NAME	**INDEX NUMBER**
SCHOOL	**DATE**

EXCRETION AND HOMEOSTASIS

1. 1990 Q7 P1

(a) Explain why the body temperature of a healthy human being must rise up to 39^0C on a humid day.

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(b) In an experiment a piece of brain was removed from a rat. It was found that the rat had large fluctuations of body temperature. Suggest the part of the brain that had been removed.

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2. 1991 Q16 P1

(a) Explain how urea is formed in the human body

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(b) Describe the path taken by urea from the organ where it is formed until it leaves the

human body

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3. 1992 Q4 P1

(a) Explain why sweat accumulates on a person's skin in a hot humid environment.

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(b) Name the specific part of the brain that triggers sweating

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4. 1992 Q10 P1

Explain why some desert animals excrete uric acid rather than ammonia.

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5. 1992 Q19 P1

Explain the part played by each of the following in homeostasis

(a) Insulin and Glucagon

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(b) Antidiuretic hormone

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(c) Fibrinogen

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6. 1993 Q2 P1

State the role of the following hormones in the body:

a. Insulin

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b. Antidiuretic hormone

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7. 1993 Q10 P1

What osmoregulatory changes would take place in a marine amoeba if it was transferred to a fresh water environment?

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8. 1994 Q2 P1

Name two components of blood that are not present in the glomerular filtrate.

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9. 1994 Q3 P1

How would one find out from a sample of urine whether a person is suffering from diabetes mellitus?

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10. 1995 Q17 P1

Describe how excretion takes place in

(i) Mammalian Kidneys

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(ii) Green plants (5 marks)

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11. 1996 Q3 P1

When is glycogen which is stored in the liver converted into glucose and released into the blood (1 mark)

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12. 1996 Q21 P1

Explain how the mammalian skin is adapted to perform its functions (20 marks)

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13. 1997 Q8 P1

A person was found to pass out large volumes of dilute urine frequently.

(a) Name the disease the person was suffering from

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(b) Hormone that was deficient

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14. 1997 Q15 P1

The equation below represent a metabolic that occurs in the mammalian liver

Amino acids →Organic compounds + urea

(a) Name the process.

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(b) What is the importance of the process to the mammal?

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(c) What is the source of amino acids in this process

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(d) What is the difference between essential and nonessential amino acids?

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15. 1999 Q11 P1

Give reasons for each of the following:

a) Constant body temperature is maintained in mammals.

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b) Low blood sugar level is harmful to the body.

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16. 2000 Q5 P1

State the importance of osmo-regulation in organisms

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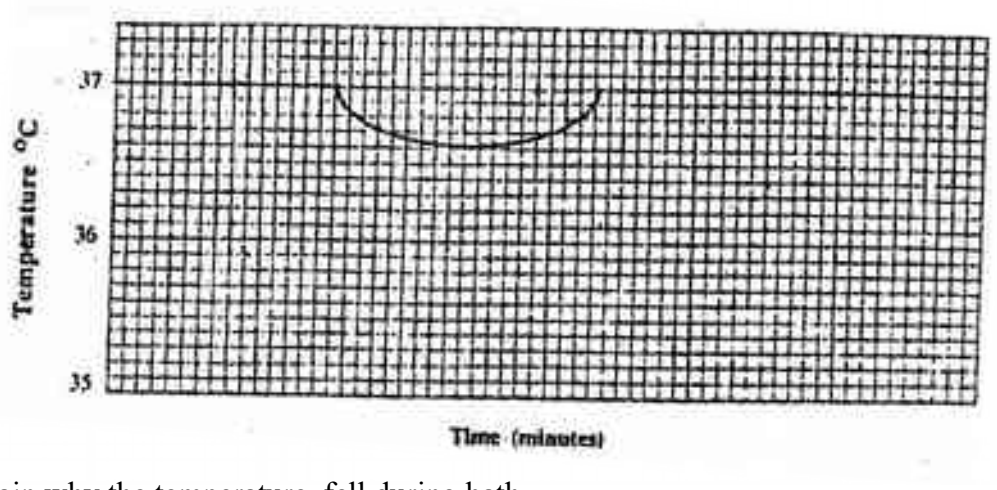
17. 2000 Q13 P1

The temperature of a person was taken before, during and after taking a cold bath. The results are shown in the graph below



(a) Explain why the temperature fell during bath

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(b) What changes occurred in the skin that enabled the body temperature to return to normal?

