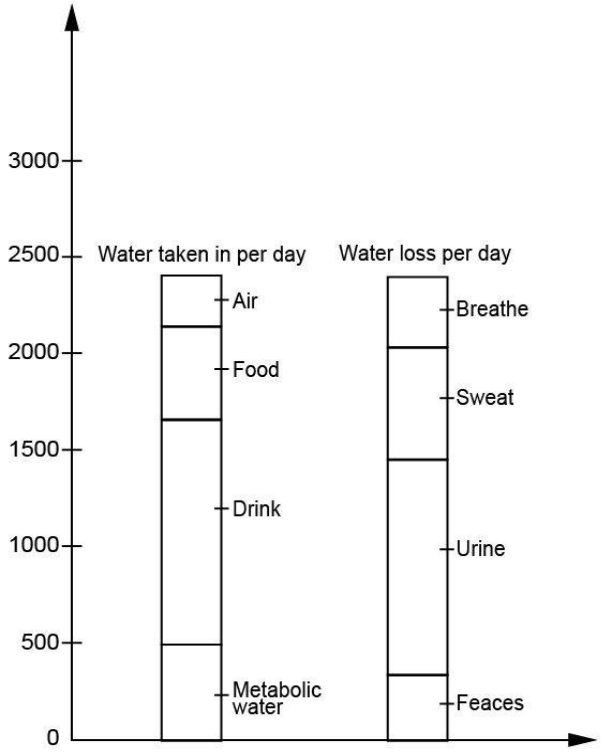
c) Suggest why there was a difference in food consumed by the two animals at all time.

d) State the effect of increasing the environmentaltemperature on the food uptake by the mammal B. Give reasons.

e) (i) What would be the behavior of mammal A at 8:00 pm when food supply is inadequate?
   (ii) Sate two structural adaptations mammal A may use to overcome the problem in (e) (i) above with time.

f) Suggest two ways in which a lizard responds to changes in environmental temperature.

6. Study the histogram below and use them to answer the questions that follow.



(a) From the diagram what volume of water is taken in the body?
   (i) When breathing?
   (ii) By drinking?

(b) What is the percentage of water lost by the body?
   (i) When sweating?
   (ii) When passing out faeces?

(c) From the figure above give two main ways in which the body loses water and two main ways in which the body gains water.

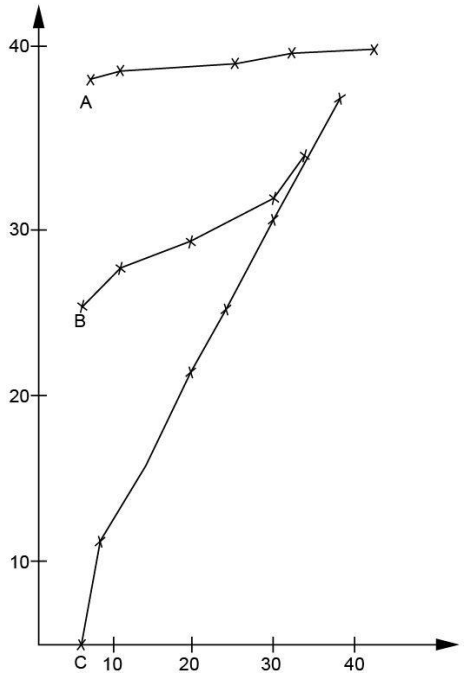
(d) (i) Name the process that is illustrated by the histogram.
   (ii) What evidence is shown in the diagram that supports your answer in (d) (i) above?

(e) Name two ways of water loss shown that are most likely to increase during and after strenuous exercise?

(f) (i) Name an organ in the body of a mammal that is likely to carry out this main function.

(ii) Give two more functions of the organ identified in (f) (i) above apart from that shown in the histogram.

7. The graph shows how the internal body temperature of a reptile (lizard), mammal, the (cat) and another mammal. (spiny-ant eater) change with external temperature.



(a) Name the animal each of the graphs A, B and C represents.

(b) What is the relationship between the internal body temperature of the named animal below and the temperature of the environment?

i) Lizard

ii) Cat

(c) Account for your answer in (b) (i) and (b) (ii)

(d) (i) From the graph, how are the changes of the temperature from day to night likely to affect the activity of the lizard and the cat?

Lizard

Cat

(ii) What advantage does this give to one of these animals over the other?

