

**PG Degree Regular/Supplementary Examinations in Family Medicine  
(MD) January 2025**

**Paper I – Basic Sciences as Applied to Family Medicine**

**Time: 3 hrs**

**Max marks:100**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw table/diagrams/flow charts wherever necessary**

**Essay:**

**(20)**

1. Mr. Vijay aged 60 years presents with progressively worsening shortness of breath for the past 2 years and bilateral pedal edema. He is also taking treatment for Diabetes and hypertension for 10 years. His physical examination and echocardiogram confirmed your diagnosis of heart failure with a reduced ejection fraction of 42%.
  - a) Describe the pathophysiology of heart failure
  - b) Enumerate about 5 non-pharmacological interventions in heart failure and how they improve the pathophysiology
  - c) Enumerate 5 drugs used in heart failure, briefly write about their mechanism of action in heart failure

(5+5+10)

**Short Essays:**

**(8x10=80)**

2. Explain the advantages and disadvantages of metered dosed inhalers, dry powder inhalers, and oral medications in treatment of Asthma.
3. Mrs. Geetha, 26-year-old primigravida, at 16 weeks of pregnancy presents regarding her weight gain and change in her heart rate which she monitors with her smartwatch. Your clinical work up is normal for her gestational age. Explain all the physiologic and endocrine changes of a normal pregnancy.
4. Explain about mechanism of action, adverse effects, contraindications of drugs used in drug-sensitive Tuberculosis under the national tuberculosis eradication program. Write about approach to hepatitis developing after initiating anti tubercular treatment.
5. Describe the pathophysiology of Dengue infection, phases of infection and role microbiological investigations in managing dengue fever.
6. Draw a nephron and label its parts. Enumerate 5 drugs used family medicine practice which increases the risk of acute kidney injury when used alone or along with other drugs.
7. Draw and label the parts of eye affected in Diabetes Meletus. Classify pathological changes in Diabetic retinopathy.
8. What are the clinical features of portal hypertension and its pathological change associated with it.
9. What are the physiological changes of ageing that increase the risk of falls in elderly and non-pharmacological methods to mitigate the risks.

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