

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN MEDICAL LABORATORY TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER I (ANATOMY & PHYSIOLOGY)

Q.1 Fill up the blanks :- **[1x10=10]**

- a) _____ is a colored part of eye.
- b) Epidermis and _____ are layers of skin.
- c) Ptyalin is present in _____.
- d) Normal heart rate is _____.
- e) Night blindness is caused by deficiency of _____.
- f) Para hormone is secreted by _____.
- g) Nerve cells form _____ matter of C.N.S.
- h) Male egg cells are produced by _____.
- i) Larynx is also known as _____.
- j) Sensory nerve responsible for hearing is _____.

Q2. Say True or False :- **[1x5=5]**

- a) In anatomical position eyes should be closed.
- b) Diaphragm is a circular muscle.
- c) Platelets are required for clotting of blood.
- d) Scapula is a short bone.
- e) Pancreas is a mixed gland.

Q3. Shorts notes on [any Six] :- **[7x6=42]**

- | | |
|-------------------------|----------------------|
| a] WBC | b] Epithelial Tissue |
| c] Blood indices | d] Cerebrum |
| e] Systemic circulation | f] Thyroid gland |
| g] Clotting factors | |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Urine formation
- b] Salivary & Gastric secretion
- c] Mechanism of coagulation of blood

Q5. Attempt any one in detail with appropriate diagram **[18]**

- a] Write in detail the conduction pathway of heart alongwith pulmonary circulation.
OR
- b] Write in detail about structure , function & deficiency of RBC
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PAPER II (MICROBIOLOGY)

- Q1. Fill up the blanks:-** **[1x10=10]**
- a) In cold Zn stain method-decolorizing agent used is _____.
 - b) Solidifying agent used in solid culture media is _____.
 - c) Gram-negative bacilli are generally cultured on _____.
 - d) Motility of bacteria is through _____.
 - e) The optimum temperature _____ and optimum pH for the growth of bacteria is _____.
 - f) In Albert's stain mordant used is _____.
 - g) Clostridium tetani has a _____ appearance
 - h) Glass material are sterilized by _____
 - i) _____ is used for the cultivation of bacteria.
 - j) Tubercle bacilli stains as _____ column in Zn staining.
- Q2. Say TRUE or FALSE:-** **[1x5=5]**
- a) Centrifuges are working on the principle of sedimentation.
 - b) Refraction index of glass is 1.52.
 - c) Streptococci are arranged in chains.
 - d) Pneumococci is non capsulated bacteria
 - e) T.B. is a viral disease.
- Q3. Short notes on [any Six] :-** **[7x6=42]**
- a] Widal qualitative test
 - b] General properties of virus
 - c] Capsule Staining
 - d] Staphylococci culture, morphology biochemical test
 - e] Incubator
 - f] Albert's staining
 - g] Bacterial Growth Curve
- Q4. Explain [any Two] :-** **[12.5x2=25]**
- a) Properties of Antibody and types
 - b) ABST
 - c) Aerobic culture method
- Q5. Attempt any one in detail with appropriate diagram** **[18]**
- a] Write in detail about physical and chemical sterilization techniques
- OR
- b] Write in detail life cycle of Roundworm and clinical significances and laboratory diagnosis
- *****

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PAPER III (BIOCHEMISTRY)

Q.1 Fill in the blanks: - [1x10=10]

- a) Helical chain of amino acid is found in _____ structure of protein.
- b) Three amino acid glycine, Arginine and methionine are involved in the synthesis of _____
- c) Increases in serum creatinine are often found in _____ diseases.
- d) _____ element is required in Hb synthesis.
- e) Lactose= _____ + _____.
- f) Enzyme was discovered by _____.
- g) _____ are triglyceride rich lipoprotein.
- h) The base present in DNA is _____.
- i) _____ is common metabolic disorder also known as garrod's diseases.
- j) All steroids having common basic ring structure known as _____.

Q.2 Say True Or False: - [1x5=5]

- a) The slowest enzyme is Lysozyme.
- b) The bond formed between two nucleotide is phosphoester bond
- c) DNA is single stranded
- d) The most important cause of ketosis is diabetes mellitus.
- e) Simplest amino acid is Arginine.

Q.3 Write the short notes on (Any Seven): - [5x7=35]

- a) Trinder's method (Blood Sugar estimation)
- b) Kidney tray
- c) Heat coagulation Test (Determination of protein immune)
- d) Rothera Test (for Ketone bodies)
- e) Co-Enzymes
- f) Alkaptonuria
- g) Correction of dehydration
- h) Transamination

Q.4 Explain (Any Three) [3x10=30]

- a) Define the pathway of glycolysis or kreb's cycle.
- b) What is electrolytes? Define Na-K pump with hypotonic contraction
- c) Estimation of serum protein and give A/G ratio.
- d) Estimation of serum cholesterol clinical significance and procedure.

Q.5 a) Write in detail on the estimation of Alkaline phosphate and serum electrolyte with clinical significance.

Or

- b) Write in detail on estimation of bile salt, bile pigment, 24 hrs urine protein and Benzan protein with clinical significance.

[1x20=20]

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PAPER IV (HAEMATOLOGY)

- Q.1 Fill up the blanks :-** **[1x10=10]**
- a) Average diameter of a normal RBC is _____.
 - b) Full name of EDTA is _____, _____, _____, and _____.
 - c) Turks fluid is used for _____ count.
 - d) Increase in the number of white blood cell is called _____.
 - e) HbS is present in _____ disease
 - f) Anticoagulant used in westergen method is _____
 - g) Platelets are formed firm pseudopodia of _____
 - h) Major site for formation of blood in adults is _____.
 - i) Normal value of PCV is an adult male is _____.
 - j) Reticulocyte is a _____ RBC.
- Q2. Say True or False :-** **[1x5=5]**
- a) Anticoagulant used for blood transfusion is ACD.
 - b) Blood group O is a universal donor.
 - c) Haemoglobin is present in fluid part of blood
 - d) PCV can be done with wintrobe tube.
 - e) Plasma is obtained from clotted blood.
- Q3. Shorts notes on [any Six] :-** **[7x6=42]**
- a) Collection of blood
 - b) Red cell indices
 - c) Anticoagulants
 - d) Bleeding time
 - e) Thallasemia
 - f) Neubauer chamber
 - g) Preparation & staining of a film
 - h) Semen Analysis
- Q4. Explain [any Two] :-** **[12.5x2=25]**
- a) Wintrobe tube & Westergen tube
 - b) Plasma & Serum
 - c) RBC pipette & WBC pipette
 - d) Granulocytes & Agranulocytes
- Q5. Attempt any one in detail with appropriate diagram** **[18]**
- a] Define Anemia. Give morphological & Etiological classification of Anemia. Mention various Lab, Test for diagnosis of type of anemia.
- OR
- b] Describe Human blood group system of clinical importance in detail. Mention various tests to determine blood groups & explain cross matching
- *****