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18. 2001 Q6 P1

Adult elephants flap their ears twice as much as their calves in order to cool their bodies when it is hot. Explain.

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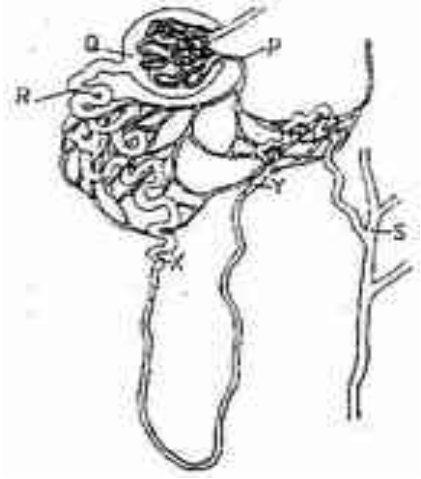
19. 2001 Q11 P1

The diagram below represents a mammalian nephron



(a) Name the

(i) Structure labeled P

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(ii) Portion of the nephron between point X and Y

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(b) Name the process that takes place at point Q

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(c) Name one substance present at point R but absent at point S in a healthy mammal

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(d) The appearance of the substance you have mentioned in (c) above is a symptom of a certain disease caused by a hormone deficiency. Name the

(i) Disease……

(ii) Hormone……

(e) State the structural modifications of nephrons found in the desert mammals

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20. 2003 Q14 P1

a) Explain how marine fish regulate their osmotic pressure.

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b) Explain the role of antidiuretic hormone when there is excess water in the human body.

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21. Some students used a model to demonstrate the effect of sweating on human body temperature. Two boiling tubes A and B were filled with hot water. The temperature of water in the tubes was taken at the start of the experiment and then at 5 minutes interval.

The surface of tube A was continuously wiped with a piece of cotton wool soaked in methylated spirit. The results obtained are shown in the table below.

Time (minutes)	Temperature ^{0}C in tubes	
	A	B
0	80	80
5	54	67
10	40	59
15	29	52
20	21	47
25	18	46

a) On the same axes, plot graphs of temperature of water in the tubes against time.

b) At what rate was the water – cooling in tube A?

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c) Why was tube B included in the set up?

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d) Account for the rate of cooling in tube A.

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e) State two processes of heat loss in tube b.

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f) What would be the expected results if tube A was insulated?

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g) What would the insulation be comparable to in:

i) Bird

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ii) Mammals?

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h) Name the structures in the human body that detect:

i) External temperature changes

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ii) Internal temperature changes

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22. 2004 Q18 P1

How is the mammalian skin adapted to its functions? (20 marks)

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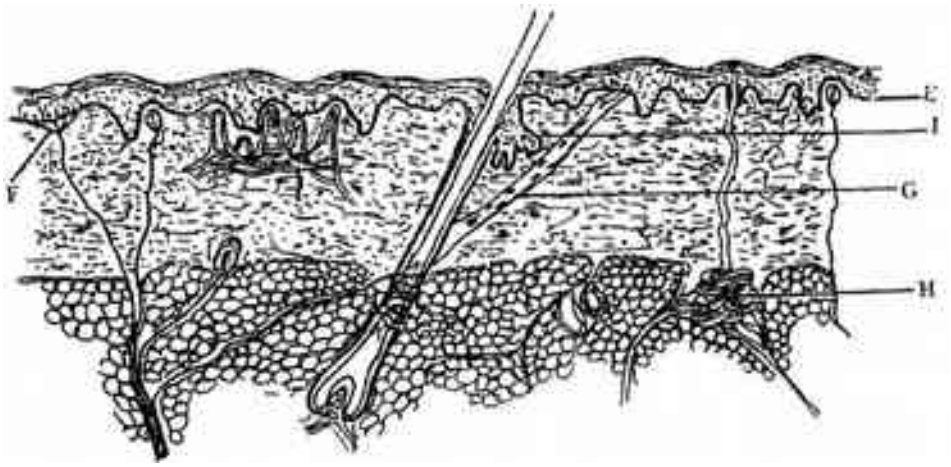
23. 2005 Q13 P1

The diagram below shows a section through the mammalian skin.



a) Name the parts labeled E, F and G. (3 marks)

E…….

