

HOLIDAY ASSIGNMENT.

1. In an investigation, the pancreatic duct of a mammal was blocked. It was found that the blood sugar regulation remained normal while food digestion was impaired. Explain these observations. ~~(2 marks)~~
2. Explain why the body temperature of a healthy human being must rise up to 39°C on a humid day.
3. 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.
- 4 a) Explain why sweat accumulates on a person's skin in a hot humid environment.
- b) Name the specific part of the brain that triggers sweating.
5. Explain why some desert animals excrete uric acid rather than ammonia.
6. State the role of the following hormones in the body.
 - a) Insulin
 - b) Antidiuretic hormone

6.c) Glucagon

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

8. Name two components of blood that are not present in glomerular filtrate and give a reason for their absence.

9. Describe a test a person would carry out from a sample of urine to determine whether a person is suffering from diabetes mellitus.

10. When is glycogen, which is stored in the liver, converted into glucose and released into the blood?

11. A person was found to pass out large volumes of dilute urine frequently.
Name the :-

a) Disease the person was suffering from

b) Hormone that was deficient

12. State the importance of homeoregulation in organisms.

13. Discuss the following statements:

i) Constant body temperature is maintained in mammals.

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

14. Name the fluid that is produced by sebaceous glands.

15. Discuss the fate of excess amino acids in the liver of humans.

b) Which portions of the human nephrons are only found in the cortex.

16. The table below shows the approximate percent concentration of various components in blood plasma entering the kidney glomerular filtrate and urine of a healthy human being.

a) Component	plasma	Glomerula	urine filtrate
water	90	90	94
Glucose	0.1	0.1	0
Amino Acids	0.05	0.05	0
Plasma proteins	8.0	0	0
urea	0.03	0.03	2.0
Inorganic ions	0.72	0.72	1.5

b) Name the process responsible for the formation of glomerular filtrate.

c) What process is responsible for the absence of glucose and amino acids in urine.

d) Explain why there are no plasma proteins in the glomerular filtrate.

e) Besides plasma proteins, what other major component of blood is absent in the glomerular filtrate.

f) Why is the concentration of urea in urine much higher than its concentration in the glomerular filtrate?

17) Discuss the role of the kidney in excretion. (20 mks)

18) Discuss the role of hormones in blood sugar regulation. (20 mks)