BRAINWARE UNIVERSITY

Term End Examination 2020 - 21

Programme – Bachelor of Science (Honours) in Biotechnology

Course Name – Mammalian Physiology

Course Code - BBTC301

Semester / Year - Semester III

Time allotted : 75 Minutes Full Marks : 60

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question) 1 x 60=60

1. *(Answer any Sixty)*

(i)

Normal viscosity of blood is ……..times that of water

a) 1-2 b) 2-3

c) 3-4 d) 4-5

(ii)

What percentage of glomerular filtrate is normally reabsorbed?

a) 1% b) 10%

c) 80% d) 99%

(iii)

Aerobic versus anaerobic energy production from one free glucose to pyruvic acid is

a) 4:1
b) 1:4
c) 3:1
d) 1:3

(iv) Which of the following gastrointestinal hormone stimulates insulin secretion?

a) Gastric Inhibitory Polypeptide
b) Cholecystokinin
c) Gastrin
d) Secretin

(v) What do endocrine cells of pancreas secrete?

a) Omega growth hormone
b) Betasomatostatin
c) Delta insulin
d) Alpha glucagon

(vi) Name the process of gaseous exchange in the body.

a) Lymphatic system
b) Respiration
c) Cardiovascular system
d) Respiratory system

(vii) Which of the following controls the normal breathing process?

a) Amino acids
b) Cholesterol
c) Ventral respiratory group
d) Dorsal respiratory group

(viii) Oxygen and hemoglobin bind in a reversible manner to form

a) Carboxyhemoglobin
b) Oxyhemoglobin
c) Methoglobin
d) Biphosphoglyceric acid

(ix) What is the length of small intestine?

a) 1metre
b) 3metres
c) 5.5 metres
d) 7.6 metres

(x) Which blood cell secrets antibody?

a) Eosinophils
b) Monocytes

c) Lymphocytes
d) Neutropils

(xi) Which of the following membrane is responsible for the protection of the heart?

a) Epicardium
b) Myocardium
c) Endocardium
d) Pericardium

(xii) The blood corpuscles are of

a) 5 kinds
b) 4 kinds
c) 3 kinds
d) 2 kinds

(xiii) Which sphincter is present between the stomach and the duodenum of the small intestine?

a) Pyloric
b) Iliocolic
c) Cardiac
d) Ileocecal

(xiv) Absorption of food occurs in

a) Small intestine
b) Stomach
c) Large intestine
d) Rectum

(xv) System of the body which coordinates and controls its activity is known as

a) Organ system
b) Muscular system
c) Nervous tissue
d) Nervous system

(xvi) Name the basic structural and functional unit of the nervous system.

a) Neuroglia
b) Glial cells
c) Perikaryon
d) Neurons

(xvii) What is the site for gluconeogenesis?

a) Liver
b) Blood
c) Muscles
d) Brain

(xviii) Which part of the digestive system is acidic?

a) Liver
b) Small intestine
c) Stomach
d) Rectum

(xix) Name the hormones that control the body's homeostasis.

a) Insulin and glucagon
b) Glucocorticoids
c) Epinephrine
d) Insulin

(xx) Amount of total blood volume in an individual is apprpximately

a) 50 ml/kg body weignt
b) 60 ml/kg body weight
c) 70 ml/kg body weight
d) 80 ml/kg body weight

(xxi) Total blood volume (% of body weight) is

a) 8
b) 20
c) 40
d) 80

(xxii) Normal blood pH is

a) 7.2
b) 7.3
c) 7.4
d) 7.5

(xxiii) Which component of protein contributes to maximum percentage to total plasma protein?

a) Albumin
b) Globulin
c) Fibrinogen
d) Prothrombin

(xxiv) Which of the following is not a non-protein nitrogenous substance?

a) Urea
b) Uric acid
c) Creatinine
d) Lecithin

(xxv) Which is true value for normal plasma level?

a) Albumin : 2-3 gm/dl
b) Globin : 3-5 gm/dl

c) Fibrinogen : 0.3 gm/dl

d) Prothrombin : 0.03 gm/dl

(xxvi) Function of the plasma protein are all except

a) Transport hormones

b) Transport oxygen

c) Transport antibodies

d) Transport chylomicrons

(xxvii) Most of the protein loss after injury comes from

a) Plasma proteins

b) Liver and other organs

c) Bone

d) Muscle proteins

(xxviii) Total plasma protein levels are low during infancy due to

a) Low protein intake

b) Increased protein loss in urine

c) Hepatic immaturity

d) Total plasma protein levels are higher in infants as compared to adults

(xxix) Haemoglobin iron combines with

a) Molecular oxygen rather than ionic oxygen

b) Both molecular as well as ionic oxygen

c) Oxygen attached to 2,3 DPG

d) Superoxide radical

(xxx) Combination of haem with oxygen is called

a) Oxygenation

b) Oxidation

c) Oxygenation

d) Oxidised haem

(xxxi) Endocardium means

a) Muscles of the heart

b) Pacemaking and conducting system

c) Double layered structure that encloses the entire heart

d) Endothelial lining of the cardiac chambers

(xxxii) A-V valve on the right side of heart is

a) Mitral valve

b) Tricuspid valve

c) Aortic valve

d) Pulmonary valve

(xxxiii) All statements are true about A-V valves except

a) These valves close and open passively with the pressure gradient forces

b) They prevent the backward flow of blood from ventricles to atria during ventricular systole

