

[MBBS 0221]

FEBRUARY 2021

Sub.Code :6054

**M.B.B.S. DEGREE EXAMINATION
FIRST YEAR
PAPER II – PHYSIOLOGY**

Q.P. Code: 526054

Time: Three hours

Maximum : 100 Marks (80 Theory + 20MCQS)

Answer All Questions

I. Essay:

(2 x 15 = 30)

1. Name the functional divisions of the Cerebellum. Describe the structure, connections and functions of cerebellum .Mentions two signs of cerebellar lesions.
2. Describe the Arterial Blood Pressure. Describe nervous regulation of Arterial Blood Pressure.

II. Write notes on:

(10 x 5 = 50)

1. Chloride Shift.
2. Changes that occur in acclimatization.
3. Draw a normal spirogram and write about the volumes and capacities of lung.
4. Polysomnography.
5. Functions of Hypothalamus.
6. Peculiarities of pulmonary circulation.
7. Hypovolemic Shock.
8. Cardiopulmonary resuscitation.
9. Control of Appetite.
10. Colour vision.

[MBBS 0521]

MAY 2021

Sub.Code :6054

**M.B.B.S. DEGREE EXAMINATION
FIRST YEAR
PAPER II – PHYSIOLOGY**

Q.P. Code: 526054

Time: Three hours

Maximum: 100 Marks (80 Theory + 20MCQs)

Answer All Questions

I. Essay:

(2 x 15 = 30)

1. Discuss about transport of oxygen in blood. Draw and explain Oxygen – Hemoglobin dissociation curve. Add a note on significance of P_{50} .
2. Enumerate the Ascending tracts of Spinal cord. Explain in detail the pathway for pain. Add a note on Analgesic system.

II. Write notes on:

(10 x 5 = 50)

1. Dark Adaptation.
2. Baroreceptors.
3. Speech areas and Aphasia.
4. Physiological changes in human body during exercise.
5. Acclimatization at high altitude.
6. Functions of Hypothalamus.
7. Taste pathway.
8. Properties of Cardiac Muscle.
9. Hypoxia and its Types.
10. Otolith Organ.

M.B.B.S. DEGREE EXAMINATION
(For the candidates admitted from the Academic Year 2019-2020)
FIRST YEAR
PAPER II – PHYSIOLOGY

Q.P. Code: 526054

Time: Three hours

Maximum: 100 Marks (80 Theory + 20MCQs)

Answer All Questions

I. Essay: **(2 x 15 = 30)**

1. Explain in detail about the conduction system of heart. Add a note on action potentials of ventricular muscle and pacemaker.
2. Classify synapse. Mention the various properties of synapse. Add a note on central neuro transmitters.

II. Short Notes: **(10 x 5 = 50)**

1. Intrapleural pressure.
2. ODC curve.
3. Renin-angiotensin system.
4. Photo receptors.
5. Tract of Goll and Burdach.
6. Referred pain.
7. Berger's rhythm.
8. Jugular venous pulse.
9. Foetal circulation.
10. Auditory pathway.

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

[MBBS 0522]

MAY 2022

Sub. Code : 6054

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2019-2020)

FIRST YEAR – SUPPLEMENTARY (CBME)

PAPER II – PHYSIOLOGY

Q.P. Code: 526054

Time: Three hours

Maximum: 100 Marks (80 Theory + 20MCQs)

Answer All Questions

I. Essay:

(2 x 15 = 30)

1. Define cardiac output. Factors regulating cardiac output. Discuss one method for measuring cardiac output.
2. Discuss about the nuclei, connections and functions of Basal ganglia. Add a note on Parkinson's disease.

II. Short Notes:

(10 x 5 = 50)

1. Pain pathway.
2. Composition and functions of CSF.
3. Respiratory membrane.
4. Periodic breathing.
5. Features of hypovolemic shock.
6. Non respiratory functions of lung.
7. Muscle spindle.
8. Anterior spino-thalamic tract.
9. Intra-ocular fluids.
10. Rinnes test and its significance.