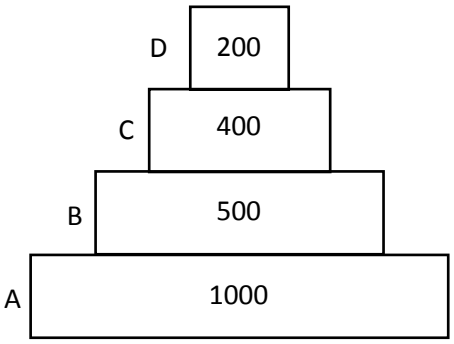
(e) (i) What is the body temperature of the spiny ant eater when the external temperature is

i) 50^0C?

ii) 35^0C?

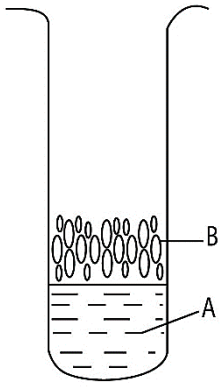
iii) From the shape of the graph, what would you expect to happen to its body temperature if the external temperature rose above 35^0C?

8. In an ecological tour made by students, a variety of organisms were observed and selected organism were counted and represented in a pyramid as shown below.



(a) Identify the type of pyramid with a reason.
(b) Suggest the type of organisms occupying level A, B, C and D.
(c) Describe the variation of organisms from A to D.
(d) Account for the number of organisms from A to D
(e) Describe the suitable method that was employed to determine the population of organisms found in
    i) A
    ii) B
(f) What is the role of organism A?

9. In an experiment identify the presence of vitamins in a food solution obtained by crushing cabbage was carried out.



(a) (i) Suggest the name of solution A and B.
    (ii) Describe how the test was carried out to identify Vitamin C
(b) The remaining solution was divided into 6 portions and boiled at a specific time and the test described in (a) (ii) above was further carried out on each solution. The time to decolorize the DCPP was recorded in seconds as shown in the table below.

Time the Cabbage is in boiling water in minutes	**Time to decolorize DCPP in seconds**
0	10
0.5	25
1	34
4	42
6	48

10	46

c) State the aim of the experiment.

d) Plot the result in the suitable graph

e) What do these results tell you about the Vitamin C?

f) Suggest an explanation for these results.

g) What does this suggest about cooking vegetable in order to preserve their Vitamin C constant?

Nutrition (photosynthesis)

10. Carbohydrates used during respiration and that formed during photosynthesis by a certain plant were measured over a period of 24 hours at an interval of 3 hours.

Time of day	Carbohydrates formed during photosynthesis (mg)	Carbohydrates used during respiration (mg)
12 am	0	10
3 am	0	10
6 am	5	10
9 am	30	10
12 pm	60	10
3 pm	30	10
6 pm	5	10
9 pm	0	10

a) Using the same axes, plot a graph of carbohydrates formed during photosynthesis and carbohydrates used during respiration against time.

b) Calculate the net carbohydrates formed by the plant.

c) At what time of the day does light compensation occur?

d) Account for the shape of the curve on the carbohydrates formed between;

i. 12.00am and 3.00a. ii. 3.00am to 12.00noon

e) How can cloudy weather influence the net amount of carbohydrates formed over the 24 hour period?

f) Give other external factors, apart from temperature and light intensity that influence the rate of carbohydrates formed.

g) In which form are the carbohydrates stored in;

i) Plant tissue? ii) Animal tissue?

Transport (Osmosis)

11. a) Differentiate between the following;

i) Heamolysis and crenation

ii) Plasmolysis and turgidity

b) Fresh green pepper strips were placed in sucrose solutions of varying concentrations to investigate the changes in mass. The stripes, each measuring 4 cm X 0.5 cm, were cut from the wall of the fruit. A total of 18 strips were cut and the mass of each determined. Three strips were then placed in each of the following solutions: 0.2, 0.4, 0.6, 0.8 and 1.0 mol/dm^3, respectively three were placed in distilled water. All were left for 30 minutes and then removed and reweighed. The mean mass of each group of three trips was calculated.

The results were recorded on a table as shown below.