F…….

G……

b) State two functions in each case of substance secreted by the structures labelled.

(i) H (2 marks)

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(ii) I (2 marks)

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24. 2006 Q4 P1

a) Name the fluid that is produced by sebaceous glands. (1 mark)

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b) What is the role of sweat in human skin? (2 marks)

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25. 2006 Q7 P2

Describe how human kidney functions (20 marks)

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26. 2007 Q14 P1

(a) What is the meaning of the terms

(i) Homeostatic (1 mark)

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(ii) Osmoregulation? (1 mark)

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(b) Name the hormones involved in regulating glucose level in blood (2 marks)

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27. 2007 Q2 P2

(a) Explain what happens to excess amino- acids in the liver of humans (3 marks)

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(b)Which portion of the human nephron are only found in the cortex? (3 marks)

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(c)(i) What would happen if a person produced less antidiuretic hormone? (1 mark)

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(ii) What term is given to the condition described in (c) (i) above (1 mark)

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28. 2008 Q2 P1

State the importance of the following processes that take place in the nephrons of a human kidney

(a) Ultra filtration (1 mark)

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(b) Selective reabsorption (1 mark)

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29. 2008 Q11 P1

(a) What is homeostasis? (1 mark)

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(b) Name three processes in the human body in which homeostasis is involved (3 marks)

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30. 2009 Q17 P1

Explain why plants do not require specialized excretory organs (4 marks)

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31. 2009 Q21 P1

Explain what happens in humans when concentration of glucose in the blood decreases below the normal level (4 marks)

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32. 2009 Q8 P2

Describe the role of the liver in homeostasis in the human body (20 marks)

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33. 2010 Q18 P1

Give **two** reasons why animals have specialized organ for excretion as compared to plants (2 marks)

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34. 2010 Q19 P1

State the changes that occur in arterioles in the human skin during thermoregulation. (2 marks)

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35. 2011 Q1 P1

Name two kidney diseases. (2 marks)

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36. 2011 Q25 P1

State one economic importance of each of the following plant excretory products.

a) Tannin

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b) Quinine

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c) Caffeine

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37. 2011 Q7b P2

Explain how the human skin brings about cooling of the body on a hot day. (7 marks)

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38. 2012 Q18, 19 P1

18. Why plants able to accumulate most of their waste products for long? (1 mark)

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19. List four forms of diabetes mellitus. (4 marks)

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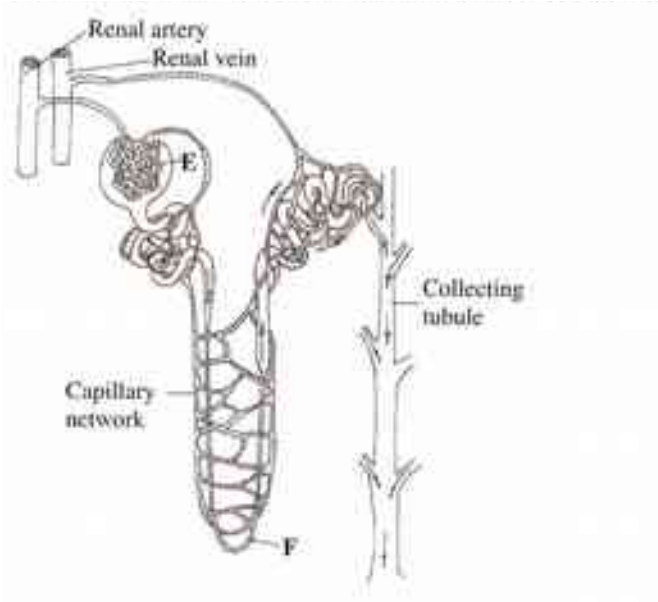
39. 2012 Q2 P2

The diagram below illustrates the structure of the kidney nephron.



(a) Name the part labeled E. (1 mark)

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(b) How the part is labeled F adapted to its function? (4 marks)

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(c) State three physiological mechanisms of controlling the human body temperature during a cold day. (3 marks)

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