

[LD 0212]

AUGUST 2013

Sub. Code: 1211

DIPLOMA IN CRITICAL CARE TECHNOLOGY
SECOND YEAR
PAPER I – APPLIED ANATOMY & PHYSIOLOGY

Q.P. Code : 841211

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. Blood supply to the brain.
2. What is cardiac cycle? Explain the various stages / phases of cardiac cycle.
3. Describe the mechanism of transport of Oxygen and Carbondioxide in the blood.

II. Write notes on:

(10 x 5 = 50)

1. Diaphragm.
2. Pain pathway.
3. Pulmonary circulation.
4. Brancho pulmonary segment.
5. What is hypoxia. Write about any two types of hypoxia you know.
6. Cardiac output.
7. Cycle of breathing.
8. What is an ECG (Electrocardiogram). Explain its uses.
9. Indications and complications of arterial cannulations.
10. Sedation.

III. Short Answers on:

(10 x 2 = 20)

1. Name the parts of brain.
2. SA node.
3. Pericardium.
4. Accessory muscles of respiration.
5. Referred pain.
6. Respiratory pump.
7. Tidal volume.
8. Indications for CVP monitoring.
9. Pulse pressure.
10. Preload.

[LE 0212]

FEBRUARY 2014

Sub. Code: 1211

DIPLOMA IN CRITICAL CARE TECHNOLOGY
SECOND YEAR
PAPER I – APPLIED ANATOMY & PHYSIOLOGY
Q.P. Code : 841211

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on: **(3 x 10 = 30)**

1. Draw labelled diagram of the respiratory system and describe the functions of larynx.
2. Describe the conducting system of the heart. Mention the factors affecting heart rate.
3. Explain about Pain Pathway.

II. Write notes on: **(10 x 5 = 50)**

1. Brain death.
2. Flow of blood through the heart.
3. Define Pulse. List the main sites on the body surface where pulse is detected.
4. Blood supply to the lungs.
5. Pulmonary function test.
6. Brain injury.
7. Aorta.
8. Define blood pressure. How is it measured.
9. Transport of gases in the blood stream.
10. Myocardium.

III. Short Answers on: **(10 x 2 = 20)**

1. Tidal volume.
2. Pacemaker of heart.
3. Preload.
4. Cough reflex.
5. Referred pain.
6. Pericardium.
7. Cardiac Output.
8. Complications of arterial cannulation.
9. Lobes of lungs.
10. Bones of the thoracic cage.

[LF 0212]

AUGUST 2014

Sub. Code: 1211

DIPLOMA IN CRITICAL CARE TECHNOLOGY
SECOND YEAR
PAPER I – APPLIED ANATOMY & PHYSIOLOGY
Q.P. Code : 841211

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on: **(3 x 10 = 30)**

1. What are the types of Respiratory failure? Write about the causes and management?
2. What is CVP? How is it measured? Mention various factors affecting its measurement?
3. Autonomic nervous system?

II. Write notes on: **(10 x 5 = 50)**

1. Coronary blood flow.
2. Spirometer recording showing lung volumes and capacities.
3. Metabolic requirement of brain.
4. Work of breathing.
5. Oxygen dissociation curve.
6. Cranial nerves.
7. Cardiac output and various factors affecting it.
8. Write the anatomy of Pharynx.
9. Write the anatomy of Brainstem.
10. Chambers of heart.

III. Short Answers on: **(10 x 2 = 20)**

1. Factors affecting pulmonary function.
2. Intercostal muscles.
3. Explain: Vital Capacity.
4. What is brain Death.
5. Name the respiratory centers.
6. Pericardium.
7. Cardiac cycle.
8. What is Preload.
9. Metabolic acidosis.
10. Diaphragm.

[LH 0815]

AUGUST 2015

Sub. Code: 1211

DIPLOMA IN CRITICAL CARE TECHNOLOGY

SECOND YEAR

PAPER I – APPLIED ANATOMY AND PHYSIOLOGY

Q.P. Code : 841211

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. Describe the situation, external features and chambers of heart in detail with suitable diagram.
2. Explain in detail the cerebro spinal fluid (CSF) under following headings:
a) Formation b) Constituents c) Circulation d) Functions e) Applied anatomy
3. Explain in detail the chemical regulation of respiration.
Add a note on other regulation of respiration.