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PAPER V (HISTOTECHNOLOGY)

Q.1 Fill up the blanks :- **[1x10=10]**

- a) Histopathology is the study of _____ tissue
- b) Removal of water from tissue is called _____.
- c) Fixative used for electron microscopy is _____.
- d) Fat stain must be mounted is _____ jelly.
- e) Mechanical devices used to cut thin sections are called _____.
- f) Full name of DPX is _____, _____, and _____.
- g) H & E stands for _____ & _____
- h) A cell is composed of _____ & _____.
- i) Deparafinisation is removal of _____ from tissue section.
- j) Strop is made up of _____.

Q2. Say True or False :- **[1x5=5]**

- a) Zenker's fluid is a simple Fixative.
- b) Post mortem is also called autopsy.
- c) Xylene is used as a fixative.
- d) Hones are made up of leather.
- e) Alum acts as a mordent.

Q3. Shorts notes on [any Six] :- **[7x6=42]**

- | | |
|---------------------|----------------------|
| a) Decalcification | b) Museum Techniques |
| c) Gram's Staining | d) Mounting Media |
| e) FNAC | f) L- Moulds |
| g) Tissue Cassettes | h) Mordent |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a) Various types of Microtomes
- b) Special stains used in Histopathology
- c) Frozen section
- d) Sharpening of microtome knife

Q5. Attempt any one in detail **[18]**

- a) What is exfoliative cytology? Describe in detail preparation of smears & Papanicolaon staining.

OR

- b) Describe in detail various steps of tissue processing & most common used stain

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PAPER VI (LABORATORY MANAGEMENT)

Q.1. Fill up the blanks :- (1x10=10)

- a) Optical density of a solution is _____ proportional to the concentration of a solution.
- b) Bactericidal means _____.
- c) Substance produced by body in response to an infection is called _____.
- d) For cholesterol estimation blood is collected in _____ vial.
- e) Needles of disposable syringes are destroyed by _____.
- f) pH 7 indicates _____.
- g) _____ Dish is used in the aerobic culture of microbes.
- h) Meningeal disorders can be diagnosed by analyzing _____ specimen.
- i) Chromic acid solution is used for _____.
- j) Expanded form of AFB is _____.

Q.2. Say True or False :- (1x5=5)

- a) Sodium citrate is a anticoagulant.
- b) New sodalime glassware should always be used with 3% HCL before use.
- c) Testing procedures should be followed by company manual.
- d) Left over specimen of blood is thrown in waste paper dustbin.
- e) In case of electrical fire throw water at site of fire.

Q.3. Short notes on [any Six] :- (7x6=42)

- a) Centrifuge
- b) Hot air oven
- c) CSF analysis
- d) Accidents by acids and alkalies. Their management
- e) Qualitative and quantitative report system
- f) National health programmes
- g) Incubator

Q.4. Explain [any TWO] :- (12.5x2=25)

- a) Different types of glassware used in Lab.
- b) Usage of anticoagulants in Lab.
- c) Definition of quality. Explain internal quality control programme.

Q.5. Attempt any one in detail with appropriate diagram [18]

- a) Write down duties & responsibilities of a Lab Worker
OR
- b) What is Sterilization? Describe principle, usage working and after care of autoclave.

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PAPER I (ANATOMY & PHYSIOLOGY)

Q.1 Fill up the blanks :- **[1x10=10]**

- a] Second heart sound is due to closure of _____ valve.
- b] Red blood cells are formed _____ in adult.
- c] Functional unit of kidney is called _____.
- d] Diabetis insipidus is due to deficiency of _____ hormone.
- e] Thyroid gland secretes _____ & _____ hormone.
- f] Normal total leucocyte count in adult male is _____.
- g] Largest cell organell is _____.
- h] Largest artery in human body is called _____.
- i] Deficiency of thyroid hormone leads to _____ disease in child.
- j] Power house of a cell is _____.

Q2. Say True or False :- **[1x5=5]**

- a] There are 206 bones in an adult.
- b] Total 30 % of water is present in our body.
- c] Plasma is a extra cellular fluid.
- d] ADH is secreted form posterior pituitary gland.
- e] Normal cardiac output depends upon the stroke volume and heart rate.

Q3. Shorts notes on [any Six] :- **[7x6=42]**

- | | |
|----------------------|--------------------|
| a] Tissue | b] Clotting factor |
| c] Meninges of brain | d] Stomach |
| e] Adrenal gland | f] Liver |
| g] Lungs | |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Various secretions & functions of pancreas
- b] Female reproductive system
- c] Function of kidney

Q5. Attempt any one in detail with appropriate diagram **(18)**

- a] Write in deatil about hormone secreted form pitiutary gland and their function.
OR
- b] Write in deteil about various enzymes secreted from Gastro intestinal tract and their function.
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PAPER II (MICROBIOLOGY)

- Q.1 Fill up the blanks :-** **[1x10=10]**
- a) ASO stands for _____
 - b) Example of Pork tape worm is _____
 - c) Black water fever is caused by _____
 - d) RPR stands for _____
 - e) Lugol's iodine stands for _____
 - f) Widal test is used for the diagnosis of _____
 - g) Rheumatoid arthritis is a _____ disease.
 - h) Syphilis is caused by _____
 - i) ELISA stands for _____
 - j) Macrophage is a big _____ cell.
- Q2. Say True or False :-** **[1x5=5]**
- a) Hook worm infection causes anemia
 - b) RA test is used for the diagnosis of Syphilis.
 - c) AIDS is not a viral disease.
 - d) VDRL is done for diagnosis of paratyphoid disease.
 - e) Ascaris is a round worm.
- Q3. Shorts notes on [any Six] :-** **[7x6=42]**
- a) Flotation techniques
 - b) Types of Adaptive Immunity
 - c) Clinical diagnosis of hook worm infection
 - d) CRP test
 - e) RA test
 - f) Types of Flat worms
 - g) HIV
- Q4. Explain [any Two] :-** **[12.5x2=25]**
- a) Types of antibody
 - b) Write about the infection and life cycle of Pinworm.
 - c) VDRL qualitative test
- Q5. Attempt any one in detail with appropriate diagram** **[18]**
- a) Write in detail on malarial parasite life cycle and its pathogenecity
OR
 - b) Describe quantitative tube method for Widal test in detail
- *****

