Q.P Code **Reg. No.**

PG Degree Regular/Supplementary Examinations in Physiology (M.D)

PAPER II – Systemic Physiology (system providing transport, nutrition and energy) including comparative Physiology

Time: **Three Hours** **Maximum**: **100 Marks**

Essay: **(20)**

1. Discuss factors affecting coronary blood flow in health and disease.

Short Essays **(8 x10 = 80)**

2. Splanchnic circulation in shock.
3. Ventilatory response to altered blood gas pressures
4. Mechanism of Hyperosmolar urine formation
5. Anticoagulation mechanisms in vivo
6. Shivering and sweating in temperature regulation.
7. Oxygen therapy in different types of Hypoxias
8. A 7 year old boy was brought to the casualty with complaints of puffiness of the face and pedal edema. History revealed an upper respiratory tract infection few days before and a decreased urine output of recent origin. On examination he is afebrile,with puffiness around the eyes, abdominal swelling and pedal edema. BP was 95/60 mmof Hg,pulse90/minute. He was treated with steroids and the edema subsided.

   Investigations were: Urine microscopy-normal; Bloodurea10mg/dL, glucose100mg/dL, serum albumin2.3mg/dL(normal3-4 mg/dL), serum cholesterol 300mg/dL.

   24 hr urine output was 1.10 litre.

   Urine analysis: Sodium-10 mEq/l, Creatinine: 60 mg/dL, Protein:
   0.8mg/dL No urinary deposits.
   Renal biopsy during review after giving steroids revealed the following:
   Effacement of podocytes and Loss of filtration slits.

   a) What is the clinical condition?
   b) Comment on the investigative findings.
   c) What is the physiological basis of the treatment in this condition?

9. A 51 year old lady was evaluated for chest pain and difficulty in swallowing solid food. Barium swallow revealed dilated eosophagus at the lower one third with residual barium. Manometric studies confirmed the diagnosis.
   a) What was the cause for dysphagia?
   b) Explain the physiological basis of the manometric study
   c) What is an analogous condition in the GIT presented at birth
   d) How is the above condition managed?