

[KY 013]

MAY 2011

Sub. Code: 4013

M.Sc. (MEDICAL PHYSICS) DEGREE EXAMINATION

FIRST YEAR

(Revised Regulations for Candidates admitted from 2010-2011)

PAPER III – ANATOMY, PHYSIOLOGY AND PATHOLOGY

Q.P. Code: 284013

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. Describe in detail about the inflammation, ulceration, malignant transformation and mutations.
2. Describe in detail the anatomy and physiology of gastrointestinal system.

II. Write notes on:

(10 x 6 = 60)

1. Physical laws of respiration.
2. Functions of spleen.
3. Carcinogenesis.
4. Blood and its composition.
5. Anatomy of bone and cartilage.
6. Hereditary cancers.
7. Hematological effects of radiation.
8. Cancer incidence in India.
9. Immunity and cancer.
10. Degeneration.

M.Sc. (MEDICAL PHYSICS) DEGREE EXAMINATION**FIRST YEAR****(Revised Regulations for Candidates admitted from 2010-2011)****PAPER III – ANATOMY, PHYSIOLOGY AND PATHOLOGY****Q.P. Code: 284013****Time : Three Hours****Maximum : 100 marks****Answer ALL questions in the same order.****I. Elaborate on:****Pages Time Marks
(Max.) (Max.) (Max.)**

- | | | | |
|--|----|---------|----|
| 1. Describe the anatomy and physiology of Brain. | 17 | 40 min. | 20 |
| 2. Describe the anatomy and physiology of Reproductive system. | 17 | 40 min. | 20 |

II. Write notes on :

- | | | | |
|--|---|---------|---|
| 1. Physiology of menstruation. | 4 | 10 min. | 6 |
| 2. Dysplasia, metaplasia and neoplasia. | 4 | 10 min. | 6 |
| 3. Physiology of hearing. | 4 | 10 min. | 6 |
| 4. Anatomy of spinal cord. | 4 | 10 min. | 6 |
| 5. Kidney and its functions. | 4 | 10 min. | 6 |
| 6. Lymphatic system. | 4 | 10 min. | 6 |
| 7. Anatomy of the eye. | 4 | 10 min. | 6 |
| 8. Usefulness of imaging modalities in radiotherapy. | 4 | 10 min. | 6 |
| 9. Wound healing. | 4 | 10 min. | 6 |
| 10. Carcinoma insitu. | 4 | 10 min. | 6 |

M.Sc. (MEDICAL PHYSICS) DEGREE EXAMINATION**FIRST YEAR****(Revised Regulations for Candidates admitted from 2010-2011)****PAPER III – ANATOMY, PHYSIOLOGY AND PATHOLOGY****Q.P. Code: 284013****Time : Three Hours****Maximum : 100 marks****Answer ALL questions in the same order.****I. Elaborate on:****Pages Time Marks
(Max.) (Max.) (Max.)**

- | | | | |
|--|----|---------|----|
| 1. Describe Female Reproductive system? Explain reproductive cycle and Fertilization. | 17 | 40 min. | 20 |
| 2. Draw and Explain about Normal Cell structure. Describe it's function? Brief about Mechanism of cell injury. | 17 | 40 min. | 20 |

II. Write Notes on:

- | | | | |
|--|---|---------|---|
| 1. Explain Radiation injury. | 4 | 10 min. | 6 |
| 2. What to you mean by Gene mutation and chromosomal abnormality? | 4 | 10 min. | 6 |
| 3. Describe Acute and chronic inflammation. | 4 | 10 min. | 6 |
| 4. Explain excretory system – Kidney and its function. | 4 | 10 min. | 6 |
| 5. Functions of Thyroid gland and Pancreas. | 4 | 10 min. | 6 |
| 6. Microscopic structure of cartilage and Bone. | 4 | 10 min. | 6 |
| 7. Write short notes on physiology of respiration. | 4 | 10 min. | 6 |
| 8. Write on Physiological properties of heart muscle and brief about cardiac dynamics. | 4 | 10 min. | 6 |
| 9. Short notes on surface marker of Thorax, Abdomen, and Head & neck. | 4 | 10 min. | 6 |
| 10. Define: Hyperplasia, Dysplasia, Neoplasia. | 4 | 10 min. | 6 |

M.Sc. (MEDICAL PHYSICS) DEGREE EXAMINATION**FIRST YEAR****(Revised Regulations for Candidates admitted from 2010-2011)****PAPER III – ANATOMY, PHYSIOLOGY AND PATHOLOGY****Q.P. Code: 284013****Time : Three Hours****Maximum : 100 marks****Answer ALL questions in the same order.****I. Elaborate on:****Pages Time Marks
(Max.) (Max.) (Max.)**

