TRANSPORT IN PLANTS & ANIMALS

KCSE QUICK REVISION

Compilation of Possible Questions in Biology Likely to be Examined in KCSE.

A Special Analysis of Prediction Questions that may be Tested in KCSE from this Topic in Form 2.

BIOLOGY

SERIES 1

For Marking Schemes

Mr Isaboke 0746 222 000 / 0742 999 000

MWALIMU CONSULTANCY

TRANSPORT IN PLANTS & ANIMALS

1. Explain why a fresh wound on the skin bleeds more on a hot sunny day than on a cold chilly day
2. **State three** adaptations of red blood cells to their functions.
3. How are sieve tube elements adapted to their function
4. Name the **polysaccharides** found in the following structures:-

(a) **Exoskeleton**

(b) **Xylem vessels**

5. State **three** factors that maintain transpiration stream
6. (a) List **three** forces that facilitate the transport of water and mineral salts up the stem.

(b) Name the tissue that is removed when the bark of a dicotyledonous plant is ringed.

7. Study the dental formula of an organism below..

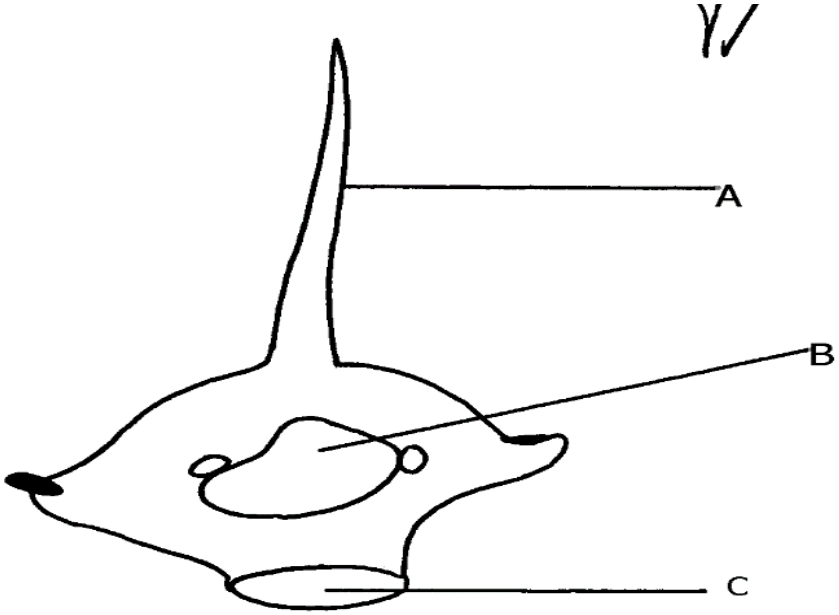
$I\ ^{3}/_{3}$, $C\ ^{1}/_{1}$, $Pm\ ^{3}/_{2}$, $M\ ^{1}/_{1}$ = x

(a) (i) What is the total number of teeth this organism possess?

(ii) What is the mode of feeding of the organism?

(b) State **two** functions of mucus produced along the alimentary canal.

8.The diagram below shows a bone obtained from a mammal.



(a) Name the part of the skeleton from which the bone has been taken.

(b) Label the parts **B** and **C**.

(c) State the functions of part **A**.

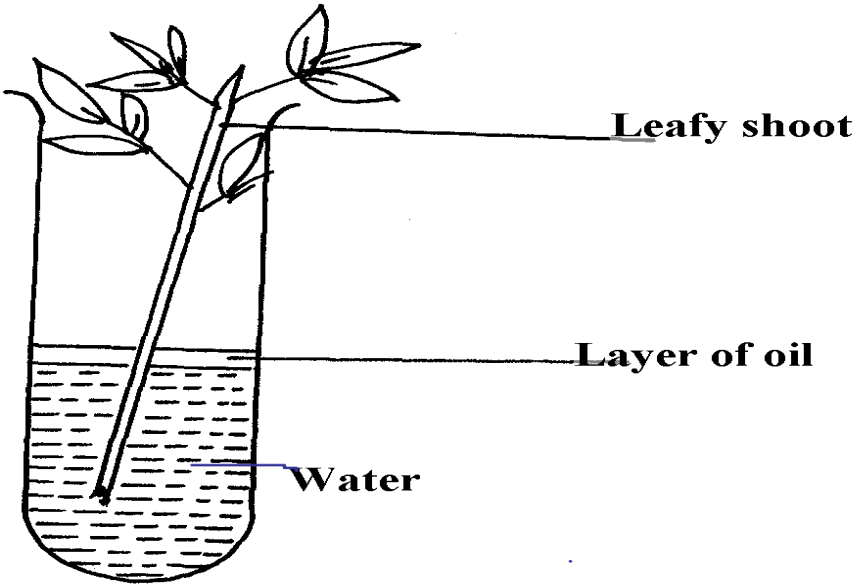
9. What is the destination of materials translocated in plants.