II. Write notes on:

(10 x 5 = 50)

1. Circle of willis.
2. Histology of cardiac muscle.
3. Mediastinal surface of left lung.
4. Internal features of spinal cord.
5. Difference between artery and vein.
6. Basal ganglia.
7. Parietal pleura.
8. Oxygen dissociation curve.
9. Decompression sickness.
10. Neuron.

III. Short Answers on:

(10 x 2 = 20)

1. Name the ventricles of brain with its location.
2. Give the importance of lumbar puncture.
3. Define Tidal volume.
4. Right and left common carotid artery is a branch of.
5. Give the types of periodic breathing.
6. Name the parts of corpus callosum.
7. Give any two functions of respiratory tree.
8. Name the nucleus of cerebellum.
9. Write the cause for parkinsonism with any two clinical features.
10. Brief note on vocal cord.

DIPLOMA IN CRITICAL CARE TECHNOLOGY

SECOND YEAR

PAPER I – APPLIED ANATOMY AND PHYSIOLOGY

Q.P. Code : 841211

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. Explain in detail the borders, surfaces, lobes, fissures and bronchopulmonary segments of Right lung with suitable diagram.
2. What is cardiac cycle? Describe in detail.
3. Explain in detail the Anatomy of Spinal cord under following headings with suitable diagram.
 - a) Extent and measurement
 - b) Coverings
 - c) External features
 - d) Blood supply
 - e) Applied anatomy.

II. Write Notes on:

(10 x 5 = 50)

1. Hypoxia.
2. Functions of cerebellum.
3. Name the ascending and descending tracts of spinal cord.
4. Surfactant.
5. Meninges of brain.
6. Spirometry.
7. Acid – base balance.
8. Venous drainage of heart.
9. Give the nerve supply of tongue.
10. Events taking place at sternal angle.

III. Short Answers on:

(10 x 2 = 20)

1. Name the muscles of respiration.
2. Give the significance of Pulmonary function test (PFT).
3. Name the lobes of cerebrum. Visual area belongs to which lobe.
4. What is cyanosis?
5. Which ribs are called to be typical ribs?
6. Give the formation of superior venacava.
7. Functions of cerebro spinal fluid (CSF).
8. Brief note on semilunar valves of heart.
9. Define vital capacity.
10. Name the artery carrying deoxygenated blood and vein carrying oxygenated blood ?

[LJ 0816]

AUGUST 2016

Sub. Code : 1211

DIPLOMA IN CRITICAL CARE TECHNOLOGY

SECOND YEAR

PAPER I – APPLIED ANATOMY AND PHYSIOLOGY

Q.P. Code : 841211

Time : Three hours

Maximum: 100 Marks

Answer **ALL** questions.

I. Elaborate on:

(3 x 10 = 30)

1. Write in detail about the blood supply of heart with suitable diagrams.
2. Describe Larynx under the following headings.
(a) Extent (b) Cartilages (c) Parts (d) Nerve supply.
3. Define Blood Pressure. Mention the factors that help in its regulation.

II. Write notes on:

(10 x 5 = 50)

1. Pain pathway.
2. Pleura and pleural recesses.
3. Right and left ventricle.
4. Pulmonary Function Test.
5. Clotting cascade.
6. Origin and conduction of electrical impulses in heart.
7. Principle muscles of respiration.
8. Circle of Willis.
9. Lung volumes and capacities.
10. Erythropoiesis.

III. Short answers on:

(10 x 2 = 20)

1. Give the normal values of haemoglobin in adult and new born.
2. Name any four cranial nerves.
3. Name any two hazards of mismatched blood transfusion.
4. Name the valves of the heart.
5. Define alkalosis.
6. Which is the pacemaker of heart? Where is it located?
7. Mention the boundaries of transverse sinus of heart.
8. What is prothrombin time?
9. Name the parts of brainstem.
10. Name the hormones secreted by pituitary gland.

[LK 0217]

FEBRUARY 2017

Sub. Code: 1211

**DIPLOMA IN CRITICAL CARE TECHNOLOGY
SECOND YEAR**

PAPER I – APPLIED ANATOMY AND PHYSIOLOGY

Q.P. Code : 841211

Time : Three Hours

Maximum : 100 Marks

Answer All questions.