- | | | | |
|---|----|---------|----|
| 1. Describe the structure of the urinary system and function of the kidney. | 17 | 40 min. | 20 |
| 2. Describe the cell division – mitosis and meiosis. | 17 | 40 min. | 20 |

II. Write Notes on:

- | | | | |
|--|---|---------|---|
| 1. RNA. | 4 | 10 min. | 6 |
| 2. Reproductive cycle in Female. | 4 | 10 min. | 6 |
| 3. Structure of muscle and types of muscle. | 4 | 10 min. | 6 |
| 4. Degeneration and Regeneration of neurons. | 4 | 10 min. | 6 |
| 5. Anemia. | 4 | 10 min. | 6 |
| 6. Emphysema. | 4 | 10 min. | 6 |
| 7. Function of thyroid gland. | 4 | 10 min. | 6 |
| 8. Surface marking of head and neck. | 4 | 10 min. | 6 |
| 9. Wound healing. | 4 | 10 min. | 6 |
| 10. Regulation of body temperature. | 4 | 10 min. | 6 |

[LC 0413]

APRIL 2013

Sub. Code: 4013

M.Sc. (MEDICAL PHYSICS) DEGREE EXAMINATION

FIRST YEAR

(Revised Regulations for Candidates admitted from 2010-2011)

PAPER III – ANATOMY, PHYSIOLOGY AND PATHOLOGY

Q.P. Code: 284013

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. Classification, Function of connective tissue (cells).
2. Describe the stomach and its parts and briefly explain the function of the stomach.

II. Write notes on:

(10 x 6 = 60)

1. Describe Squamous cell carcinoma.
2. Parts of the Liver.
3. Function of the Pancreas.
4. Types of Cartilage.
5. What are the main arteries in the body.
6. Describe an Inflammatory reaction.
7. Describe the respiratory cycle.
8. Chromosomes.
9. Structure of the heart.
10. What is the fracture? Describe fracture healing.

[LD 1013]

OCTOBER 2013

Sub. Code: 4013

M.Sc. (MEDICAL PHYSICS) DEGREE EXAMINATION

FIRST YEAR

(Revised Regulations for Candidates admitted from 2010-2011 onwards)

PAPER III – ANATOMY, PHYSIOLOGY AND PATHOLOGY

Q.P. Code: 284013

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. Write down divisions, sub-divisions, boundaries and contents of the Mediastinum.
Explain various structures seen in the anteroposterior, lateral and oblique radiographs of the thorax.
2. Define acute inflammation. Give a brief outline on various chemical mediators and their role in acute inflammation.

II. Write notes on:

(10 x 6 = 60)

1. Surface anatomy of the abdomen and name the organs seen in its different quadrants.
2. Functions of the Liver.
3. Physiology of respiration.
4. Define Neoplasm. Write about the basic differences between Benign and Malignant Neoplasms.
5. Define mutation. Name the different types of gene mutations.
6. Immediate effects of whole-body ionizing radiation.
7. Draw and name the different parts of the Physiologic (functional) nephron.
8. Varieties of cartilage.
9. Basics of ABO Blood Grouping.
10. Types of Lymphocytes and its function.

[LE 0414]

APRIL 2014

Sub. Code: 4013

M.Sc. (MEDICAL PHYSICS) DEGREE EXAMINATION

FIRST YEAR

(Revised Regulations for Candidates admitted from 2010-2011 onwards)

PAPER III – ANATOMY, PHYSIOLOGY AND PATHOLOGY

Q.P. Code: 284013

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. Describe Male Reproductive System. Add a note on Male Infertility.
2. Immediate and late effects of whole- body exposure to Ionizing radiation.

II. Write notes on:

(10 x 6 = 60)

1. Definition and Types of Necrosis.
2. Definition and major components of Acute Inflammation.
3. Primary and Secondary haemostasis (Coagulation of blood).
4. Pituitary glands and its functions.
5. Pulmonary(Lung) Volume and capacity.
6. Function of the Salivary glands.
7. Define mutation. Name the different types of gene mutations.
8. Define Metaplasia and give two examples.
9. Surface marking of head and neck.
10. Cellular effectors and cytokines involved in antitumor (Cancer) immunity.

[LF 1014]

OCTOBER 2014

Sub. Code: 4013

M.Sc. (MEDICAL PHYSICS) DEGREE EXAMINATION

FIRST YEAR

(Revised Regulations for Candidates admitted from 2010-2011 onwards)

PAPER III – ANATOMY, PHYSIOLOGY AND PATHOLOGY

Q.P. Code: 284013

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. Draw and describe in detail the structure of cell. Write the functions of each organell.
2. Write in detail about the components of blood. Describe the Anatomy of heart and physiological properties of heart muscle.