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

[MBBS 0123]

JANUARY 2023

Sub. Code : 6054

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2019-2020)

FIRST YEAR – (CBME)

PAPER II – PHYSIOLOGY

Q.P. Code: 526054

Time: Three hours

Maximum: 100 Marks (80 Theory + 20MCQs)

Answer All Questions

I. Essay:

(2 x 15 = 30)

1. A 60 year old man who is a smoker, diabetic was brought to the emergency department with complaints of retrosternal pain radiating to the medial side of the left arm on exertion, palpitation, sweating and shortness of breath.
 - a) What is the likely diagnosis?
 - b) Discuss the peculiarities and regulation of coronary circulation.
 - c) Add a note on cardiac biomarkers specific to the above said condition.
2. Describe the various Respiratory Centres and discuss in detail about the neural regulation of respiration.

II. Write Short Notes on:

(10 x 5 = 50)

1. Describe the Left ventricular pressure changes in cardiac cycle.
2. Write the factors influencing venous return.
3. Describe the mechanism of CO₂ transport in blood.
4. What are the non-respiratory functions of lung?
5. Mention the differences between REM and NREM sleep.
6. What is Brown-Sequard syndrome? Write its clinical features.
7. What are the functions of hypothalamus?
8. Trace the Olfactory pathway
9. Mention the tests of hearing.
10. Write a note on errors of refraction.

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

[MBBS 0323]

MARCH 2023

Sub. Code : 6054

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2019-2020)

FIRST YEAR – SUPPLEMENTARY (CBME)

PAPER II – PHYSIOLOGY

Q.P. Code: 526054

Time: Three hours

Maximum: 100 Marks (80 Theory + 20MCQs)

Answer All Questions

I. Essay:

(2 x 15 = 30)

1. Define blood pressure, systolic blood pressure and diastolic blood pressure. Describe the short term regulation of blood pressure. Explain vasovagal syncope.
2. Trace the visual pathway. Describe disorders of visual fields in relation to visual pathway.

II. Write Short Notes on:

(10 x 5 = 50)

1. PR interval in ECG.
2. Regulation of cerebral blood flow.
3. Compliance of the lungs.
4. Hypoxia.
5. Organisation and functions of respiratory centers.
6. Analgesia system.
7. NREM and REM sleep.
8. Taste pathway.
9. Functions of middle ear.
10. Classification of memory.

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

[MBBS 1123]

NOVEMBER 2023

Sub. Code : 6054

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2019-2020)

FIRST YEAR – (CBME)

PAPER II – PHYSIOLOGY

Q.P. Code: 526054

Time: Three hours

Maximum: 100 Marks (80 Theory + 20MCQs)

Answer All Questions

I. Essay:

(2 x 15 = 30)

1. A 66 year old male with history of hypertension was brought to the Out Patient Department (OPD) with complaints of inability to use his right upper and right lower limb with difficulty in speech following an episode of loss of consciousness.
 - a) What is the most likely diagnosis?
 - b) Explain in detail the course of the pyramidal tracts.
 - c) Write the differences between UMN and LMN lesion.
2. A 55 year old male patient came to the Out Patient Department (OPD) with complaints of headache, giddiness, blurring of vision. On examination his blood pressure was 160/100 mmHg.
 - a) What is the diagnosis?
 - b) Describe the various mechanisms involved in short-term regulation of blood pressure.
 - c) Add a note on Goldblatt hypertension.

II. Write Short Notes on:

(10 x 5 = 50)

1. Draw a normal ECG in lead II. Describe the waveforms with its duration and intervals.
2. Write briefly about hypovolemic shock and its management.
3. Write about the physiological changes at high altitude.
4. Draw a neat diagram of spirogram and mark the normal values of lung volumes and capacities.
5. Write about the peculiarities of pulmonary circulation.
6. Mention the properties of reflexes.
7. Write the causes and features of Parkinson's disease.
8. Write a note on functions of middle ear.
9. What is Dark adaptation?
10. Trace the Taste pathway.