I. Elaborate on:

(3 x 10 = 30)

1. Describe Heart under the following headings.
a) Pericardium b) External features c) Blood supply.
2. Enumerate the gross anatomy of lungs in detail.
3. Explain the factors regulating acid base balance.

II. Write notes on:

(10 x 5 = 50)

1. Electrocardiogram.
2. Diaphragm.
3. Factors regulating blood pressure.
4. Sulci and gyri of cerebrum.
5. Ventilation - perfusion ratio.
6. Central venous pressure monitoring.
7. Muscles of Pharynx.
8. Enumerate the indication of cannulation, cannulation sites and possible complications of it.
9. ABO blood grouping.
10. Trachea.

III. Short answers on:

(10 x 2 = 20)

1. What is apical impulse?
2. Name the broncho pulmonary segments.
3. Name the functions of Anti- diuretic hormone.
4. What are the branches of arch of Aorta?
5. What is surfactant?
6. Name the tributaries of superior vena cava.
7. Name the openings of diaphragm?
8. Name the endocrine glands.
9. Define Basal Metabolic Rate.
10. Name the bones forming the thoracic cage.

[LL 0817]

AUGUST 2017

Sub. Code: 1211

**DIPLOMA IN CRITICAL CARE TECHNOLOGY
SECOND YEAR**

PAPER I – APPLIED ANATOMY AND PHYSIOLOGY

Q.P. Code : 841211

Time : Three Hours

Maximum : 100 Marks

Answer All questions.

I. Elaborate on:

(3 x 10 = 30)

1. Explain the lung under the following headings:
i) External features ii) Lobes and Fissures iii) Relations
iv) Applied Anatomy.
2. Describe the blood supply of heart in detail. Add a note on Angina pectoris.
3. Define Cardiac output. Discuss in detail the factors regulating Cardiac output. Name the methods of measurement of Cardiac output.

II. Write notes on:

(10 x 5 = 50)

1. Pain pathway.
2. Thoracic vertebra.
3. Vocal cord.
4. Autonomic nervous system.
5. Oxygen dissociation curve.
6. Pulmonary Function test.
7. Heart Sounds.
8. Conducting system of Heart.
9. Acid base balance.
10. Sedation.

III. Short answers on:

(10 x 2 = 20)

1. Transverse pericardial sinus.
2. Diagram of transverse section of the spinal cord.
3. Anatomy of capillaries.
4. External intercostal muscles.
5. Cerebro spinal fluid.
6. Cyanosis.
7. Type – II Respiratory failure.
8. Mean arterial pressure.
9. Functional residual capacity.
10. After load.

[LM 0218]

FEBRUARY 2018

Sub. Code: 1211

**DIPLOMA IN CRITICAL CARE TECHNOLOGY
SECOND YEAR**

PAPER I – APPLIED ANATOMY AND PHYSIOLOGY

Q.P. Code : 841211

Time : Three Hours

Maximum : 100 Marks

Answer All questions.

I. Elaborate on:

(3 x 10 = 30)

1. Describe the larynx under the following headings:
i) Extent ii) Cartilages iii) Muscles iv) Vocal cord
v) Applied Anatomy
2. Describe in detail the mechanism of transport of O₂ in the blood.
3. Define Blood pressure. Explain how blood pressure is regulated? Add a note on Hypertension.

II. Write notes on:

(10 x 5 = 50)

1. Intercostal muscles.
2. Mediastinal surface of Right and Left lung.
3. Pleural recess.
4. Bronchopulmonary segments.
5. Transverse pericardial sinus.
6. Circle of Willis.
7. Draw a diagram of lead-II ECG and Explain.
8. Phases of Cardiac Cycle.
9. Arterial Cannulation.
10. Types of Respiratory failure.

III. Short answers on:

(10 x 2 = 20)

1. Lateral wall of nose.
2. Typical rib.
3. Define the normal Anatomical position.
4. Typical intercostals nerve.
5. Costodiaphragmatic recess.
6. Special features of Coronary circulation.
7. Muscle of Inspiration.
8. Surfactant.
9. Frank Starling Law.
10. Define Residual Volume.

DIPLOMA IN CRITICAL CARE TECHNOLOGY
SECOND YEAR
PAPER I – APPLIED ANATOMY AND PHYSIOLOGY

Q.P. Code : 841211

Time : Three Hours

Maximum : 100 Marks

Answer All questions.