II. Write notes on:

(10 x 6 = 60)

1. Functions of liver.
2. Surface anatomy of Abdomen and contents of each quadrant.
3. Functions of pituitary hormones.
4. What is mutation and types of gene mutation?
5. Functions of mouth.
6. Anatomy of Stomach.
7. Difference between Benign and malignant tumor.
8. Types and functions of bone.
9. Complications of wound healing.
10. Boundaries and contents of thoracic cavity.

[LG 0415]

APRIL 2015

Sub. Code: 4013

M.Sc., MEDICAL PHYSICS DEGREE EXAMINATION
(Revised Regulations for Candidates admitted from 2010-2011 Batch onwards)
FIRST YEAR
PAPER III – ANATOMY, PHYSIOLOGY AND PATHOLOGY

Q.P. Code : 284013

Time : Three hours

Maximum : 100 marks

I. Elaborate on :

(2 x 20 = 40)

1. Describe in detail the anatomy and physiology of Gastrointestinal tract.
2. Describe in detail about ulceration, inflammation, mutation and malignant transformation.

II. Write notes on :

(10 x 6 = 60)

1. Structure of Cell wall
2. Functions of spleen
3. Blood grouping and its importance
4. Structure of bone and cartilage
5. Functions of connective tissue
6. Haematological effects of Radiation
7. Functions of Nucleus
8. Structure of large artery
9. Mechanism of Carcinogenesis
10. Short notes on muscle tissue

[LH 0415]

OCTOBER 2015

Sub. Code: 4013

M.Sc., MEDICAL PHYSICS EXAMINATION
(Revised Regulations for Candidates admitted from 2010-2011 Batch onwards)
FIRST YEAR
PAPER III – ANATOMY, PHYSIOLOGY AND PATHOLOGY

Q.P. Code : 284013

Time : Three hours

Maximum : 100 marks

I. Elaborate on :

(2 x 20 = 40)

1. Write briefly about the mechanism of cell injury & Describe in detail about the immediate effects of whole body ionizing radiation.
2. Describe the anatomy and functions of the liver & Briefly mention about the various liver disorders.

II. Write notes on :

(10 x 6 = 60)

1. Structure & action of Insulin.
2. Autonomic nervous system.
3. Basics of ABO Blood grouping.
4. Components of connective tissue.
5. Physiology of formation of Urine.
6. Describe Female Reproductive system.
7. Describe Acute & Chronic inflammation.
8. Write a note on Sternum.
9. Structures seen in Anteroposterior, lateral & oblique radiographs of the thorax.
10. What the main arteries in the body.

[LJ 1016]

OCTOBER 2016

Sub. Code: 4013

**M.Sc. MEDICAL PHYSICS EXAMS
FIRST YEAR
PAPER III – ANATOMY, PHYSIOLOGY AND PATHOLOGY**

Q.P. Code : 284013

Time : Three hours

Maximum : 100 Marks

I. Elaborate on: **(2 x 20 = 40)**

1. Mechanism of carcinogenesis. Explain the modes of spread of malignant tumour.
2. Describe anatomy and functions of stomach. Add a note on composition and significance of gastric juice.

II. Write notes on: **(10 x 6 = 60)**

1. Thyroxine and its functions.
2. Structure of spinal cord.
3. Blood coagulation mechanism.
4. Differences between osteoclast and osteoblast.
5. Micturition reflex.
6. Male reproductive organs.
7. Chemical mechanism of inflammation.
8. Diaphragm and its importance.
9. Radiographic anatomy.
10. Functions of cell nucleus.

[LL 1017]

OCTOBER 2017

Sub. Code: 4013

**M.Sc. MEDICAL PHYSICS EXAMS
FIRST YEAR
PAPER III – ANATOMY, PHYSIOLOGY AND PATHOLOGY**

Q.P. Code : 284013

Time : Three hours

Maximum : 100 Marks

I. Elaborate on: **(2 x 20 = 40)**

1. Describe about lung and its function. Write in detail about the physiology of respiration.
2. Write in detail about cell structure and its function. Write a note on the mechanism of cell injury.

II. Write notes on: **(10 x 6 = 60)**

1. MRI Scan.
2. Apoptosis.
3. Difference between benign and malignant tumours.
4. Blood pressure and its regulation.
5. Juxta glomerular apparatus.
6. Ossification.
7. Cells of immune system.
8. Endoplasmic reticulum.
9. Spermatogenesis.
10. Anatomy of heart.

