University of Buea **Faculty of Sciences**

Second Semester Examination

Department: Plant and Animal Sciences
Month:
Year: 2010
Date:
Time allowed: Three hours
INTRUCTIONS: Answer all questions

Course instructors: Salah & Bopda
Course code & number: ZOO 612
Course title: systemic physiology of mammals
Duration:
Credit value: 3
Total score: 70mks

QUESTION I ***(25mks)***

The nervous system is a very important one for the control of various mammals physiological mechanisms. It is mainly including a central nervous system and a peripheral nervous system.

I-1) Explain without any diagram, but given details about the excitation-contraction coupling, the mechanism of control of nervous system on one type of muscle of your choice, *(6mks)*

I-2) By means of curves, make a comment of the correlation between an Action Potential and the transmembranal permeability for ions in a stimulated neuron *(3+4=7mks)*

I-3) Explain the physiological relation between central nervous system and kidney and mammary gland. Give the precise mechanism of action at the effectors level *(6x2=12mks)*

QUESTION II ***(15mks)***

II-1) Define the term **Hormone**. Give an example of reproduction female hormone and its target organ *(1+0.5+0.5=2mks)*

II-2) Define the terms FSH and LH. Explain by means of diagram, how they control gametogenesis in man, if applicable *(1+ 6=7mks)*

II-3) A young woman has a 30 days-menstrual cycle. First menstruations being on 27th February (a 28 days-month), determine the next probable ovulation date (NB: make clear calculation and use a graduated axis showing that ovulation period) *(6mks)*

QUESTION III : Multiple choice questions ***(30mks)***

Choose the right (s) answer (s) for each of the below numbers (1-30): right answer=2mk, wrong answer= −0.5mk, no answer=0mk.

1) Two values of pH taken in the main types of vessels in human are 7.35 and 7.41. The lower value is logically recorded in :

A-muscle capillaries B-pulmonary capillaries C-pulmonary vein D-pulmonary artery

2) The heart pacemaker is called:

A-septal node B-atria wall node C-sinoatrial node D-atrioventricular node

3) The backflow of blood from a leg muscle to heart is facilitated by

A-ventricle cell action potential B-skeletal muscle contraction C-resting state of venal muscle D-normal functioning of valves

4) Lymph carries :

A-all fatty nutrients absorbed from small intestine B-red and white cells C-antibodies D-plasmatic proteins

5) Those physiological activities are achieved by Kidney in mammals

A-blood filtration B-tubular reabsorption of proteins and water

C-tubular reabsorption of glucose D-renin synthesis

6) Those enzymes are involves for boiled starch break down inside alimentary canal

A-trypsine B-saliva C- α—amylase D- β—amylase

7) In physiological conditions, the enzyme pepsin catalyzes break down of various compounds including the following:

A-amino acids B-ovalbumine C-lactalbumine D-elastine

8) Bile is excreted in the duodenum from :

A-liver B-duodenum`s parietal cells C-from gall bladder D-stomach`s chief-cells

9) Bile is a chemical compound acting as:

A- an enzyme for lipids break down B-a catalyser during digestion process

C-a neurotransmitter D-a hormone

10) Discontinuous capillaries, also called sinusoidal capillaries, can be found inside:

A-cardiac muscle B-cardiac nodal tissue C-liver D- skeletal muscle

11) Juxtaglomerular apparatus secretes a hormone that:

A-converts angiotensin I to angiotensin II B-acts indirectly for sodium retention in the interior milieu C-acts directly for stimulating aldosterone secretion D-converts renin to angiotensinogen

12) The transfer of energy between two separate objects at different temperatures using electromagnetic waves is called:

A-convection B-conduction C- radiation D- heat retention

13) After reception of a rise in body`s temperature, hypothalamus may trigger the following:

A-cutaneous vasoconstriction, stimulation of thyroxin and adrenaline secretion, sweating

B- cutaneous vasodilation, stimulation of thyroxin and adrenaline secretion, sweating

C- cutaneous vasodilation, inhibition of thyroxin and adrenaline secretion, sweating

D- cutaneous vasoconstriction, inhibition of thyroxin and adrenaline secretion, sweating

14) Type 1 diabetes is due to:

A-lake of insulin secretion B-inhibition of antidiuretic hormone secretion C-lake of hepathocytes for glucose storage D-difficulty for insulin to bind its specific receptors on target cells, since they are covered by fat

15) Arteriosclerosis is a pathological state where:

A-small arteries have very less elasticity B-arteries have very less lumen diameter, due to fatty compound accumulation C-arterial blood lost clotting property D-arteries lost the property of constriction.