Question Paper

Exam Date & Time: 20-May-2024 (10:00 AM - 12:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

SECOND SEMESTER B.Sc. (RT/ MIT/EMT/BPT/CVT/RRT & DT/BOT/AOTT/ PHYSICIAN ASSISTANT/BPO) DEGREE EXAMINATION - MAY/JUNE 2024
SUBJECT: ANA1201/ ANA1205 - ANATOMY - II
(2020/2022 SCHEME)

Marks: 50 **Duration: 120 mins.**

Answer all the questions.

1)	Describe the arches of foot and mention their applied anatomy (8+2 = 10 marks)	(10)
2)	Describe the median nerve under following headings A) Origin B) Root value C) Course D) Distribution E) Applied anatomy (1+1+2+5+1 = 10 marks)	(10)
3A)	Popliteal fossa	(5)
3B)	Deltoid muscle	(5)
3C)	Sciatic nerve	(5)
3D)	Elbow joint	(5)
4A)	Brachial artery	(2)
4B)	Femur	(2)
4C)	Buccinator muscle	(2)
4D)	Median cubital vein	(2)
4E)	Femoral sheath	(2)

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Question Paper

Exam Date & Time: 24-May-2024 (10:00 AM - 12:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

SECOND SEMESTER B.Sc. (NMT/RT/ MIT/EMT/BPT/BOPT/CVT/CND/RRT & DT/BOT/AOTT/ PHYSICIAN ASSISTANT/PFT/MLT) DEGREE EXAMINATION - MAY/JUNE 2024
SUBJECT: BIC1201 - BIOCHEMISTRY
(2020/2022 SCHEME)

Marks: 50 **Duration: 120 mins.**

Answer all the questions.

1)	Define gluconeogenesis and write the reactions of gluconeogenesis from pyruvate	(10)
2)	Explain with illustrations the biosynthesis of mature collagen, emphasizing the reactions catalyzed by prolyl hydroxylase, lysyl hydroxylase, and lysyl oxidase.	(10)
3A)	Illustrate the classification of lipoproteins based on their ultracentrifugation properties. Mention the site of synthesis and function for any THREE lipoproteins.	(5)
3B)	Describe in detail the activation of fatty acid and the steps of beta oxidation in mitochondria.	(5)
3C)	Mention the RDA for dietary fibres. Explain FOUR benefits of consuming dietary fibres	(5)
3D)	Mention the RDA, sources and chemical forms of vitamin A. List FOUR features of vitamin A deficiency	(5)
4A)	Mention the normal blood levels of fasting glucose, urea, cholesterol and total bilirubin.	(2)
4B)	Write the normal level of albumin in serum and mention any TWO conditions in which its levels are altered.	(2)
4C)	List FOUR differences between DNA and RNA	(2)
4D)	Write the reaction catalysed by pyruvate dehydrogenase complex indicating the coenzymes required.	(2)
4E)	Define metabolic alkalosis. Mention TWO causes for it.	(2)

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Question Paper

Exam Date & Time: 22-May-2024 (10:00 AM - 12:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

SECOND SEMESTER B.Sc. (NMT/RTT MIT/EMT/BPT/BOPT/CVT/RRT & DT/BOT/AOTT/ PHYSICIAN ASSISTANT/BPO/PFT/MLT/RESPIRATORY THERAPY) DEGREE EXAMINATION - MAY/JUNE 2024
SUBJECT: PHY1201 - PHYSIOLOGY - II
(2020/2022 SCHEME)

Marks: 50 **Duration: 120 mins.**

Answer all the questions.

Write brief, clear and legible answers.
Illustrate your answers with diagrams and flow charts wherever appropriate.

1)	Name the functional divisions of cerebellum. Enumerate the functions of each lobe of cerebellum. Add a note on clinical features of cerebellar lesion. (2+5+3 = 10 marks)	(10)
2)	Describe the actions of growth hormone. Explain the regulation of secretion of growth hormone. Add a note on the cause and clinical features of gigantism (4+3+3 = 10 marks)	(10)
3A)	Enumerate any FOUR functions of saliva. Add a note on Xerostomia (4+1 = 5 marks)	(5)
3B)	Describe the renal tubular reabsorption of glucose.	(5)
3C)	Draw a labeled diagram of the lateral spinothalamic pathway and mention any two sensations carried by the same.	(5)
3D)	Describe the uterine endometrial changes during menstrual cycle	(5)
4A)	List any TWO clinical features of Parkinson's disease	(2)
4B)	List any TWO properties of receptors	(2)
4C)	Enumerate any TWO functions of gall bladder	(2)
4D)	Define Renal clearance. Mention the substance used for the estimation of GFR	(2)
4E)	List the indicators of ovulation	(2)

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Question Paper

Exam Date & Time: 27-May-2024 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

SECOND SEMESTER B. Sc. RT/ANAESTHESIA TECHNOLOGY DEGREE EXAMINATION - MAY/JUNE 2024
SUBJECT: RES1201 - CLINICAL EXAMINATION IN RESPIRATORY CARE
(2020 SCHEME)

Marks: 100 **Duration: 180 mins.**

Answer all the questions.

