

**Q.P Code**

**Reg. No.**

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

**PAPER IV – Recent advances in the subject (including applied Physiology)**

**Time: Three Hours**

**Maximum: 100 Marks**

**Essay:**

**(20)**

1. Discuss the homeostasis of volume and composition of body fluids and its clinical significance.

**Short Essays**

**(8 x10 = 80)**

2. Genome analysis and genetic counselling
3. Fick's law of diffusion in respiratory physiology.
4. Psychological sex and transgender.
5. AI in the prediction and monitoring of disease conditions.
6. Interventional radiology in clinical medicine
7. Autonomic dysfunction in diabetes mellitus
8. A couple aged 31(wife) and 35(husband) had not conceived after three years of marriage in spite of no planning. Male infertility was ruled out by physical examination and semen analysis. Outline the diagnosis and management of female infertility with respect to the modern techniques. What are the treatment options for primary infertility in the female?
9. A 48 year old chronic diabetic consulted an ophthalmologist for complaints of blurred vision since the last few months. Ophthalmoscopy revealed few areas of dense clumps of capillaries on the retina of both eyes. His fasting blood sugar was 297mg/dL He also had tingling and numbness of the toes since the last few weeks
  - a) What is the clinical condition?
  - b) What are the dense capillaries due to?
  - c) What is the cause for the tingling and numbness?
  - d) What is the immediate and long term treatment?