10. A person whose blood group is **AB** requires a blood transfusion, name the blood groups of the donors.

11. Explain why capillaries are: (i) Thin walled

(ii) Branched

12. An experiment was set-up as shown below to investigate a certain plant process:



(a) What process was being investigated above?

(b) What observation was made if;

(i) The experiment was left in strong wind for one hour?

(ii) All the leaves were removed from the plant?

13. How is aerenchyma tissue adapted to its function

14. **(**a) State **three** structural differences between arteries and veins in mammals

(b) Name a disease that causes thickening and hardening of arteries

15. Identify **two** forces that help in upward movement of water in plants

16. State **three** ways in which red blood cells are adapted to their functions

17. (a) Distinguish between tissue fluid and lymph

(b) Explain why deficiency of vitamin **K** leads to excessive bleeding even from small cuts

18. Name the type of circulatory system found in the phylum Arthropoda

19. Name the blood vessel that nourishes the heart

20. a) In which form is oxygen transported in the blood.

b) Why do plants not take in oxygen during the day although they need it for respiration

21. Name a disease of the blood characterized by excessive production of white blood cells

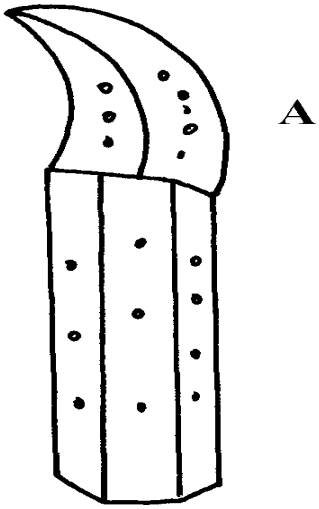
22. Laboratory analysis of a patient's urine revealed the following concentration of various substances:

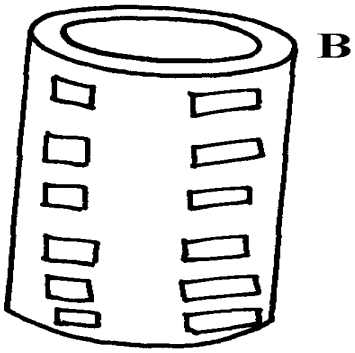
Blood proteins	0.00%
Water	50%
Glucose	48%
Salts	0.8%
Urea	1.2%

a) From the analysis above, which disease is the patient suffering from

b) Name **two** symptoms of the disease in **3(a)** above

23. The diagrams below show two conducting elements of the xylem tissue





a) Identify each of them A and B

b) What makes the cellulose side walls of both A and B able to prevent collapsing?

24. Explain why the rate of transpiration is reduced when humidity is high

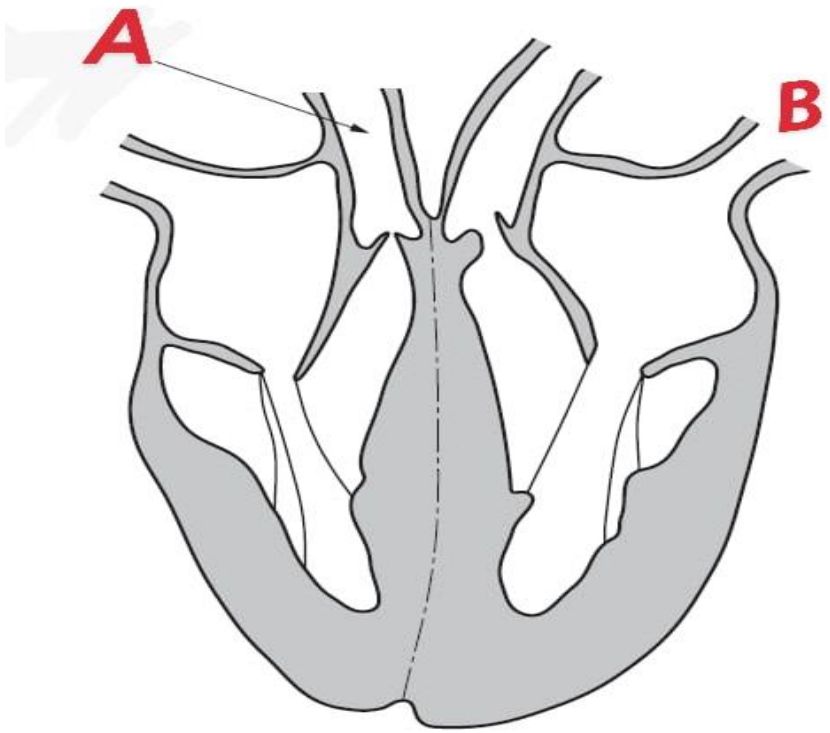
25. (a) State **two** functions of the xylem vessels,

(b) List **two** structural adaptations that make xylem vessels suitable to their function

26. (a) What is peristalsis?