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PAPER III (BIOCHEMISTRY)

Q1. Fill in the blanks :- (1X10 =10)

- _____ are specific region or loci on enzyme to which substrate molecular binds.
- _____ element is the constituent of thyroid.
- Riboflavin (Vit. B12) is the component of Co- enzyme _____.
- The normal value of SGOT and SGPT are _____ and _____.
- _____ ion is chief extra cellular cation.
- _____ is the chief pigment of human bile.
- In nucleic acid the nucleoside refers to _____ + _____.
- In herbivore the color of bile is green due to more _____.
- The start codon or initiation codon is _____
- The base present in RNA _____.

Q2. Say True or False :- (1X5=5)

- In alkaptonuria disease urine turns black when contact with O₂.
- All enzymes are protein including ribozyme.
- Starch is non- reducing and gives red color with iodine.
- Pyrimidine consists of a six-member heterocyclic ring.
- The ketogenic amino acid is leucine and lysine.

Q3. Short notes on [any Six] :- (7X6 = 42)

- Diabetes Mellitus (Cause of disease)
- Procedure of serum bilirubin estimation)
- Phenyl ketonuria
- Function of thyroid gland
- Why GC pairing is more stable than AT pairing.
- Serum urea (Procedure only)
- Active sites
- CSF Collection

Q4. Explain [any Two] :- (12.5X2=25)

- Estimation of SGPT and SGOT with interpretation and result
- What is enzyme? Explain feature of enzyme and mode of action?
- What is Nucleic Acid? Define DNA and their structure
- Estimation of serum phosphorous

Q5. Attempt any one in detail with appropriate diagram (18)

- Write in detail on estimation of bile salt, bile pigment, 24 hrs. Urine protein and Benzan protein.

OR

- Write in detail on the estimation of alkaline phosphate and serum electrolytes with clinical significance.

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PAPER IV (HAEMATOLOGY)

Q.1 Fill up the blanks :- **[1x10=10]**

- a) Full name of EDTA is _____, _____, _____, and _____.
- b) Increases in the number of white blood cells are called _____.
- c) Haematocrit is also known as _____
- d) Decrease in the number of platelets is called _____.
- e) LE cell is seen in _____
- f) Nucleated RBC is known as _____.
- g) Most common anticoagulant used for blood transfusion is _____.
- h) Fluid used for WBC count is _____.
- i) Drabkin's solution is used for _____ method of Hb estimation.
- j) Normal reticulocyte count in adult is _____.

Q.2. Say True or False :- **[1x5=5]**

- a) Brilliant cresyl blue stain is used for reticulocyte count.
- b) Deficiency of factor VIII causes hemophilia.
- c) Serum is obtained from clotted blood.
- d) Haemoglobin present in liquid part of blood.

Q3. Shorts notes on [any Six] :- **[7x6=42]**

- | | |
|----------------------|-------------------------|
| a) PCV | b) Sickle cell disease |
| c) Anticoagulants | d) Haemocytometer |
| e) Red Cell Indices | f) Composition of Blood |
| g) Romanowsky Stains | h) Haemoglobin |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a) Major Cross match & Minor Cross match.
- b) Wintrobe tube & Westergen tube
- c) Plasma & Serum
- d) RBC pipette & WBC pipette

Q5. Attempt any one in detail with appropriate diagram **[18]**

- a] What is Anaemia? Describe in detail about morphological classification of anemia. Mention various tests to be performed in the Lab for diagnosis of type of Anemia.

OR

- b] Describe Collection of blood & various anticoagulants used. Which is the most common used anticoagulant?

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PAPER V (HISTOTECHNOLOGY)

Q.1 Fill up the blanks :- **[1x10=10]**

- a) Deparaffinisation is removal of _____ from tissue section.
- b) Microscopic study of individual cell is a small is called _____.
- c) Microtome knife is sharpened on _____.
- d) Cryostat is used for cutting _____ sections.
- e) Canada balsam is a _____ media.
- f) Alcohol removes _____ from tissue.
- g) The principle involved in fixation is _____ of protein.
- h) Sudan red stain is used for staining _____ is tissue.
- i) The simplest method of fixation is the application of _____.
- j) Most commonly used clearing agent is _____

Q2. Say True or False :- **[1x5=5]**

- a) Paraffin wax is most commonly used as embedding media.
- b) Most commonly used fixative is formalin.
- c) Post mortem is also called autopsy.
- d) Honing is done on stone.
- e) DPX is a mounting media.

Q3. Shorts notes on [any Six] :- **[7x6=42]**

- | | |
|---------------------|---------------------|
| a) Tissue cassettes | b) L- Moulds |
| c) Cell | d) Microtome knife |
| e) Autopsy | f) Gram's stain |
| g) Embedding Media | h) Simple Fixatives |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a) Frozen Section
- b) Decalcification
- c) Museum Techniques
- d) Special stains used in Histopathology

Q5. Attempt any one in detail with appropriate diagram **[18]**

- a) Describe in detail about various steps of tissue processing and most commonly used stain.
OR
- b) Explain exfoliative cytology, its role & various specimens studied by exfoliative cytology.
What stain is used. Describe staining.

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PAPER VI (LABORATORY MANAGEMENT)

Q.1. Fill up the blanks :- (1x10=10)

- a) Toluene is used as preservation for _____ sample.
- b) Solute is dissolved in _____ to form solution.
- c) Chromic acid solution is used for _____.
- d) Autoclave works on principle of _____.
- e) _____ is the fluid portion of clotted blood.
- f) Lumber puncture is done to aspirate _____.
- g) _____ Anticoagulant is used in blood bank.
- h) In photo colorimeter _____ tubes are used.
- i) Soda lime glassware has free _____ present.
- j) Monocular microscope has _____ eyepiece.

Q.2. Say True or False :- (1x5=5)

- a) For culture and sensitivity test of urine 24 hours urine is collected.
- b) Phenol is disinfectant.
- c) Reports of a patient are discussed in detail with co-workers in a Lab.
- d) pH 8.5 indicates acidity.
- e) Photo sensitive reagents are not exposed to direct sunlight.