	Mean mass (g)	
Molarity of sucrose (mol/dm^3)	**At the beginning**	**After 30 minutes**
0.0	1.74	1.83
0.2	1.47	1.46
0.4	1.45	1.35
0.6	1.52	1.34
0.8	1.80	1.53
1.0	1.38	1.15

i. Calculate the change in mass and the percentage change of each strip; Record the information in a table above.

ii. Plot a graph of the percentage change in mass against the molarity of the sucrose solution.

c) From your graph, determine the molarity of the sucrose solution that is isotonic to the pepper tissue.

d) Account for the change in mass when the molarity of sucrose solution was;

i) 0.0

ii) 1.0

Growth and development

12. The table below shows the changes observed in the dry weight of a maize seedlings, its embryo endosperm and other parts during the first 10 days of germination

Time (days)	**Embryo (mg)**	**Endosperm (mg)**	**Other part (mg)**	**Whole Seedling (mg)**
0	2	41		45
2	2	39		43
4	7	32		41
6	15	21		38
8	22	11		35
10	35	6		43

a) Complete the table by filling in the missing values for the weight of other parts.

b) Plot in the same axes graph of dry weight of embryo endosperm other part and whole seedling against time

c) Using the graph explain what happens to the weights of other parts of seedlings.

d) explain the changes in the following dry weights

i) Whole seed

ii) Embryo

e) i)State the relationship between the embryo and endosperm weights

ii) Give reasons for your answer.

13. In the study by the students, a number of newly hatched sparrows were kept at a temperature of 20^0c. Each day, their body temperature and the amount of oxygen. They used were measured the average

temperature and oxygen consumption for each day were plotted on the graphs show in fig (a) and fig (b) respectively.

a) Using the information provided on the graphs above, explain the difference in body temperature ad oxygen consumption of one-day old sparrow

i) Body temperature

ii) Oxygen consumption.

b) What would happen to the oxygen consumption of a six day-old sparrow. If the air temperature is raised to 25^0c. explain your answer

c) State (2)

i) Other activities that can lead to increase in Oxygen consumption in sparrows

ii) Ways birds can prevent over cooling

d) Outline two (2) advantages and disadvantages of being homoeothermic

14. The graph I figure 1, below shows population changes over a period of 8 months, for two insect, one in a type of greenfly and the other is ladybird which feed on it.

a) With a reason, identify the type of insect represented by curve.

i) A:

Reason:

ii) B

Reason

b) Explain the changes in number of species

i) From march to may

c) Outline three (3) other ways population of insect type A can be reduced

d) State

i) Two (2) ways a ladybird is adapted to capture more greenflies.

ii) Three (3) ways greenflies are adapted to escape being fed on by ladybirds.

15. (a)(i) Distinguish between fresh weight and dry weigh as used in measurement of growth in organisms.

ii) State one advantage and one disadvantage of using dry mass over fresh mass to measure growth in organisms.

b) The figure below shows changes in weight of germinating seedlings.

b)(i)Suggest reasons for the observed changes in fresh and dry weigh in the figure above.

Fresh weight

Dry weight.

i) Mention ways how accuracy of results was ensued during the experiment.

c) Describe two other ways other than the one in (b) above that can be used to measure growth in plants.

SECTION C (ESSAY)

CELL BIOLOGY

16. (a) Compare and contrast a typical plant and animal cell.
(b) Describe how the plant cell is adapted to carry it its function.
(c) Explain what happens to a palisade cell when placed
(i) In distilled water.
(ii) In a hypertonic solution.

MICROSCOPE

17. (a) Outline the parts of a light microscope and give the function of each.
(b) What is magnification?
(c) You are provided with a fresh onion bulb, describe how you would use a microscope to observe the details of the cell of the onion.

ROOTS

18. (a) Describe the internal structure of a monocotyledonous root.
(b) State how;-
(i) The internal structure of a monocot root is similar to a dicot root.
(ii) The internal structure of a monocot is different from the dicot root.
(c) Explain how the roots are modified to perform different functions.

LEAVES

19. (a) Using suitable examples, describe various leaf modifications.
(b) Explain how leaves are adapted to;-
(i) Minimize water loss,
(ii) Efficiently to carry out photosynthesis.

INSECTS

20. a) What is metamorphosis?
b) Describe how the life cycle of a house fly differs from a cockroach.
c) Explain how;-
i) Spread of malaria by mosquito can be controlled.
ii) Spread of cholera by housefly can be minimized.

SOIL

21. (a) State how flowering plants obtain nitrogen from the soil.
(b) How is nitrogen utilized by plants?
(c) Outline the possible sources from which plants obtain nitrates.
(d) Explain why water logged soils are usually deficient in nitrates.

22. (a) Explain the importance of the following to soil;-
(iii) Earth worm

(iv) Nitrogen fixing bacteria
(v) Humus
(vi) Air

(b) Describe an experiment to show that
(i) Sandy soil has the lower water retention capacity than clay soil.
(ii) Clay soil has the higher capillarity than loam soil.