c) Opening of these valves is responsible for the first heart sound

d) Chordae tendinae are attached to the free edges of the valve flaps

(xxxiv) Example of bicuspid valve is

a) Tricuspid valve

b) Mitral valve

c) Pulmonary valve

d) Aortic valve

(xxxv) All are the examples of pacemaker tissue of the heart except

a) S-A node

b) A-V node

c) Remification of Bundle of His

d) Internodal atrial pathways

(xxxvi) The following statements are true regarding the SA node except

a) Is located at the right border of the ascending aorta

b) It contains specialized nodal cardiac muscle

c) It is supplied by the arterial branches of the right coronary artery

d) It initiates cardiac conduction

(xxxvii) SA node is called the cardiac pacemaker because of its

a) Neural control

b) Location of atrium

c) Strength of impulse formation

d) Rate of impulse formation

(xxxviii) Cardiac muscle

a) has a velocity of conduction of action potentials at 1 meter per second

b) Never contracts for more than 0.12 second

c) Is not influenced by nor-epinephrine

d) Has a longer duration of contraction during tachycardia

(xxxix) The Purkinje fibers

a) Are myelinated axons

b) Have a conduction velocity of about four times that seen in heart muscle

c) Have action potentials about a tenth as long as those are in heart muscle

d) Are large and thin fibers

(xl) Ventricular muscles receive impulses directly from the

a) Purkinji system

b) Bundle of His

c) Right and left bundle branches

d) AV node

(xli) All of the following transport mechanisms are passive processes except

a) Diffusion

b) Facilitated diffusion

c) Osmosis

d) Vesicular transport

(xlii) Hemolysis may occur when a blood cell is placed in a

a) Homotonic solution

b) Isotonic solution

c) Hypotonic solution

d) Hypertonic solution

(xliii) Where would you expect to find stratified squamous epithelia?

a) in the testes

b) in the kidney tubules

c) in the vagina

d) in the small intestine

(xliv) Which nervous system controls skeletal muscle?

a) Sympathetic

b) Parasympathetic

c) Somatic

d) Afferent

(xlv) Smooth muscle

a) is under voluntary and involuntary control

b) can be found in the eye, uterus and blood vessels

c) can be found in the eye and heart

d) is striated

(xlvi) Which kind of muscle tissue is directly involved in the regulation of blood pressure?

a) cardiac and smooth muscle
b) smooth muscle only
c) cardiac muscle only
d) skeletal muscle

(xlvii) Which of the following is the function of the skeletal muscle?

a) secretion and absorption
b) contraction
c) storage of minerals
d) communication

(xlviii) At each end of the muscle, the collagen fibers of the epimysium, and each perimysium come together to form a

a) tenosynovium
b) tendon
c) sheath
d) satellite cell

(xlix) Muscle tissue, one of the four basic tissue groups, consists chiefly of cells that are highly specialized for

a) secretion
b) contraction
c) cushioning
d) conduction

(l) The action potential is conducted into a skeletal muscle fiber by

a) transverse tubules
b) motor end plates
c) neuromuscular junctions
d) sarcoplasmic reticulum

(li) Each kidney contains about ……. Nephrons

a) Half million
b) One million
c) Two million
d) Four million

(lii) Malpighian corpuscle comprises of

a) Bowman’s capsule
b) Glomerulus
c) Peritubular capillary plexus
d) Bowman’s capsule and Glomerulus both

(liii) Filtration at glomerulus occurs through all of the following except

a) Endothelium
b) Basement membrane
c) Epithelial cells
d) Malpigian corpuscle

(liv) Normal kidney does not allow passage of

a) Substances > 8nm in diameter
b) Lysozyme
c) IgG
d) Albumin

(lv) Juxta glomerular cells are located in

a) Afferent arteriol
b) Efferent arteriol
c) Distal convoluted tubule
d) Glomerular

(lvi) Renin is secreted by

a) Aldosterone
b) Angiotensin I
c) Angiotensin II
d) Juxta glomerular cells

(lvii) Hormones secreted by kidney include all except

a) Vitamin D
b) Erythropoietin
c) Renin
d) Vitamin A

(lviii) A major site of autoregulatory resistance in the kidney is

a) Afferent arterioles
b) Efferent arterioles
c) Both Afferent arterioles and Efferent arterioles
d) Peritubular capillary plexuses

(lix) The volume of blood in the renal capillaries at any given time is

a) 30-40 ml
b) 70-100 ml
c) 100-300 ml
d) 300-450 ml

(lx) Glomerular filtration rate is

a) Plasma filtered through microtubules
b) Serum filtered through microtubules

c) Arterial blood filtered through microtubules

d) Venous blood filtered through microtubules