Q.3. Short notes on [any Six] :- (7x6=42)

- a) Care and cleaning of glassware
- b) Incubator
- c) Hot air oven
- d) Qualitative and quantitative report system
- e) Disposal of Lab waste
- f) Importance of entry and labeling of lab sample
- g) Centrifuge
- h) National health programmes.

Q.4. Explain [any Two] :- (12.5x2=25)

- a) Duties and responsibility of a lab worker
- b) Definition of quality. Explain internal quality control
- c) Collection, preservation and transportation of blood sample

Q.5. Attempt any one in detail with appropriate diagram [18]

- a) How will you set up a model lab?

OR

- b) What are common accidents, which can occur in a lab? Write about their management?

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FIRST YEAR SAMPLE PAPERS
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PAPER I (ANATOMY & PHYSIOLOGY)

- Q.1 Fill up the blanks :-** [1x10=10]
- a] Oesophagus is about _____ cm long.
 - b] Sublingual glands are type of _____ glands.
 - c] Blood is also called _____ tissue.
 - d] _____ is the largest gland of the body.
 - e] _____ is the basic functional unit of kidney.
 - f] _____ factor is responsible for absorption of Vit. B
 - g] First heart sound is due to closure of _____ value.
 - h] Normal blood pressure of an adult male is _____.
 - i] Insulin is secreted by _____ cells of pancreas.
 - j] _____ is the pace maker of normal human heart .
- Q2. Say True or False :-** [1x5=5]
- a] Salivary amylase is also called ptylin.
 - b] Normal tidal volume of lung is 500 ml..
 - c] Adrenal cortex secretes T₃ and T₄ hormones.
 - d] Smallest bone of human body are phalanges.
 - e] There are 25 decidous teeths in children.
- Q3. Shorts notes on [any Six] :-** [7x6=42]
- | | |
|----------------------|-----------------------------------|
| a] Epithelial tissue | b] Functions of Liver |
| c] Lung Volume | d] Structure & function of kidney |
| e] Animal Cell | f] Structure of heart |
| g] Gall Bladder | |
- Q4. Explain [any Two] :-** [12.5x2=25]
- a] Structure and function of thyroid gland.
 - b] Physiology of respiration.
 - c] Name the bone of upper extremities
- Q5. Attempt any one in detail with appropriate diagram** (18)
- a] Write in detail about various digestive secretions and their enzymatic action.
- OR
- b] Write in detail about the conduction system of heart alongwith pulmonary and systemic circulation.

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ROLL NO. _____

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Donot write/ use Red Ink for writing answers.

Write only answers for ques.no.1 and 2.

PAPER II -MICROBIOLOGY-I

Q.1 Fill up the blanks :- **[1x10=10]**

- a) Microbiology is the study of _____.
- b) Short, thin, hair like appendages are _____.
- c) Gram's Iodine eats, as _____ is gram's staining.
- d) Retraction index of glass slide is _____.
- e) A centrifuge is working on the principle of _____.
- f) All most all culture media is sterilized by _____.
- g) Typhoid fever is caused by _____.
- h) Food poisoning bacilli is _____.
- i) Staphylococci are arranged is _____.
- j) Mycobacterium leprae is stained by _____

Q2. Say True or False :- **[1x5=5]**

- a) Staphylococci gives coagulates test positive.
- b) Acid production is sugar fermentation.
- c) Pneumococci is a capsulated bacteria.
- d) Cornyobacterium sp. is arranged is chains latter.
- e) T.B. is a bacterial disease.

Q3. Short notes on [any Six] :- **[7x6=42]**

- | | |
|--|----------------------|
| a] Negative Staining | b] Pneumococci |
| c] Centrifuge | d] E-Coli |
| e] Streak Culture Method | f] Albert's Staining |
| g] Collection of Throat Swab, Wound Swab, Sputum, Urine, pus and Nasal Swab. | |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Anaerobic culture method
- b] ImVIC's Reaction
- c] Bacterial growth curve and ABST

Q5. Attempt any one in detail with appropriate diagram **[18]**

- a] Write in detail about various types of culture media and types of Inoculation method.

OR

- b] Write is detail about Hot Acid Test staining and Cold Acid fast staining for mycobacterium sp.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
FIRST YEAR SAMPLE PAPERS
DIPLOMA IN MEDICAL LABORATORY TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____
NOTE: Attempt all questions. Internal choice is provided.
Donot write/ use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER III - BIOCHEMISTRY-I

- Q1. Fill in the blanks : - (1x10 =10)**
- A _____ solution has reserve acidity as well reserve basicity.
 - Amino acid is _____ in nature.
 - All enzymes are made up of protein except _____.
 - _____ cycle was the first cyclic metabolic pathway to be discovered.
 - Transfer of amino group is called _____
 - ATP+ Creatinine → ADP + _____ phosphate.
 - POH= _____.
 - Ring structure of monosaccharide given by _____
 - Stepwise break down of _____ up to the level of CO₂ in kreb's cycle.
 - Ketone bodies are _____, _____ and _____.
- Q2. Say True or False:- (1x5 =5)**
- The pressure of CSF in sitting position is 200 mm H₂O
 - Aromatic amino acid is methionine.
 - Maltose = Glucose + Fructose.
 - When the protein excretion exceed 1 g/day the protinuria is likely to be of renal origin.
 - Na⁺⁺ ion is chief extra cellular cation.
- Q3. Short notes on [any Six] :- (7X6 =42)**
- Metabolic water
 - God-pod method (Principle only)
 - Albumin estimation (procedure only)
 - Buffer solution
 - Find out the pH of M/100 HCL solution
 - Correction of Dehydration
 - Ketone bodies
 - Overload protinuria
- Q4. Explain [any Two] :- (12.5x2=25)**
- Demonstration of Glucose (GTT)
 - Estimation of blood urea
 - Glycolysis (Only aerobic respiration)
 - Protinuria up to the classification.
- Q5. Attempt any one in detail with appropiate diagram (18)**
- Write in detail about estimation of Serum cholesterol, principle, procedure and result thereon.
- OR
- Define Beta- Oxidation of fatty acid with their energetic.
- *****

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
FIRST YEAR SAMPLE PAPERS
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Write only answers for ques.no.1 and 2.