NUTRITION

23. (a) Using appropriate examples describe the role of
(vii) Vitamins in animals
(viii) Mineral salts in plants

24. A child eats a meal containing cassava and egg York, Explain the role of the following in digesting of the food component in the meal.
(i) Mouth
(ii) Stomach
(iii) Liver
(iv) Ileum

25. (a) Explain the following;-
(i) Denaturing of an enzyme.
(ii) Substrate for an enzyme
(iii) Enzyme specificity
(iv) Optimum temperature of enzyme.

(b) Describe the role of enzyme catalase in organism

26. (a) What is meant by rate of photosynthesis?

(b) Explain the factors limiting rate of photosynthesis in each of the following conditions
i) Aquatic habitat
ii) At night
iii) Thick forest

(c) Describe an experiment to show that carbon dioxide is necessary for photosynthesis.

TRANSPORT IN PLANTS AND ANIMALS

27. (a) Describe the process of water movement from soil to the leaves.

(b) Explain the factors that affect the rate of transpiration,
(c) Explain how plants overcome durations of water stress.

28. (a) Outline the functions of;-
(ix) Lymphatic system
(x) Blood circulatory system

(b) Describe the changes in the components of blood as it flows through the liver, lungs and kidney.

HOMEOSTASIS

29. (a) Differentiate between osmoregulation and excretion.
    (b) Describe the role of vasopressin in regulating water in man.
    (c) Explain how;-
        (i) Kidney nephron is related to its function of urine formation.
        (ii) Urea is formed and eliminated in man.
        (iii) The body regulates amino acids.

30. (a) Explain how
        (i) Ectotherms regulate temperature variation.
        (ii) Endotherms regulate temperature variation
    (b) Give reasons why,
        (i) It is necessary to maintain body temperature in mammals.
        (ii) It is necessary to expel out carbon dioxide in a mammal.
    (c) State the advantages of Ectotherms have over the Endotherms in regulating the body temperature
    d) Explain the importance of the following in temperature regulation of mammal.
        (i) Erecter pilli muscles
        (ii) Sweat gland
        (iii) Vasodilation
        (iv) Adipose tissue

RESPIRATION AND GASEOUS EXCHANGE

31. (a) Distinguish between gaseous exchange and respiration.
    (b) Describe how the action of the muscles can bring about opposite movement of atmosphere air through the gaseous exchange organ to the body cells of a mammal.
    (c) Describe how the following are adapted to suit their functions;-
        (i) The lungs
        (ii) Tracheoles

32. a) What is meant by cellular respiration?
        (i) Explain
    i) Any four application of the process above
    ii) Why an individual may develop muscle pains after a long distance?
    iii) The adjustment an individual may undergo to run long distance when moving from at low altitude to high altitude.
    e) Describe an experiment to show that energy is given off by the germinating seed

COORDINATION

33. (a) Define,

(i) Phototropism

(ii) Geotropism

b) Describe an experiment you would carry out to determine the effects of gravity on the root of a dicotyledonous plant.

34. a) State, giving two examples in each case, what is meant by the following terms;

(i) Voluntary action

(ii) Involuntary action

b) A person touches a hot object with a finger and the hand is quickly withdrawn.

Give a full account of what happens from the moment the object is touched up to give the time the hand is withdrawn.

35. a) Describe the structure of a motor neuron.

b) (i) What is meant by a reflex action?

(ii) By means of a diagram, show the path followed by a nerve impulse during reflex action.

c) Describe how auxins cause plant roots to;

(i) Bend towards gravity

(ii) Bend towards water

d) Of what advantage are the above responses to a plant?

e) Explain how a plant shoot growing sideways finally ends up bending upwards.

f) Explain how plant shoots respond to unidirectional light

LOCOMOTION

36. (a) How are birds adapted for flight?

b) Describe how flapping flight is brought about in birds.

c) Describe the structures of the different types of a bird's feather, stating the function of each type.

d) What factors contribute to the bird's ability to fly?

37. a) Describe how the following structures enable the fish to suitably move in water.

(i) Scales (ii) Stream lined body (iii) Swim bladder (iv) Fins

b) Give the uses of an exo skeleton found in insects.

a) Animals can move from one place to another while plants cannot yet they are also capable of surviving in their environment.

(i) Of what advantage is movement in animals?

(ii) How are plants able to survive even if they cannot move from one place to another?

b) Give the importance of support and movement in flowering plants.

c) Give the tissues of support in plants and their roles.