1)	Explain the techniques for structuring a patient interview. Add a note on types of questions and statements used to facilitate conversational interviewing and how to obtain alternative source of patient history (10+5+5 = 20 marks)	(20)
2)	What are the THREE zones of space commonly associated with the bedside patient encounter. List any FIVE major factors affecting communication between the patient and clinician (15+5 = 20 marks)	(20)
3)	List any SIX Cardiopulmonary symptoms. Add a note on Cough (6+4 = 10 marks)	(10)
4)	Explain in brief about the procedure for obtaining an arterial blood sampling	(10)
5A)	Define any FIVE lung volumes and capacities	(5)
5B)	Explain APGAR score.	(5)
5C)	List any FIVE abnormal Breathing pattern	(5)
5D)	Write a note on Henderson-Hasselbach equation.	(5)
5E)	List any FIVE respiratory equipment commonly used to assess and treat patients at home	(5)
5F)	List the general reasons why documentation is important	(5)
6A)	Define Cardiac Output and Ejection fraction	(2)
6B)	Define Leucocytosis and Neutropenia	(2)
6C)	Define Pulsus paradoxus and Pulsus alternans	(2)
6D)	Mention four components of physical examination	(2)
6E)	List the chest x ray features of COPD	(2)

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Question Paper

Exam Date & Time: 29-May-2024 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

SECOND SEMESTER B.Sc. RT/ANAESTHESIA AND OPERATION THEATRETECHNOLOGY DEGREE EXAMINATION - MAY/JUNE 2024
SUBJECT: RES1202 - RESPIRATORY CARE EQUIPMENT
(2020 SCHEME)

Marks: 100 **Duration: 180 mins.**

Answer all the questions.

1)	Define aerosol. Explain the physical characteristic of an aerosol. List the indications of aerosol therapy. With a neat, labelled diagram, explain small volume nebulizer and add a note of the optimum technique for administering aerosol through the same. (1+4+2+5+8 = 20 marks)	(20)
2)	Explain normal ECG with a labelled diagram. Explain the correct placement of electrodes for 12 limb lead ECG. Explain the principles of operations of one invasive and one non-invasive devices used to record the blood pressure. (6+4+5+5 = 20 marks)	(20)
3)	List the various artificial airway devices used in respiratory care. With the help of a neat, labelled diagram explain any one blind insertion airway device. (3+7 = 10 marks)	(10)
4)	Explain the mechanical insufflations and exsufflation devices which enhance airway secretions with respiratory muscle weakness or paralysis.	(10)
5A)	List the indications, contraindications and hazards associated with humidity therapy. (2+2+1 = 5 marks)	(5)
5B)	Explain the physiological effects of sleep on cardiopulmonary function.	(5)
5C)	Explain the precautions to be taken and troubleshooting for the CPAP devices.	(5)
5D)	Explain the process of pasteurization and its application in disinfection of respiratory care equipment.	(5)
5E)	Explain the components of High Flow nasal cannula systems in the treatment of hypoxemia.	(5)
5F)	Explain the modified Allen's Test.	(5)
6A)	List the Indications for the use of non-invasive ventilators.	(2)
6B)	List the complications during the transport of a critically ill patient.	(2)
6C)	List the colour codes used to identify medical gas cylinders.	(2)
6D)	Define pressure control and volume control ventilation.	(2)
6E)	Define the term High level disinfection.	(2)

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Question Paper

Exam Date & Time: 31-May-2024 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

SECOND SEMESTER B.Sc. RESPIRATORY THERAPY DEGREE EXAMINATION - MAY/JUNE 2024
SUBJECT: RES1223 - PULMONARY DIAGNOSTICS - I
(2020 SCHEME)

Marks: 100 **Duration: 180 mins.**

Answer all the questions.

1)	Write a note on conduction system of the heart. Explain the classification and conventional lead positions of standard 12-lead ECG. Add a note on how to calculate heart rate. (5+10+5 = 20 marks)	(20)
2)	Explain in detail the stepwise interpretation of arterial blood gas analysis. List the indications for arterial blood gas analysis and situations in which pulse oximetry can be used to evaluate a patient's oxygenation. (10+5+5 = 20 marks)	(20)
3)	Write a note on modified Allen test. Mention the normal range for the following: a) pH b) PaCO2 c) HCO3 d) PaO2 (6+4 = 10 marks)	(10)
4)	Explain any two methods of performing bronchial challenge test.	(10)
5A)	Write a note on Alveolar air equation.	(5)
5B)	Explain in detail about single breath diffusing capacity of the lungs for carbon monoxide (DLCO) test.	(5)
5C)	Write a note on Respiratory Acidosis.	(5)
5D)	Write a note on helium dilution technique.	(5)
5E)	Write a note on Henderson-Hasselbalch equation.	(5)
5F)	Define any FIVE lung volume or capacities.	(5)
6A)	List any TWO volume displacement spirometers.	(2)
6B)	Define Minute ventilation.	(2)
6C)	List any TWO cardiac arrhythmias.	(2)
6D)	List any TWO factors responsible for the right shift of oxygen dissociation curve.	(2)
6E)	Enlist any TWO indications for terminating a cardiopulmonary stress test.	(2)

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