PAPER IV (HAEMATOLOGY)

- Q.1 Fill up the blanks :-** **[1x10=10]**
- a] The longer is the tube, _____ is the ESR.
 - b] Normal coagulation time of blood is _____ minutes by slide method.
 - c] _____ is the decrease in the number of WBC above normal in circulation.
 - d] In meningitis the colour of CSF is _____.
 - e] _____ carries heparin in the cells and is a chief carrier of histamine.
 - f] _____ helps in maintaining acid-base balance in the blood.
 - g] Normal Hb contents in new born babies is _____ gm/100ml.
 - h] _____ helps in removing foreign bodies, dead leucocytes and other materials.
 - i] Production of lymphocytes and monocytes mainly takes place in _____.
 - j] Fluid portion of blood is called _____.
- Q2. Say True or False :-** **[1x5=5]**
- a] Turk's fluid is red in colour.
 - b] For ESR estimation by wintrobe method 0.1 ml of blood is required.
 - c] Blood gets haemolysed, if heated or kept for a long time.
 - d] Platelets releases a substance called serotonin.
 - e] Blood with double oxalate anticoagulant cannot be transfused back into the body.
- Q3. Shorts notes on [any Six] :-** **[7x6=42]**
- | | |
|--|------------------------------------|
| a] Collection of CSF & its physical appearance | b] Platelet count |
| c] Principle & Procedure for Prothrombin Time | d] Hb estimation by Sahli's method |
| e] Microscopic examination of semen. | f] Estimation of PCV |
| g] Iron deficiency Anaemia | |
- Q4. Explain [any Two] :-** **[12.5x2=25]**
- a] Haemoglobin Synthesis
 - b] Estimation of ESR by westergren and wintrobe method
 - c] Estimation of Bleeding time by Ivy's and Duke's method
- Q5. Attempt any one in detail with appropriate diagram** **[18]**
- a] Write in detail about Rh blood group, Rh incompatibility & Rh typing by slide and tube method. ABO grouping by tube method
- OR
- b] Write in detail about types of leucocytes and the method of Total leucocyte count.
- *****

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN MEDICAL LABORATORY TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
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Write only answers for ques.no.1 and 2.

PAPER-V (PARASITOLOGY, SEROLOGY AND VIROLOGY)

Q.1 Fill up the blanks :- **[1x10=10]**

- a) Anemia is caused by _____ worm infections.
- b) Itching is anus is the symptom of _____ worm infections.
- c) Example of beef tapeworm is _____.
- d) ASO stands for _____.
- e) RA test is used to diagnose _____ disease.
- f) RPR stands for _____
- g) Malaria disease is caused by _____.
- h) VDRL test is done for the detection of _____ infections.
- i) Lugol's Iodine is used for _____.
- j) Small Pox is a _____ disease.

Q2. Say True or False :- **[1x5=5]**

- a) An antigen induces the productions of antibody.
- b) Black water fever is a bacterial disease.
- c) AIDS is not a viral disease.
- d) Widal test is done for detection of typhoid.
- e) Benzedrine test is positive is hookworm infection.

Q3. Short notes on [any Six] :- **[7x6=42]**

- a] Benzidine Test for Stool
- b] ASO Quantitative Test
- c] RA Test
- d] VDRL Slide Test
- e] Hepatosis B Virus
- f] Clinical Symptoms of Hookworm Infections
- g] Sedimentation techniques for the concentration of stool parasite.

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Different types of Antibody
- b] Life Cycle and infection caused by Beef Tapeworm
- c] Plasmodium falciparum

Q5. Attempt any one in detail with appropriate diagram **[18]**

- a] Describe ELISA test in detail
- OR
- b] Describe in detail about Immune Reaction.
- *****

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN MEDICAL LABORATORY TECHNOLOGY



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Write only answers for ques.no.1 and 2.

PAPER-VI BIOCHEMISTRY-II

- Q1. Fill in the blanks : - (1x10 =10)**
- a) The renal threshold of glucose is _____.
 - b) Normal serum Pottasium level is _____ meq/L.
 - c) Sodium is the major extracellular _____.
 - d) _____ are organic catalyist which enhances the biochemical reactions in a living organism.
 - e) _____ in serum calcium can be seen in malabsorption.
 - f) Normal range of urea is _____ mg/dL.
 - g) Normal range of Serum Creatinine is _____ mg/dL.
 - h) In photometer, green filter is having a wavelenghts of _____.
 - i) Phosphorus is present in the blood in two forms - organic and _____.
 - j) _____ act as buffer and a lubricant.
- Q2. Say True or False:- (1x5 =5)**
- a) Thyroid gland is also called as master gland.
 - b) Increase in blood glucose level is called hyperglycaemia.
 - c) Turbidity of plasma decreases with increase in temperature.
 - d) Billirubin originates from the breakdown of haemoglobin.
 - e) Heparin interferes with thymol turbidity.
- Q3. Short notes on [any Six] :- (7X6 =42)**
- a) Serum Phosphorus b) Obstructive Jaundice
 - c) Test for Bile pigment d) Hypothyroidism
 - e) Changes in blood sample on keeping for long period.
 - f) Serum Pottasium
 - g) Working of Photometer
- Q4. Explain [any Two] :- (12.5x2=25)**
- a) Principle, Reagent used and Procedure for SGOT.
 - b) Procedure for its estimation of Cholesterol.
 - c) Principle and Procedure for estimating Alkaline Phosphatase.
- Q5. Attempt any one in detail (18)**
- a) Write Principle, Reagent used, Procedure and interpretation of results for estimation of Plasma Protein A/G Ratio by blurate method.
- OR
- b) Write Principle, Reagent used, Procedure and interpretation of results for estimation of Serum Uric acid by Caraway method.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN MEDICAL LABORATORY TECHNOLOGY



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PAPER VII- HISTOTECHNOLOGY

Q.1 Fill up the blanks :- **[1x10=10]**

- a] Gelatin is used as ____ for frozen sections or partially necrotic tissue.
- b] For museum specimen the fixation should be done in _____.
- c] Dioxine _____ and clears the tissue.
- d] Tissue sections are placed in Xylene for _____.
- e] _____ is the process of polishing sharpened knife.
- f] _____ is the frozen section microtome in a freezing chamber.
- g] Formal calcium fixative contains Formalin & __ dissolved in distill water.
- h] ____ is the process of making tissues transparent and removal of alcohol.
- i] _____ is a golden brown granular pigment, a product of Hb breakdown.
- j] Principle involved in ____ is coagulation of protein in tissue from a semi-solid stage to a solid mass.