(b) Explain how the process above is brought about.

27. The diagram below shows a part of a circulatory system. The arrows indicate the direction of the flow of blood;



(a) Identify the blood vessels labeled **A** and **B**

28. Name **four** methods plants employ to remove excretory waste products

29. a) State the form in which oxygen is transported in the mammalian blood

b) Why is it dangerous to sleep in an enclosed room with a burning jiko

c) Why do plants not take in oxygen during the day although they need it for respiration

30. Name a disease of blood characterized by excessive – production of white blood cells

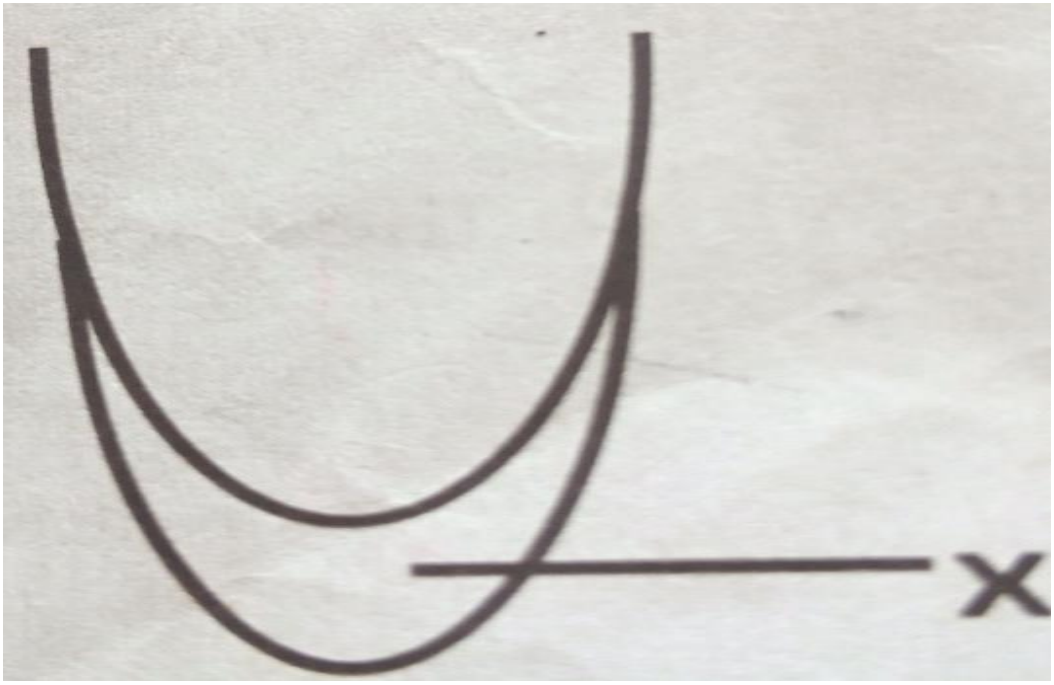
31. The table below is a representation of a chromosomal mutation

Before mutation	L	M	N	O	P	Q
After mutation	L	O	N	M	P	Q

(a) Name the type of chromosomal mutation represented above

(b) Name **one** mutagenic agent

32. The diagram below represents regions of a root tip



[a]Name the two regions above x in an ascending order
[b]State the function of part rebelled X

33. State **two** roles of transpiration to a plant
34. Uptake of water by plants is not affected by metabolic poisons. Explain.
35. Name the tissues in plants responsible for;
[a]Transport of water and mineral salts
[b]Transport of carbohydrates
[c]Primary growth

36.A woman gave birth to a child of blood group B+ (B positive). Name the two antigens that determined her child's blood group.
37.A transfusion of RH^+ blood was given to a patient with Rh^- blood. After one week a similar transfusion was given to the same patient. What was likely to be the effect of the second transfusion?
38. [a]How may excessive bleeding result in death?
[b]Name the process by which human body naturally stops bleeding
[c]How can low blood volume be brought back to normal?
39. (a) Why are xylem vessels more efficient in the transport of water than tracheids?
(b) What is the significance of xylem vessels being dead?