REPRODUCTION IN PLANTS AND ANIMALS

38. a) What is meant by?
    i) Implantation
    ii) Menstruation
    b) State the advantages of;
    i) Asexual reproduction has over sexual reproduction
    ii) Internal fertilization has over external fertilization
    c) Compare the adaptation of male and female reproductive system of a man.

    (d) Describe the process that occur after pollination in a flower leading to the formation of a fruit

39. How are plants adapted to promote;
    a) Self-pollination?
    b) Cross pollination?
    c) State how insect flowers are different from wind pollinated flowers for a successful pollination.
    d) Explain the various methods of seed and fruit dispersal?

40. a) State any 3 functions of the hormones produced in man
    iv) Before conception.
    v) After conception and parturition.
    b) Describe how hormones control the menstrual cycle in human females.
    c) Compare the secondary sexual characteristics in male and female.

GROWTH AND DEVELOPMENT

41. Distinguish between;
    a) Seed viability and seed dormancy
    b) Hypocotyl and epicotyl
    c) State the role of the following in germination;
    (i) Oxygen
    (ii) Water
    (iii) Enzymes
    d) State the effect of the following on root and shoot.
    (i) Increase in auxins concentration
    (ii) Dropping off apical bud a few diameter from the apex.

42. a) What is growth?

    b) Name the main parts responsible for producing growth in a shoot.

c) Describe an experiment you would perform to determine the region of most rapid elongation in the root of a bean seedling.

43. a) With the aid of labeled diagram, explain the difference between hypogeal and epigeal germination.

b) Describe an experiment you would carry out to show that heat is liberated by germinating seeds.

c) Describe how the food stored in the cotyledons of a bean seed is available to the growing region.

d) How is this stored food in the cotyledons utilized by the seedling

44. a) differentiate between growth and development

b) Measuring fresh weight and dry weight are some of the parameters used to measure growth,

(i) What are the advantages and disadvantages of measuring growth using fresh weight?

(ii) Of what disadvantage is the measuring of growth basing on dry weight?

(iii) State other parameters that can be used to determine growth.

(ii) a) Explain what is meant by the terms;

(i) Germination (ii) Seed dormancy

c) Give the causes if seed dormancy

d) How can dormancy in seeds be overcome?

e) Of what importance is dormancy in seeds?

45. a) Differentiate between hypogeal and epigeal germination.

b) Describe how hypogeal and epigeal germination occur in the named seeds.

c) Of what nutritional importance is epigeal germination to the seedling?

GENETICS (MENDEL'S EXPERIMENT)

46. a) What is meant by an allele?

b) Distinguish between

i) Dominant and recessive allele

ii) Homozygous and heterozygous

iii) Pure breed and hybrid

iv) Test cross and back cross

c) Outline the Mendel experimental procedure that resulted into a conclusion of a phenotypic ratio of 3:1 on the plant

d) In pea plant pure tall plant was crossed with pure short plants and all the f1 off springs were tall, if one of the f1 off springs was crossed with a heterozygous plant to form f2 offspring,

i) Explain the absence of short plant in f1.

ii) Work out using genetic crosses the F_1 phenotypic ratio

iii) Calculate the percentage of offspring in F2 with allele for shortness.

47. Describe the application of genetic;
    a) Plant breeding
    b) Genetic crossing
    c) Paternity
    d) Blood transfusion

INCOMPLETE DOMINANCE

48. a)Distinguish between incomplete dominance and codominance.

b) Red flowered and white flowered plants were crossed to give F1 generation which all had pink flowers. When two plants from the F1 generation were selfed, both white and red flowered plants appeared in F2 generation.

(i) Explain the presence of pink flowers in the F1 generation.

(ii) Workout the genotype and phenotypes of the F1 and F2 generations and indicate their ratios in the F2 generation.

e) When a red cow of a certain breed of cattle was mated with a white bull, all the calves carried white and red hairs giving a roan colour, and non-had either a completely red or completely white colour.

(i) Explain the absence of the red or white colours in all the calves.

(ii) Using genetic symbols show the formation of the roan calves.

SEX LINKED GENES AND CHARACTER

49. a) Distinguish between;
    B. Sex linked character and sex limited character
    C. Continuous and discontinuous variation

b) Red color blindness is sex linked A woman with normal color vision marries a man with red green color blindness and they have three children. The two girls have normal vision. Using genetic cross; show how the phenotype and genotype of the off springs are formed. One of the daughters married a man with normal colored vision. What will be the phenotype of their son show using genetic diagrams.

d) Explain how a father is able to transmit a sex linked character to his son.