Q2. Say True or False :- **[1x5=5]**

- a] Alcohol is a type of fixative which is alkaline.
- b] Toulene hardens the tissue.
- c] Killing and hardening of tissue is called as honning.
- d] Time requirement for infiltration depends upon type of fixing agent used.
- e] To make correct cutting level, the knife must not be wiped with cloth.

Q3. Shorts notes on [any Six] :- **[7x6=42]**

- | | |
|---|--------------------------------|
| a] Impregnation of tissue | b] Malignancy |
| c] Clearing of tissue | d] Steps of H&E Staining |
| e] Dehydration | f] Physical method of Fixation |
| g] Types of Hones and method of honning | |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Reagent used, procedure followed and result obtained for AFB staining.
- b] Preparation, fixation and storage of museum specimens.
- c] Reagent used, procedure followed and result obtained for Carbohydrate staining.

Q5. Attempt any one in detail **[18]**

- a] Write in detail about special stains used in histopathology- Reagent used, procedure followed and result obtained in Gram's staining.

OR

- b] Write in detail about PAP Staining.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN MEDICAL LABORATORY TECHNOLOGY



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PAPER VIII - LABORATORY MANAGEMENT

- Q.1. Fill up the blanks :-** (1x10=10)
- _____ acid is used in chromic acid solution.
 - Study of blood _____ and their effects is done in serology section of the laboratory.
 - _____ is used as preservative for Urine.
 - _____ swab is collected for the investigation of the gonococcus.
 - _____ dish used in the aerobic culture of micorbes.
 - _____ is the only medicine available at present against lymphatic filariasis.
 - Length of time between the bite of infective mosquito and appearance of clinical symptoms is called _____.
 - _____ programme includes rural electrification and water supply.
 - Close finding to repeated analysis is called as _____.
 - Centrifuge is used for _____ and oven for _____.
- Q.2. Say True or False :-** (1x5=5)
- Alcohol is intoxicant.
 - Wet mopping should be done in the laboratory.
 - Immuno-haematology section does not involve antigen-antibody reaction.
 - In cytology there is no need for cutting of the sections.
 - Proper ventillation is required to reduce air flow in the laboratory.
- Q.3. Short notes on [any Six] :-** (7x6=42)
- | | |
|--|-------------------------------------|
| a) Disposal of specimen | b) Collection & Preservation of CSF |
| c) Tissue Biopsy | d) Importance of sample labelling |
| e) Molar Solution | f) First Aid in Lab |
| g) General measures to be kept in while working in the laboratory. | |
- Q.4. Explain [any Two] :-** (12.5x2=25)
- Injury caused by physical factors and their management in the laboratory.
 - Collection and Preservation of Urine sample
 - Reporting system used inside the lab. and various abbreviations used to denote them.
- Q.5. Attempt any one in detail with appropriate diagram** [18]
- Explain the first aid steps to be taken in case of acid and alkali burns in the laboratory.
OR
 - Name, explain different types of glass wares in laboratory & their uses.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN X-RAY TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/ use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER I (ANATOMY & PHYSIOLOGY)

Q.1 Fill up the blanks :- **[1x10=10]**

- a] There are _____ number of cranial bones in human body.
- b] Insulin is secreted by _____ .
- c] Elbow joint is formed by _____, _____ and _____ bones.
- d] Parotid gland is an example of _____ gland.
- e] Outermost covering layer of heart is called _____.
- f] The sphincter is present before the opening of stomach is called _____.
- g] The function of Spleen is _____ .
- h] The tube joining the middle ear with the oropharynx is called _____.
- i] _____ is the largest gland of the body.
- j] There are _____ number of sacral vertebrae.

Q2. Say True or False :- **[1x5=5]**

- a] Skeletal muscle are voluntary muscles.
- b] Golgi Bodies are also called suicidal bag of the cell.
- c] Blood serum is red in colour.
- d] Piamatar is a type of meninges of brain.
- e] Spleen unites RBC.

Q3. Shorts notes on [any Six] :- **[7x6=42]**

- | | |
|-------------------------------------|----------------------|
| a] Facial bones and joints of skull | b] True & False Ribs |
| c] Spinal cord | d] Gall bladder |
| e] Circle of Willis | f] Fallopian Tube |
| g] Function of heart | |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Portal Circulation
- b] Structure and function of stomach.
- c] Types of bones and their joints.

Q5. Attempt any one in detail with appropriate diagram **[18]**

- a] Write in details about pathway of heart conduction with appropriate diagram. Write about Systemic Circulation in detail.

OR

- b] Write in details about various organs of excretory system of the body and explain in detail about the anatomy of Renal excretory system.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN X-RAY TECHNOLOGY



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PAPER II (GENERAL PHYSICS)

Q.1. Fill up the blanks :- (1x10=10)

- a) Transference of heat in case of muddy water is called _____ .
- b) _____ are the units which stores the electric charge .
- c) X-Ray tube is a type of _____.
- d) Electrons are directed towards the anode plate by _____.
- e) Potential difference of electric current is called _____ .
- f) _____ type of waves cannot travel through vacuum .
- g) Power = Volts X _____ .
- h) _____ is the maximum displacement of a particle from the mean position of rest .
- i) _____ is the number of vibrations made by a particle in one second .
- j) Auto-Transformer in an X-Ray circuit acts as _____ selector .

Q.2. Say True or False :- (1x5=5)

- a) Temperature is average energy of heat.
- b) The material most often chosen for anode target is copper.
- c) Anode angle in case of rotating anode is 19 degrees.
- d) Melting point of tungsten is 2600 degrees centigrade.
- e) Diode is a type of a valve which allows current to pass through it in one direction only.

Q.3. Short notes on [any Six] :- (7x6=42)

- a) Conduction
- b) Units of Heat
- c) Pulsating D.C
- d) Rotating Anode
- e) Mechanical Wave
- f) Diode's Characteristic Curve
- g) Focal spot

Q.4. Explain [any Two] :- (12.5X2=25)

- a) High voltage x-ray circuit in transformer assembly.
- b) Full wave rectified circuit of an x-ray machine.
- c) Filament X-Ray circuit.

Q.5. Attempt any one : [18]

- a] Explain production & properties of X-rays ?
OR
- b] Explain in detail the factors on which the rate of convection of heat depends?