I. Elaborate on:

(3 x 10 = 30)

1. Discuss in detail about the coverings and external features of Heart.
2. Describe briefly how Oxygen is transported in the Blood with appropriate Diagram? Add a note on oxygen toxicity.
3. Discuss in detail about the location, external features, relations, blood supply and nerve supply of Lung. Add a note on its applied aspect.

II. Write notes on:

(10 x 5 = 50)

1. Multipolar neuron.
2. Features and types of Joints with examples.
3. Central Venous Pressure monitoring.
4. Types of Hypoxia and its features.
5. Cartilages of Larynx.
6. Electrocardiogram – Principles and draw the waves.
7. Major buffer systems in the Kidney.
8. Coronary circulation.
9. Draw a neat labeled diagram of Upper Respiratory Tract.
10. Ventilation Perfusion ratio.

III. Short answers on:

(10 x 2 = 20)

1. Normal anatomical position.
2. Respiratory Acidosis.
3. What are the three basic types of Muscle?
4. Mention any two factors affecting Diffusion Capacity.
5. Enumerate the structures forming the Waldeyer's ring.
6. What is Preload?
7. Enumerate the Intercostal muscles of Thorax.
8. Forced Vital Capacity.
9. Enumerate the layers of Meninges.
10. Respiratory Acidosis.

DIPLOMA IN CRITICAL CARE TECHNOLOGY
SECOND YEAR
PAPER I – APPLIED ANATOMY AND PHYSIOLOGY

Q.P. Code: 841211

Time : Three Hours

Maximum : 100 Marks

Answer All questions.

I. Elaborate on:

(3 x 10 = 30)

1. Discuss in detail about the Chambers and Valves of the Heart. Add a note on its applied aspect.
2. Discuss in detail about the Neural regulation of Respiration and factors affecting it with appropriate diagram.
3. Draw a neat labeled diagram of Brain and discuss in detail about the Cerebral blood flow.

II. Write notes on:

(10 x 5 = 50)

1. Palatine tonsil.
2. Joints of thorax.
3. Give an account of Homeostatic regulation.
4. Muscles of Larynx.
5. Write briefly about Carbondioxide transport in blood.
6. Jugular Venous Pressure.
7. Pericardium and Sinuses of pericardium.
8. Renal regulation of Acid Base balance.
9. Bronchopulmonary segments.
10. Conducting system of Heart.

III. Short answers on:

(10 x 2 = 20)

1. What are the three basic types of Cartilage?
2. What is Afterload?
3. Enumerate the hilar structures of the Right Lung.
4. What is Functional Residual Capacity?
5. Enumerate the coverings of the Heart.
6. Peripheral Chemoreceptors with diagram.
7. Enumerate the parts of a long bone.
8. Enumerate the Paranasal sinuses draining into the lateral wall of Nose.
9. Define Cardiac Output and give its normal value.
10. Draw a neat labelled diagram of Medullary and Pontine Respiratory Centres.

**DIPLOMA IN CRITICAL CARE TECHNOLOGY
SECOND YEAR**

PAPER I – APPLIED ANATOMY AND PHYSIOLOGY

Q.P. Code : 841211

Time : Three Hours

Maximum : 100 Marks

Answer All questions.

I. Elaborate on:

(3 x 10 = 30)

1. Define Cardiac cycle, explain the various stages of cardiac cycle.
2. Draw and label the diagram of Respiratory system and describe the Mechanism of Respiration.
3. Define Blood pressure. Explain the factors regulating blood pressure.

II. Write notes on:

(10 x 5 = 50)

1. Pain pathway.
2. Lung volumes and capacity.
3. Acid base balance.
4. Circle of Willis.
5. Chambers of the Heart.
6. Diaphragm.
7. ABO blood grouping.
8. Bronchopulmonary segments.
9. Electrocardiogram.
10. Erythropoiesis.

III. Short answers on:

(10 x 2 = 20)

1. Define Alkalosis.
2. Name the parts of brain stem.
3. Name the layers of the blood vessel.
4. Hypoxia.
5. Valves of the Heart.
6. Cough reflex.
7. Hemothorax.
8. Lobes of the liver.
9. Name the bones forming thoracic cage.
10. Pacemaker of the heart.