40. Distinguish between guttation and transpiration

41. Other than transport, state one other function of xylem tissue in plants

42. State **two** functions of aerenchyma tissue in plants

43. (a) What is sickle-cell anaemia?

(b) Identify the part of the heart that initiates the heart beat

44. (a) Give a reason why the left ventricle muscles are thicker than the right ventricles muscles

(b) State the forms in which carbon (IV) oxide is transported in the blood

45. Explain how the following adaptation reduce transpiration in xerophytes

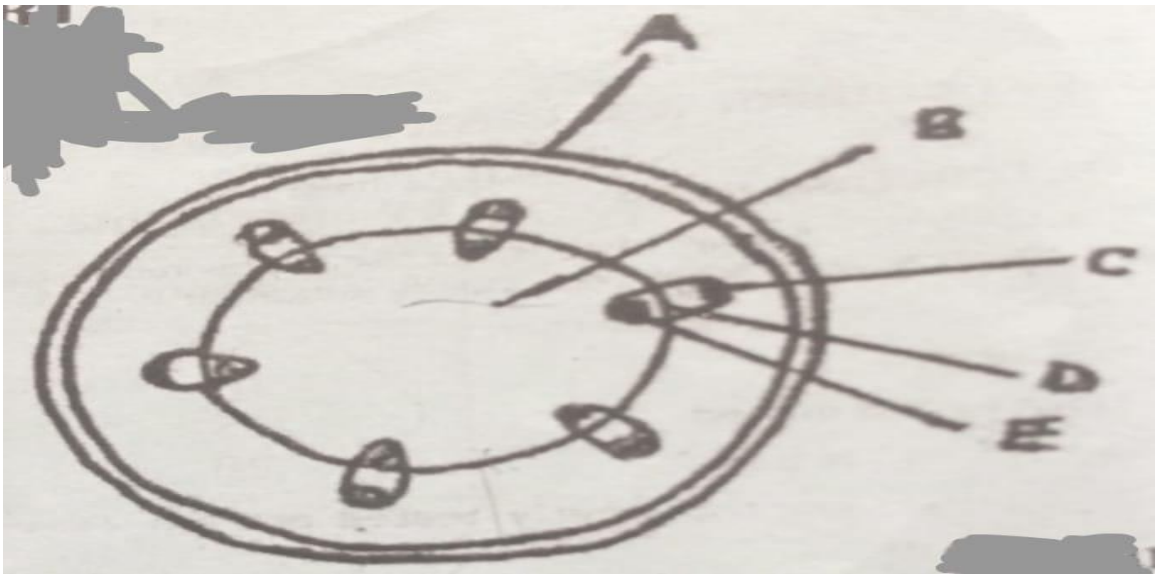
(a) Sunken stomata

(b) Thick waxy cuticle

46. Name the:(a) Material that strengthens xylem tissue

(b) Tissue that is removed when the bark of a dicotyledonous plant is ringed

47. The diagram below shows the traverse section of a young stem.



(a) What are the functions of the structures labeled **A** and **B**

(b) State the functions of the parts lebelled C,D & E

(c) Lisrt three differences between the section shown above and one that would be obtained from the root of the same plant

48. Name the components of blood that do not enter the renal tubule in mammals

49 State one adaptation of xylem vessels to their function

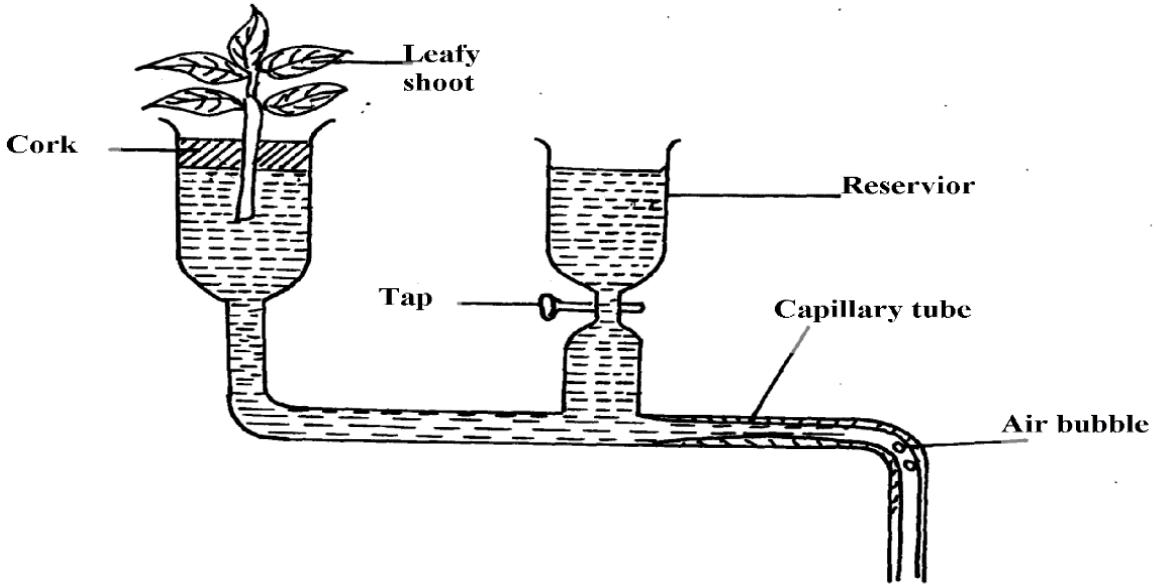
50. (a)An individual is of blood group B_+[Positive]