50. a) Differentiate between the biotic ad abiotic factors of an ecosystem.

b) State the biotic and abiotic factors affecting the ecosystem.

c) Explain how the factors stated in (b) above affect the ecosystem.s

ECOLOGY

51. a) What is meant by;
    i) a habitat
    ii) An ecosystem
    iii) a population
    iv) Game cropping

b) Describe the suitable method of determining the population of
    i) Elephants
    ii) Paspalum
    iii) Grass hopper

52. a) Differentiate between
    i) Food chain and food web
    ii) Pyramid of energy and bio mass
    iii) a biotic and biotic components

b) In ecological study the following organism were found in two habitat X and Y
    X Tilapia water beetle weed and tadpoles
    Y Chameleon, praying mantis, Predatory mouth green, Plant grass hopper

Construct a food chain in
    i. Y
    ii. X

c) Explain what would happen to food chain if the water weed were removed.
b) Describe the flow energy is an ecosystem in habitat X.
c) Explain the role of the following organism in ecosystem.
    i) Bacteria
    ii) Marabou stock
    iii) Termites

ENVIRONMENTAL BIOLOGY, POLLUTION

53. What is meant by;-
    a. Global warming?
    b. Environmental degradation.

b) Explain how man activities can cause
    i) Water pollution
    ii) Air pollution
    iii) Land pollution

c) Suggest the possible remedies for cause of pollution mentioned above.
d) Explain how a polythene bag can be harmful to the environment.

ASSOCIATIONS

54. a) Giving 3 examples, explain the term;-
    i. Parasitism?
    ii. Mutualism?

iii. Commensalism?

b) Explain the mode of life of the following organisms;

i) Tick.

ii) Tape worm.

c) Explain how a parasite is able to live successfully in its host.

BIOLOGY PRINCIPLES / PHYSIOLOGY

55. a)Explain;

(i) The significance of a difference in diameter of efferent and afferent vessel in urine formation?

(ii) Importance of maintaining constant body temperature in man.

(iii) Shrew mammals have a higher metabolic rate.

(iv) Water rises to the highestlevel in clay soil than sand soil.

(v) Significance of producing pepsin in stomach and pepsinogen

b) A desert camel gallopeda lot of water and immediately increased in sizeand weight, Explain how this was not an aspect of growth.

EXPERIMENTS

56. Describe an experiment

a) To compare the rate of capillarity between three soils.

b) To show that the lower epidermis transpire faster than the upper epidermis.

c) To compare drainage

d)There is rise in temperature when seeds germinates.

e) To show the necessity of oxygen forgerminating seed.

57. a) Describe an experiment to show

i) the necessity of any three factors for germination.

enzyme activity is affected by temperature.

ii)that oxygen is produced in green plant.

iii) the necessity any two conditions necessaryfor natural photosynthesis

iv)that area of growth is at the top of plant root.

v)that a plant root is positively phototropic.

b) Explain an experiment used to determine that starch is produced in a leaf.

Adaptation of Organs

58. Describe how the following are adapted to their functions;

a) Leaves for transpiration

b) Root for water absorption

c) Mammalian hear

d) Kidney for ultrafiltration and absorption

e) ileum for food absorption

f) Lungs

g) Placenta.

Adaptation of a cells

59. Explain how the following are adapted to their function suited to perform their function.
    a) Red blood cell as transport of oxygen
    b) Palisade cell for photosynthesis.
    c) Nerve cell for transformation of nerve.

Adaptation of Organism

60. Describe how
    a)Hydrophyte and Mesophytes are adapted to water stress.
    b) Mould adapted to suit its function
    c) Birds for flight
    d) Carnivores for feeding.

Adaptation of Systems.

61. State how;
    a) The female reproductive system is suited to perform its function.

PROCESSES

62. Describe how;
    a) Urine can be formed
    b) Afootballer is able to hear a referees whistle.
    c) a child is able to escape from a fierce lion
    d) water risesup in a tree
    e) Fertilization in occur in a flowering plant.
    f) menstrual cycle in human females is regulated by females
    g) Process ofBlood clotting

BALANCE, ORIENTATION AND CONTROL

63. Describe how;
    a) Changes in glucose level can be regulated.
    b) The ADH hormones regulates concentration of urine in the cold and hot days to a norm.
    c) How Endotherms regulates temperature regulation.
    d) How the muscles control the level of the arm.
    e) How the eye can be able to clearly focus a distant and nearby object.
    f) How the muscle action bring about flight in birds.
    g) The level of amino acid are regulated.

END