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

[MBBS 0124]

JANUARY 2024

Sub. Code : 6054

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2019-2020)

FIRST YEAR – SUPPLEMENTARY (CBME)

PAPER II – PHYSIOLOGY

Q.P. Code: 526054

Time: Three hours

Maximum: 100 Marks (80 Theory + 20MCQs)

Answer All Questions

I. Essay:

(2 x 15 = 30)

1. A 50 year old male went on a visit to Shimla. On reaching there, he experienced difficulty in breathing, complaints of headache and showed signs of altered sensorium.
 - a) What is the most likely problem he is experiencing?
 - b) What are the different types of above condition?
 - c) Write about its features and management.
2. Trace the visual pathway with a neat diagram. Write about the effects of lesions at various levels in visual pathway.

II. Write Short notes on:

(10 x 5 = 50)

1. What are Baroreceptors? Write the role of Baroreceptors in regulation of Blood pressure.
2. Write a note on Triple response.
3. Define Cardiac output. What are the methods to measure cardiac output?
4. What are the different types of artificial respiration? Explain one in detail.
5. What is Surfactant? Mention its functions.
6. What is Aphasia? What are the types of Aphasia?
7. Write in detail about the functions of Cerebellum.
8. Explain about the formation, circulation and functions of Cerebrospinal fluid.
9. Draw the structure of Organ of Corti. Mention its role in hearing.
10. What are the theories of Colour vision?

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

[MBBS 0824]

AUGUST 2024

Sub. Code : 6054

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2020 -2021 Onwards)

FIRST YEAR – (CBME)

PAPER II – PHYSIOLOGY

Q.P. Code: 526054

Time: Three hours

Maximum: 100 Marks (80 Theory + 20MCQs)

Answer All Questions

I. Essay: (2 x 15 = 30)

(3+7+5)

1. a) Write about Respiratory centres.
b) Explain in detail about the chemical regulation of Respiration.
c) Add a note on Periodic breathing.
(1+12+2)
2. A 65 yr old man was brought to Medical OP with c/o altered gait, difficulty in speech and difficulty in coordinating the movements. O/E – Difficulty in performing tests for coordination and pendular knee jerk were noted.
 - a) Where is the site of lesion?
 - b) Describe the connections and functions of the structure involved.
 - c) What is Dysmetria?

II. Write Short Notes on: (10 x 5 = 50)

1. Peculiarities of coronary circulation.
2. Compliance.
3. Reticular formation.
4. Blood Brain Barrier (BBB).
5. Factors which regulate the heart rate.
6. Decompression sickness.
7. Functions of Hypothalamus.
8. Define Law of Laplace. Mention its application in respiratory system.
9. Fetal circulation.
10. Rod receptor potential.

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

[MBBS 0924]

SEPTEMBER 2024

Sub. Code : 6054

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2020 -2021 Onwards)

**FIRST PROFESSIONAL – (CBME) - SUPPLEMENTARY
PAPER II – PHYSIOLOGY**

Q.P. Code: 526054

Time: Three hours

Maximum: 100 Marks (80 Theory + 20MCQs)

Answer All Questions

I. Essay: (2 x 15 = 30)

(1+10+4)

1. A 55-year-old male was brought to Emergency OPD with C/o severe, excruciating pain, over the left side of chest, radiating to left arm with profuse sweating. O/E the ECG showed ST elevation and T wave inversion.

- a) What is the probable diagnosis?
- b) Describe the Special features of Coronary circulation.
- c) Describe the methods to measure coronary circulation.

(1+10+4)

2. A 25-year-old woman delivered a baby at 30 weeks of gestation. The baby was diagnosed with respiratory distress syndrome.

- a) What is the cause of Respiratory distress?
- b) Describe the synthesis, secretion and functions of surfactant.
- c) Add a note on compliance.