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN X-RAY TECHNOLOGY



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PAPER III - RADIATION PHYSICS

Q.1. Fill up the blanks :- (1x10=10)

- i] Melting point of tungsten is _____.
- ii] mAs controls _____ & Kvp controls _____ .
- iii] Grids are made up of narrow strips of _____ .
- iv] Convergent point is formed in _____ type of grid.
- v] Scintillation Counter works on the principle of counting of amount of _____ .
- vi] In compton process _____ & _____ are produced.
- vii] Electron is a _____ charged particle of matter.
- viii] _____ changes visual light into emission of electrons .
- ix] Grids reduces the amount of _____ radiations .
- x] Air gap act as grid during x-ray exposure but provides _____ to the image.

Q.2. Say True or False :- (1X5=5)

- i] Moving grids are generally crossed grids.
- ii] Sievert is a dose measuring unit.
- iii] Quantity of X-Rays are controlled by FFD.
- iv] Intensity of x-ray beam decreases with increase in distance.
- v] Cones provides circular variety of x-ray fields.

Q.3. Short notes on [any Six] :- (7x6=42)

- | | |
|--------------------------------------|---------------------------|
| a] Focussed Grid | b] Cones & Cylinders |
| c] Linear Grid | d] Off level grid cut-off |
| e] Aperture diaphragm | f] Inverse square law |
| g] Lateral decentering grid cut-off. | |

Q.4. Explain [any Two] :- (12.5x2=25)

- a] Scintillation Counter
- b] Cross section of X-ray tube through collimator box.
- c] G.M.Counter

Q.5. Attempt any one in detail [18]

- a] Explain the factors in detail controlling quality of x-ray beam and how it is helpful in radiography?

OR

- b] Explain the various processes when an X-ray interacts with the matter in detail, with the help of necessary figures?

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN X-RAY TECHNOLOGY



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Write only answers for ques.no.1 and 2.

PAPER IV (DARK ROOM TECHNIQUES)

Q.1. Fill up the blanks :- **[1X10=10]**

- i] Size of the crystal in fast speed film is _____.
- ii] Sensitivity speck is surrounded by negative charge of _____.
- iii] _____ chemical is present as preservative in MQ developer.
- iv] Wavelength of red colour light is _____.
- v] _____ & _____ is present in X-ray film emulsion layer.
- vi] Step wedge filter is also called _____ used in calibrating x-ray tubes.
- vii] _____ is used as an fixing agent in manual fixer.
- viii] _____ is an example of rare earth phosphor.
- ix] Chemical name of Phenadon is _____.
- x] Thickness of subtratum layer of intensifying screen is _____.

Q.2. Say True or False :- **[1X5=5]**

- i] X-ray films are generally processed at 50 degree celsius.
- ii] Phenyl parazolandin is present in PQ developer.
- iii] Activators are not required in calcium tungstate intensifying screens.
- iv] Speed of Intensifying screens depends upon thickness of emulsion layer.
- v] One light photon can produce 5 x-ray photons.

Q.3. Short notes on [Any Six] :- **[7x6=42]**

- | | |
|-------------------------|-----------------------------------|
| a] Dark Room Entrance | b] Wet Bench |
| c] X-ray film structure | d] X-ray film speed |
| e] Replenisher | f] Intensifying Screens structure |
| g] Film Fog | |

Q.4. Explain [Any Two] :- **(12.5x2=25)**

- a] Types of Phosphors used in Intensifying Screens
- b] Calibration of x-ray tube for different mA station
- c] Types of X-ray Cassettes

Q.5. Attempt any one in detail **[18]**

- a] Explain formation of latent image & its conversion into visible image in detail?
OR
- b] Explain MQ developer, its constituents & action ?

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN X-RAY TECHNOLOGY



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Write only answers for ques.no.1 and 2.

PAPER V (RADIOGRAPHIC POSITIONING)

Q.1. Fill up the blanks :- (1x10=10)

- a) _____ KvP is generally applied in shoulder lateral view.
- b) Grid is generally applied beyond _____ KvP.
- c) For Rib Cage _____ view is preferred for chest.
- d) To visualize Atlas & Axis bone in AP, _____ x-ray is performed.
- e) _____ FFD is normally used during fluoroscopy.
- f) Chest decubitus view is done to visualize _____ in the lungs.
- g) _____ plane divides body into right and left parts.
- h) Full form of PNS is _____.
- i) If fracture is suspected in cervical spine of the patient, AP and _____ view for cervical spine will be preferred.
- j) 18" to 20" FFD is used during _____.

Q.2. Say True or False :- (1x5=5)

- a) Supine means patient lying straight on his back.
- b) To visualize spur formation in calcaneum, APview of ankle is done.
- c) During nasal bone fracture, lateral views for nasal bone is done.
- d) Adduction means movement away from the medial plane of the body.
- e) Swimmer's view is performed to visualize T₁₂ and L₁ vertebrae.

Q.3. Write Radiographic views of [any Six] :- (7x6=42)

- a) Left elbow lateral
- b) Base of Skull
- c) Radial deviation view
- d) View for Zygomatic Bone Fracture
- e) View for L₅ and S₁.
- f) View for Shoulder AP
- g) Axial view for Patella

Q.4. Explain radiography in [any Two] :- (12.5X2=25)

- a) View for C₁ and C₂
- b) Chest PA View
- c) S.I.Joint

Q.5. Attempt any one : [18]

- a) Explain all possible views of Abdomen in case od SAIO in detail.
OR
- b) Explain all possible views to prove the radiography of TM Joint in detail.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN X-RAY TECHNOLOGY



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Write only answers for ques.no.1 and 2.

PAPER VI (SPECIAL INVESTIGATION PROCEDURES)

Q.1. Fill up the blanks :- (1x10=10)

- a) Shrinking of RBC in circulating blood is termed as ____ .
- b) Anaemia is decrease of _____ in circulating blood.
- c) _____ is an oral contrast media used for GI studies.
- d) In IVP of an adult _____ contrast is used.
- e) _____ contrast is used in Oral Cholecystography investigation.
- f) Full form of ERCP is _____.
- g) To visualize _____ myelogram study is performed.
- h) Full form of PTC is _____.
- i) For visualizing pharynx _____ study is performed.
- j) _____ FFD is used during fluoroscopy.

Q.2. Say True or False :- (1x5=5)

- a) Pelvimetry is done for measuring pelvis of pregnant women.
- b) Full form of HSG is Hysterio Salpingo- Graphy.
- c) Venflon is used for administering I.V. fluids to patient.
- d) Conray oral is given as contrast during Cholecystography.
- e) In lymphosarcoma, metastasis is present.

