Birla Institute of Technology and Science, Pilani, Pilani-campus (Rajasthan)

PHA F214: Anatomy, Physiology and Hygiene

Comprehensive Examination: 2nd Sem-2017-2018

Max. Marks:40 **Open/Closed Book**

Date: 09/05/18 **Duration: 180 Minutes**

There are two set of question paper: Part- A: open book (18 M) and Part- B-closed book (22 M)

Part-A: Open Book **Max. Marks: 18** **Max. Time 90 Min**

Q-1: Justify the following:

a) Swelling of neck occured in both Hypo and hyperthyrodism? 3.0 M
b) Nor-ephinephrine is the neurotransmitor of sympatheic NS in brain.
c) Virus can not infect RBC but can infect WBC

Q-2: Diabetes Mellitus (DM) is a group of metabolic disorders that are associated serious long-term complications including CVS disease, stroke, neruopathy, nephropathy, foot ulcers, and damage to the eyes-retinopathy. These complication may be due to hormonal and neurotransmitor modulation. Blood glucose monitoring, physical activity, diet and food habit are suggested to prevent organ damage and failure.Diabetes Insipidus (DI) is another disorder affecting both young and older populations.

What are similarties and differences in the followings: 3.0 M

a) DM and DI
b) Hormone and Neurotransmitor
c) Macrophage and Monocyte cells

Q-3: Explain the followings: 1.5 M

a) Micturition reflex
b) RH Incompatablity
c) Anorexia and Bulimia **nervosa**

Q-4:How does germ cell (egg or sperm) different from other cells? 1.0 M

Q-5: Why do we feel pain in the ear and breathing difficulty at high altitudes? How does it managed by body?1.0 M

Q-6: If you are late and your exam is about to start, you will reached in exam hall by running. Your heart rate, B.P and respiration rate wiill be increase with flushing on your face but after few min. all will be normalized. 1.0 M

i)Write the name of hormone and neurotransmitor involved .
ii)Some time cranial nerve activation leads to sinus bradycardia. Which cranial nerve is responsible for sinus bradycardia?

Q-7:i)How does the stomach protect itself from the acid? Why is acid present in stomach? 1.5 M
ii)Chonic use of NSAIDs (Aspirin) may result peptic ulcer, why?

Q-8: A 50-year-old women, weight 50 kg, have admitted in hospital due to abdominal pain and urine retention. Her serum creatinine is 4 mg/dl, volume of urine excreted 1600 mg/day and urinary creatinine of 0.8 G/l. He was earlier diagnosed with anemia and hyperparathyroidism .

a)What is the difference between creatinine and creatine? 1.0 M
b) Out of urea and creatinine clearance, the estimation of which one is preferred to access renal function and why?
c) When will dialysis be suggested to a patient. 1.5 M
d) Calculate creatinine clearance & comment upon the functional status of the patient based on result.1.5 M
e) How hormones can modulate collecting duct function and promote Na+excretion.? 1.0 M
f) Why do renal failure patients have anemia and hyperthyrodism? 1.0 M

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PHA C321/F214: Anatomy, Physiology and Hygiene
Comprehensive Examination: Second Sem-2017-2018

Max. Marks:40 **Open/Closed Book**

Date: 09/05/18 **Duration: 180 Minutes**

Part B: Closed Book **Max. Marks: 22** **Max. Time: 100 Min**

Q1: Write brief note on the following: 4.0 M

a. Congenital Adrenal Hyperplasia)
b. Saltatory conduction
c. Presbyopia and cataract
d. External and internal respiration

Q-2: How is accomodation of the lens for near and far vision adjusted? 1.0 M

Q-3:What are the functions of Type-1 and Type-II cells of Alveolus? 1.5 M

Q-4: What is LH surge? How is menuration cycle and ovulation regulated in female? 1.5 M

Q-5: i)What are the functions of epididymis duct and Bulbourethral glands? (1.5 M)
ii) How is sperm pentrate ovum and survive in acidic envieronment?

Q-6:Write the synthesis and regulation of gondal (sex) hormones. 2.0 M

Q-7: How do molecules move through the cell membrane? Why you need to mainatin isotonocity of a parenteral drug formulation ? 1.5 M

Q-8 How do alpha 2 and alpha 1 receptor modulate adrenic response. 1.0 M

Q-9:The **brain** is an organ that serves as the master /center of the nervous system in all vertebrate and most invertebrate animals. The brain is the most complex organ in a vertebrate's body. In a human, the cerebral cortex contains approximately 15–33 billion neurons each connected by synapses to several thousand other neuron

a) Write the name of parts and function of hind brain. 1.0 M
b) How is a message transmitted within a neuron? 1.0 M
c) How is hypothalmus connected to pitutary gland? How is it involved in managing stress? 2.0 M
d) Write the name of hormones of Hypothalmus and Pitutary gland. 1.5 M

Q-10: Do Diabetics patients have high insulin levels? Discuss with suitable explaination. 1.0 M

Q-11: a) Write the causative agent for the followings: 2.0 M
i) Anthrax ii) Syphlis iii) TB iv) AIDS
ii) How is anthrax spread and be managed clinically?