(LD 121) **OCTOBER 2013** **Sub. Code: 2018**

M.D. DEGREE EXAMINATION
BRANCH V – PHYSIOLOGY

PAPER I - GENERAL PHYSIOLOGY, BLOOD, DIGESTION, AND TISSUES OF THE BODY
Q.P.Code: 202018

Time: Three Hours **Maximum: 100 marks**

I. Essay: **(2X10=20)**

1. List the steps involved in hemostasis following an injury to a blood vessel. Explain in detail the intrinsic pathway of coagulation. Add a note on anticoagulants.

2. Describe the mechanism of acid secretion in the stomach. What are the factors that regulate acid secretion?

II. Short Questions: **(8X5=40)**

1. Define and classify polycythemia. What are the cardiovascular complications that can arise due to the polycythemia?
2. What are the complications that can arise due to a mismatched blood transfusion?
3. Describe the functions of helper T cells.
4. Describe the factors that regulate erythropoiesis.
5. Describe the electrical activity of the gastrointestinal tract.
6. Describe the defecation reflex.
7. Explain the length-tension relationship in skeletal muscle.
8. Explain the difference between primary and secondary active transport with examples.

III. Reasoning Out: **(4X5=20)**

1. Oral rehydration solutions contain both sodium and glucose. Explain the rationale of this combination.
2. The resting membrane potential of a neuron is approximately -70 mV. Explain why.
3. Cardiac muscle cannot be tetanized. Explain why.
4. Anti-D antibody can be given to an Rh negative mother to prevent erythroblastosis fetalis. Give reasons why.

(PTO)

IV. Very Short Answers: **(10X2=20)**

1. Classify anemias based on morphology of erythrocytes.
2. What is chemotaxis?
3. What is Bombay blood group?
4. What are the gastrointestinal hormones that regulate exocrine pancreatic secretion?
5. Gastric resection can lead to the development of megaloblastic anemia. Why is this so?
6. What is meant by trans-cellular fluids? Give examples.
7. What is meant by plasticity of smooth muscle?
8. Differentiate between voltage induced calcium release and calcium induced calcium release with relevant examples.
9. Explain the cause for muscle stiffness following death.
10. Muscle function in patients with Myasthenia gravis worsens while it improves with activity in patients with Lambert Eaton syndrome. Explain why?

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