[i]Name the antigens in the indivituals blood

[ii]Give the reason why the individual cannot receive blood from a blood group A donor

(b) Explain how blood clot is formed once a blood vessels is injured

51. The figure below represents a diagram of a photometer;



(a) What is the photometer used for ?

(b) State the precautions which should be taken when setting up a photometer

(c) Explain what you will expect if set up was placed under the following environmental conditions;

(i) Dark room

(ii) Leafy shoot enclosed in polythene bag

(iii) In a current of air created by a fan

52. The amount of blood flow through various parts of the body of a mammal was measured in cm^3 per minute at rest and during different physical activities. Results are shown below.

	Blood flow in cm^3/min		
	At rest	**During light Exercise**	**During strenuous Exercise**
Heart muscles	200	300	1050
Gut	1300	1000	400
Skeletal muscles	1100	5050	23000

Kidneys	900	650	250
Skin	400	1300	600

a) Calculate the percentage change in blood flow through the skeletal muscles and gut when the mammal was exposed to strenuous exercise.

i) Skeletal muscles

ii) Gut

b) Account for the differences in amount of blood flow through the gut and skeletal muscles;

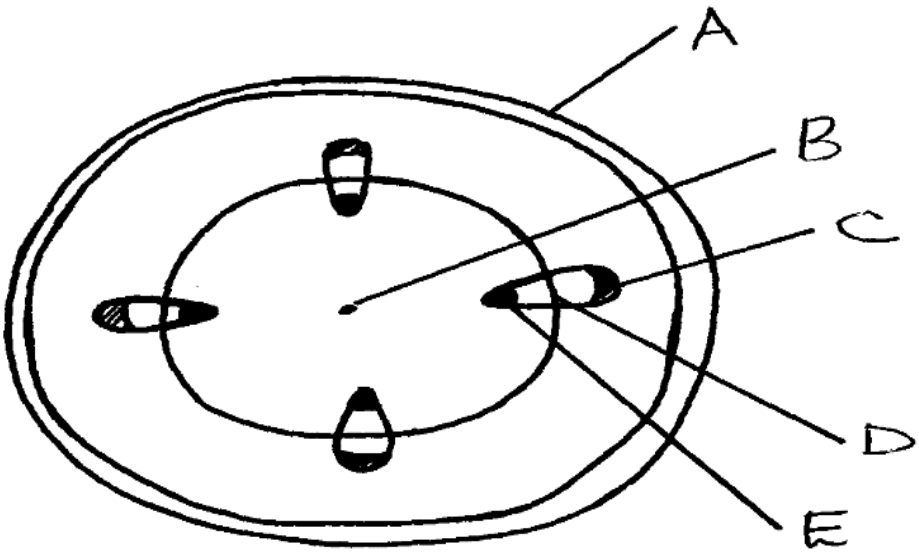
i) At rest

ii) During streneous exercise

c) Account for the result obtained for the skin during light exercise

d) Name **two** substances which are removed from the body by the kidney

53. The diagram below represents a transverse section of a young stem.



(a) Name the parts labeled **A, B** and **D**

(b) State the functions of the parts labeled **C** and **E**

(c) List **three** differences between the section above and the one that would be obtained from

the root of the same plant

54. Describe the functions of the various components of the mammalian blood

For Marking Schemes/Answers

Contact Mr Isaboke

0746-222-000

OR

0742-999-000

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CALL/TEXT/WHATSAPP

0746 222 000/ 0742 999 000

mwalimuconsultancy@gmail.com

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BY

MR ISABOKE

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