

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[DM 0822]

AUGUST 2022

Sub. Code :1496

D.M. – PULMONARY MEDICINE

**Paper I – BASIC SCIENCES APPLIED TO PULMONARY MEDICINE
AND CRITICAL CARE**

Q.P. Code: 161496

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on: **(2 x 15 = 30)**

1. Structure, functions and pathology of secondary pulmonary lobule.
2. Control of pulmonary circulation.

II. Write notes on: **(10 x 7 = 70)**

1. Airway resistance.
2. Dead space.
3. Immune responses to aspergillus.
4. Equal pressure point.
5. Structure of SARS-COV2 virus.
6. Oxygen transport in blood.
7. Pathogenesis of tobacco addiction.
8. EBUS elastography.
9. Principles of allergen immunotherapy.
10. Rituximab.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[DM 0124]

JANUARY 2024

Sub. Code :1496

D.M. – PULMONARY MEDICINE

**PAPER I – BASIC SCIENCES APPLIED TO PULMONARY MEDICINE AND
CRITICAL CARE**

Q.P. Code: 161496

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Describe the methods to assess diffusion capacity of the lung (DLCO). What are the factors influencing DLCO? Enumerate the causes of altered DLCO.
2. Write a note on cardiopulmonary exercise testing. What are the indications and contraindications for cardio-pulmonary exercise testing? How will you perform risk stratification based on functional assessment in a patient posted for lobectomy?

II. Short notes on

(10 x 7 = 70)

1. What is loop gain? Explain its role in the control of ventilation during sleep.
2. What is impulse oscillometry? Discuss the indications, advantages and disadvantages of this modality.
3. Describe the alveolar gas equation and its clinical importance.
4. Define an aerosol and discuss the factors affecting aerosol delivery. List drugs that can be delivered as aerosols.
5. Explain in detail about carbon-dioxide dissociation curve and the factors influencing it.
6. Describe the distribution of perfusion in the lung and its clinical importance
7. Define time constant in lung physiology. What are its determinants and clinical relevance?
8. Discuss the role of point of care ultrasonography in pulmonary and critical care medicine.
9. Enumerate the mediastinal lymph node stations and describe their clinical importance.
10. Describe the control of ventilation and pathophysiology of respiratory failure.