[LM 0518]

MAY 2018

Sub. Code: 4013

**M.Sc. MEDICAL PHYSICS EXAMS
FIRST YEAR
PAPER III – ANATOMY, PHYSIOLOGY AND PATHOLOGY**

Q.P. Code : 284013

Time : Three hours

Maximum : 100 Marks

I. Elaborate on: **(2 x 20 = 40)**

1. Describe the anatomy and function of the Kidney. Briefly explain about the formation and excretion of urine.
2. Mention the etiology of cancer. Briefly explain the systemic effects of Neoplasia, and mode of spread of Malignant tumours.

II. Write notes on: **(10 x 6 = 60)**

1. Function of Thyroid gland.
2. Synovial joint.
3. Physiology of taste.
4. Blood grouping and Rh typing.
5. Mechanism of blood pressure and its regulation.
6. Laws of respiration.
7. Pituitary gland and its functions.
8. Insulin.
9. Female reproductive organs.
10. Structure and function of Mitochondria.

[LN 1018]

OCTOBER 2018

Sub. Code: 4013

M.Sc. MEDICAL PHYSICS DEGREE EXAMS

FIRST YEAR

PAPER III – ANATOMY, PHYSIOLOGY AND PATHOLOGY

Q.P. Code : 284013

Time : Three hours

Maximum : 100 marks

I. Elaborate on :

(2 x 20 = 40)

1. Describe in detail about ulceration, inflammation, mutation, and malignant transformation.
2. Define Blood Pressure. Describe its mechanism and regulation.

II. Write notes on :

(10 x 6 = 60)

1. Acute and Chronic inflammation.
2. Boundaries and contents of thoracic cavity.
3. Types of cartilage.
4. Define mutation. Name the different types of gene mutation.
5. Parts and functions of nephrons.
6. Pulmonary (Lung) Volume Capacity.
7. Functions of pancreas.
8. Functions of Nucleus.
9. Male Reproductive organs.
10. Structure of Spinal Cord.

[LP 1019]

OCTOBER 2019

Sub. Code: 4013

M.Sc. MEDICAL PHYSICS DEGREE EXAMS

FIRST YEAR

PAPER III – ANATOMY, PHYSIOLOGY AND PATHOLOGY

Q.P. Code : 284013

Time : Three hours

Maximum : 100 marks

I. Elaborate on :

(2 x 20 = 40)

1. Describe the stomach and its parts. Explain its physiological functions.
2. Describe the cell division – Mitosis and Meiosis.

II. Write notes on :

(10 x 6 = 60)

1. Structure of muscles & Types of muscles.
2. Degeneration and Regeneration of neurons.
3. Anemia.
4. Female Reproductive System.
5. Types of neurons.
6. Functions of Liver.
7. Structure of the Heart.
8. Special Senses.
9. Structure of Cell Wall.
10. Haematological effects of Radiation.

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

[AHS 0321]

MARCH 2021

Sub. Code: 4013

(OCTOBER 2020 EXAM SESSION)

M.Sc. MEDICAL PHYSICS

FIRST YEAR (From 2010-2011 onwards)

PAPER III – ANATOMY, PHYSIOLOGY AND PATHOLOGY

Q.P. Code : 284013

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on:

(2 x 20 = 40)

1. Describe the anatomy and physiology of brain.
2. Write down the divisions, subdivisions, boundaries and contents of the mediastinum. Explain various structures seen in the anteroposterior, lateral and oblique radiograph of the thorax.

II. Write Short Notes on:

(10x6 = 60)

1. Anatomy of heart.
2. Physiology of taste sensation.
3. Wound healing.
4. Anatomy of stomach.
5. Functions of pituitary hormones.
6. Physiology of respiration.
7. Difference between benign and malignant tumor.
8. Menstrual cycle.
9. Head and neck surface marking.
10. Pulmonary(lung) volume capacities.

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

[AHS 0222]

**FEBRUARY 2022
(OCTOBER 2021 EXAM SESSION)**

Sub. Code: 4013

M.Sc. MEDICAL PHYSICS

FIRST YEAR

(Candidates admitted from 2010-2011 onwards – Paper III)

(Candidates admitted from 2020-2021 onwards – Paper IV)

PAPER III & IV – ANATOMY, PHYSIOLOGY AND PATHOLOGY

Q.P. Code : 284013

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on: (2 x 20 = 40)

1. Describe about lung and its function. Write in detail about the physiology of respiration.
2. Immediate and late effects of whole-body exposure to Ionizing radiation.

II. Write Short Notes on: (10x6 = 60)

1. Functions of liver.
2. Acute and chronic inflammation.
3. Physiology of smell sensation.
4. Basics of ABO blood grouping and typing.
5. Structure of bone and cartilage.
6. Kidney and its functions.
7. Surface anatomy of the abdomen and name the organs seen in its quadrants.
8. Wound healing.
9. Define dysplasia, metaplasia and Neoplasia with examples.
10. Structure and actions of insulin.