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

[LR 1211]

**DECEMBER 2020
(AUGUST 2020 EXAM SESSION)**

Sub. Code: 1211

**DIPLOMA IN CRITICAL CARE TECHNOLOGY
SECOND YEAR – (Regulation from 2010 -2011)
PAPER I – APPLIED ANATOMY, PHYSIOLOGY
Q.P. Code: 841211**

Time : Three Hours

Maximum : 100 Marks

Answer All questions.

I. Elaborate on:

(3 x 10 = 30)

1. Explain about circle of Willis with suitable diagrams.
2. Explain in detail about the borders, surfaces, lobes, fissures and bronchopulmonary segments of left Lung with suitable diagram.
3. Explain in detail the Cerebro Spinal Fluid (CSF) under following headings:
a) Formation b) Circulation c) Functions d) Applied anatomy.

II. Write notes on:

(10 x 5 = 50)

1. Conducting system of the Heart.
2. Diaphragm.
3. Hypoxia.
4. Pulmonary function test.
5. Cranial nerves.
6. Difference between Artery and Vein.
7. Write the causes, clinical features and management of Hypertension?
8. Pain pathway.
9. Work of Breathing.
10. Brain Death.

III. Short answers on:

(10 x 2 = 20)

1. Name the Valves of the Heart.
2. Name the parts of the Brain Stem.
3. Nerve supply of the Tongue.
4. Pituitary hormone.
5. Types of basic tissue.
6. Intercostal muscles.
7. Mitochondria.
8. Epistaxis.
9. Openings of the Diaphragm.
10. Branches of arch of Aorta.

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

[AHS 0122]

JANUARY 2022

Sub. Code: 1211

(FEBRUARY 2021 & AUGUST 2021 EXAM SESSION)

**DIPLOMA IN CRITICAL CARE TECHNOLOGY
SECOND YEAR – (Regulation from 2010 -2011)
PAPER I – APPLIED ANATOMY, PHYSIOLOGY
Q.P. Code: 841211**

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on: (3 x 10 = 30)

1. Describe Heart under the following headings.
a) Pericardium b) Chambers & Valves c) Blood supply.
2. Define Shock. What are the types of shock and write a note on management of shock.
3. Explain in detail about different types of Lung Volumes and Capacity with their reference value.

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

1. Neuron
2. Surfactant.
3. Meninges.
4. Functions of Blood.
5. Pleura.
6. Respiratory muscles.
7. Arrhythmia.
8. Draw and explain the normal ECG.
9. Blood brain barrier.
10. Bronchopulmonary segment.

III. Short answers on: (10 x 2 = 20)

1. Functions of Cerebellum.
2. Normal blood pressure.
3. Cyanosis.
4. Name any two example for Flat bone.
5. Hydrothorax.
6. Name the Paranasal air sinus.
7. Biceps brachii muscle.
8. Define Cell.
9. Function of Blood.
10. Colles Fracture.

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

[AHS 0922]

SEPTEMBER 2022

Sub. Code: 1211

(FEBRUARY 2022 & AUGUST 2022 EXAM SESSIONS)

**DIPLOMA IN CRITICAL CARE TECHNOLOGY
SECOND YEAR – (Regulation from 2010 -2011)
PAPER I – APPLIED ANATOMY, PHYSIOLOGY
Q.P. Code: 841211**

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on: (3 x 10 = 30)

1. Describe the external features of the Lungs. Explain the Mechanism of Respiration.
2. Define Blood Pressure. Describe about the maintenance of normal BP and the factors affecting it.
3. Describe the parts of Central Nervous System. Add a note on cerebral blood flow.

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

1. Pericardium.
2. Pleura.
3. Pain Pathway.
4. Angina pectoris.
5. Pulmonary Function Test.
6. Arterial Blood Gas.
7. Factors that affect Central Venous Pressure monitoring.
8. Valves of the Heart.
9. Blood supply of the Heart.
10. Types of Respiratory failure.

III. Short answers on: (10 x 2 = 20)

1. Nerve supply of the Tongue.
2. Major Openings of Diaphragm.
3. Blood Supply of Lungs.
4. Floating Ribs.
5. Abnormalities of oxygen transport.
6. Cardiac Output.
7. Sites of arterial cannulation.
8. Normal Electrocardiogram.
9. Normal Anatomical Position.
10. Difference between an Artery and Vein.
