Birla Institute of Technology and Science, Pilani, Pilani-Campus, Rajasthan

Mid-Semester-Examination: Second Sem. 2017-2018

Course No.: PHA F214
Course Title: Anatomy, Physiology and Hygiene
Max. Marks: 30 (21.5+8.5) Closed Book
Date: 08/03/18 **Part-A** Duration: 90 Minutes
Note: *Give answers in points and use flow charts wherever possible for substantiation* .

Q-1. Classify leukocytes and write the functions of neutrophil and B cells.. 1.5 M

Q-2: Differentiate between the followings: 6.0 M

a) Thalassemias and Sickle-cell Anemia
b) Cardiac Arrest and cardiac attack
c) Nucleus and Nucleolus
d) Trombous and Embolus
e) Chromosomes and chromatin
f) Merocrine and Apocrine Glands

Q-3: A 30-year-old pregnant woman presented with progressive weakness and fatigue. Her Hct is decreased. She had atropic gastritis and peptic ulcer earlier and based on the symptoms, she may have anemia. The results of the complete blood cell count (CBC) performed in her physician's office were as follows: hemoglobin, 8.0 gm/dL; RBC =4 million/ mm3 , Hct= 10 and white blood cell count, 3,900/mm3.
Explain the followings: 3.5 M

i) Why does hematocrit value decrease in pregnancy?
ii) Calculate the MCV (femoliter $=10^{-15}$L), and MCH (pg/cell) based on the report?
iii) What type of anemia may be diagnosis and why? How is it managed?.

Q-4. How does smooth muscle diffrent from cardiac and skeletal muscle? 1.0 M
How does lymph differ to blood? Write the function of lymphatic system. 1.5 M
How are blood cells produced in bone marrow (Flow chart)? 1.5 M

Q-5: i) How does hormone synthesis-regulated?. How does RAAS affects blood volume and blood pressure.?
ii) Give examples of ACE inhibitor and Ag-11 receptor blocker agents. 2.5 M

Q-6: What is ECG, and what PR-interval, QRS complex and T wave represented?.
Do interpret the below given ECG tracing (HR, PR-interval, QRS complex and T wave), What might be the condition.?

4.0 M

b) Basec on ECG, What might be the condition?

c) How is MI diagnosed beased on ECG tracing ?

_____End_____

Birla Institute of Technology and Science, Pilani, Pilani-Campus, Rajasthan

Mid-Semester-Examination: Second Sem. 2017-2018

Course No.: PHA F214
Course Title: Anatomy, Physiology and Hygiene Closed Book
Max. Marks: 30 (21.5+8.5)
Name: ID: .
Date: 08/03/18 Part-B Max. Time: 20 Minutes

1. Comments on the followings with proper justification? 7.0 M
   a. Cartilage has dense network of blood vessels and nerves.
   b. Action potential propagation in myelinated neurons is faster than in unmyelinated neurons
   c. Chemoreceptors: pressure sensitive receptor in the arteries respond to changes in the BP
   d. Increased or accelerated heart rate is caused by stimulation of Vagus nerve
   e. Afferent nerve fibre carries nerve impulses away from the central nervous system toward the peripheral effector organs
   f. Scar tissue perform the normal function of the tissue it replaces. e.g: heart , liver and lungs.
   g. The control of blood sugar by insulin is a good example of a negative feedback mechanism.

Answer:

S.No	True/False	Justification
a		
c		

d		
e		
f		
g		

Q-2: A drop of Plasma and blood serum and whole blood from pulmonary vein, placed separately on three slides. Which of them will not coagulate and why? 1.5 M

ii) What would be If you placed RBC in hypertonic, hypotonic and isotonic solution

iii) A person blood group is AB, what will happen if blood from blood group O is given to him.