II. Write Short Notes on: (10 x 5 = 50)

1. Oxygen-hemoglobin Dissociation curve.
2. Decompression sickness.
3. Pacemaker potential.
4. CNS ischemic Response.
5. Neuroglia.
6. Brain-Analgesia system.
7. Rapid Eye Movement (REM) sleep.
8. Impedance matching.
9. Olfactory pathway.
10. Color blindness.

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

[MBBS 0825]

AUGUST 2025

Sub. Code: 6054

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2021 – 2022 to 2023 – 2024)

FIRST PROFESSIONAL – (CBME)

PAPER II – PHYSIOLOGY

Q.P. Code: 526054

Time: Three hours

Maximum: 100 Marks (80 Theory + 20MCQs)

Answer All Questions

Add appropriate diagrams wherever necessary

I. Essay:

(2 x 15 = 30)

(1+12+2)

1. A 60 yr old male attended the Medical OP with c/o difficulty in walking and initiating the movements. O/E, resting tremor, masklike face and hypertonia were noted.

- a) What is the probable diagnosis?
- b) Describe the connections and functions of the nuclei involved.
- c) Add a note on its management.

(11+4)

2. Describe the various phases of cardiac cycle with suitable diagram. Add a note on heart sounds.

II. Write Short Notes on:

(10 x 5 = 50)

1. Trace out the Optic pathway.
2. Conditioned reflex.
3. Brown Sequard syndrome.
4. Write about long term regulation of blood pressure.
5. Thalamic syndrome.
6. Respiratory membrane.
7. Non rapid eye movement (NREM) sleep.
8. Effects of gravitational forces.
9. Types of abnormal breathing.
10. Bends disease.

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

[MBBS 1025]

OCTOBER 2025

Sub. Code: 6054

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2021 – 2022 to 2023 – 2024)

FIRST PROFESSIONAL – SUPPLEMENTARY (CBME)

PAPER II – PHYSIOLOGY

Q.P. Code: 526054

Time: Three hours

Maximum: 100 Marks (80 Theory + 20 MCQs)

Answer All Questions

Add appropriate diagrams wherever necessary

I. Essay:

(2 x 15 = 30)

1. What is synapse? Mention its types and explain in detail the properties of synapse. (2+3+10)
2. Define Shock. Classify shock and write in detail the stages of Shock. Add a note on its management. (2+10+3)

II. Write Short Notes on:

(10 x 5 = 50)

1. Composition, formation and functions of CSF.
2. Dark adaptation.
3. Write a note on coronary circulation.
4. Organ of Corti.
5. Dysbarism.
6. Lead II ECG.
7. Functions of Limbic system.
8. Chemical regulation of respiration.
9. Conditioned reflex.
10. Trace the pathway for crude touch.

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

[MBBS 0726]

JULY 2026

Sub. Code: 6054

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2022 – 2023 & 2023 – 2024)

FIRST PROFESSIONAL – (CBME)

PAPER II – PHYSIOLOGY

Q.P. Code: 526054

Time: Three hours

Maximum: 100 Marks (80 Theory + 20MCQs)

Answer All Questions

Add appropriate diagrams wherever necessary

Time: Three hours

Maximum: 100 Marks (80 Theory + 20MCQs)

Answer All Questions

I. Essay:

(2 x 15 = 30)

1. Define arterial blood pressure. Describe the nervous regulation of arterial blood pressure.
2. A 40 year male came to OPD with complaints of unstable gait, slurred speech and difficulty in picking up objects. On examination, he had ataxic gait with loss of coordination of movements and intentional tremors.
 - a) Describe the functional lobes of cerebellum (3)
 - b) Explain the neural circuit within the cerebellum (5)
 - c) Explain the functions of cerebellum (5)
 - d) Add a note of cerebellar function test (2)

II. Write Short Notes on:

(10 x 5 = 50)

1. Artificial Respiration.
2. Oxygen haemoglobin dissociation curve.
3. Excitation contraction coupling.
4. Compare REM and Non-REM sleep.
5. Triple response.
6. Doctor patient relationship.
7. Hypovolemic shock.
8. Factor affecting cardiac output.
9. Functions of Hypothalamus.
10. Pain pathway.