Q.3. Write Radiographic views of [any Six] :- (7x6=42)

- a) Metastasis
- b) Barium Swallow
- c) Anaemia
- d) ERCP
- e) IVP
- f) Suction Machine
- g) Contrast Media

Q.4. Explain the procedure for [any Two] :- (12.5X2=25)

- a) HSG
- b) Venography of lower limb
- c) Barium Follow Through

Q.5. Attempt any one : [18]

- a] Write the complete Patient instructions, procedure, views and contrast to rule out Gall Bladder organ in detail.

OR

- b] Write the complete Patient instructions, procedure, views and contrast to rule out Spinal Canal in detail.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
FIRST YEAR SAMPLE PAPERS
DIPLOMA IN X-RAY TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

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PAPER I (ANATOMY & PHYSIOLOGY)

Q.1 Fill up the blanks :- **[1x10=10]**

- a] There are _____ number of cranial bones in human body.
- b] Insulin is secreted by _____ .
- c] Elbow joint is formed by _____, _____ and _____ bones.
- d] Parotid gland is an example of _____ gland.
- e] Outermost covering layer of heart is called _____.
- f] The sphincter is present before the opening of stomach is called _____.
- g] The function of Spleen is _____ .
- h] The tube joining the middle ear with the oropharynx is called _____.
- i] _____ is the largest gland of the body.
- j] There are _____ number of sacral vertebrae.

Q2. Say True or False :- **[1x5=5]**

- a] Skeletal muscle are voluntary muscles.
- b] Golgi Bodies are also called suicidal bag of the cell.
- c] Blood serum is red in colour.
- d] Piamatar is a type of meninges of brain.
- e] Spleen unites RBC.

Q3. Shorts notes on [any Six] :- **[7x6=42]**

- | | |
|-------------------------------------|----------------------|
| a] Facial bones and joints of skull | b] True & False Ribs |
| c] Spinal cord | d] Gall bladder |
| e] Circle of Willis | f] Fallopian Tube |
| g] Function of heart | |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Portal Circulation
- b] Structure and function of stomach.
- c] Types of bones and their joints.

Q5. Attempt any one in detail with appropriate diagram **[18]**

- a] Write in details about pathway of heart conduction with appropriate diagram. Write about Systemic Circulation in detail.

OR

- b] Write in details about various organs of excretory system of the body and explain in detail about the anatomy of Renal excretory system.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
FIRST YEAR SAMPLE PAPERS
DIPLOMA IN X-RAY TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/ use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER II (GENERAL PHYSICS)

Q.1. Fill up the blanks :- (1x10=10)

- a) When heat is transferred in water , it is called _____ .
- b) _____ is the units used to measure the amplitude of current in a circuit.
- c) _____ type of DC can be obtained with the help of Full Wave rectified circuit.
- d) _____ calorie is equal to _____ joules .
- e) Distance travelled by _____ in one second is called Velocity.
- f) Mechanical waves cannot travel through _____ also .
- g) In _____ the particle vibrate about fairly fixed positions.
- h) If temperature of liquid is increased then it will eventually _____.
- i) _____ is actually the Kvp selector in high tension X-ray circuit.
- j) Anode angle of rotating anode tube is _____ .

Q.2. Say True or False :- (1x5=5)

- a) X-Ray tube is a type of triode.
- b) Electrons strikes at anode block.
- c) DC is easily transformed into higher voltages.
- d) Kvp meter is placed at operating console.
- e) No diodes are employed in an full wave rectified X - Ray circuit.

Q.3. Short notes on [any Six] :- (7x6=42)

- a) Pulsating D.C
- b) A.C
- c) Types of Auto-Transformer
- d) Properties of X-rays
- e) Space Current
- f) High tension Rectifiers
- g) Cathode Focussing Cup

Q.4. Explain [any Two] :- (12.5X2=25)

- a) Stationary anode tube
- b) High Voltage x-ray circuit.
- c) Full wave four valve rectified x-ray circuit.

Q.5. Attempt any one : [18]

- a) Explain in detail the production of x-rays in an x-ray tube ?
- OR
- b) Explain the factors in detail which controls the rate of conduction of heat in case of liquids?

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
FIRST YEAR SAMPLE PAPERS
DIPLOMA IN X-RAY TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

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Write only answers for ques.no.1 and 2.

PAPER III - RADIOGRAPHIC POSITIONING(ROUTINE)-I

Q1. Fill in the blanks :- **[1x10=10]**

- a] C.M. line extends from _____ to _____.
- b] Radiography of I.A.M. is performed generally for _____.
- c] For Zygomatic arch _____ view is performed.
- d] Thickness of lead apron is _____.
- e] Sagittal plane divides the body into _____ & _____.
- f] Cone view of sella is done to visualise _____.
- g] Central rays in case of SternumAP view _____.
- h] PA view of chest is done to see _____.
- i] Chest radiography is done at _____ FFD.
- j] Total number of fused vertebrae is _____.

Q2 Say True or False :- **[1x5=5]**

- a] In case of Sub-acute intestinal obstruction, we perform erect AP view of abdomen
- b] Total number of bone in human body is 216.
- c] Grid is generally used beyond 60 KVP.
- d] Magnification of Image increase by decreasing distance between object and cassette.
- e] Scaphoid is a type of carpal bone.

Q3 Shorts notes on [Any six] :- **[7x6=42]**

- | | |
|---------------------------------|--------------------------|
| a] Skyline view for Patella | b] Base of skull view |
| c] Calcaneum lat. view for spur | d] Lateral view of elbow |
| e] Ulnar deviation view | f] Water's view |
| g] Oblique view of foot | |

Q.4 Explain [Any Two] :- **[12.5x2=25]**

- a] Radiography of leg in case of fracture in upper one-third
- b] Cervical spine AP and Lateral view
- c] S.T.B. radiography

Q5. Attempt any one in detail with appropriate diagram **[18]**

- a] Write the radiography of skull in case fracture is suspected in Occipital bone.
OR
- b] Explain the possible views which are essential in case of SAIO.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
FIRST YEAR SAMPLE PAPERS
DIPLOMA IN X-RAY TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER IV - SPECIAL INVESTIGATION PROCEDURES-I

Q.1. Fill up the blanks :- (1x10=10)

- a) Decrease of RBC in circulating blood is termed as ____ .
- b) Laukaemia is increase of immature _____ in blood.
- c) Barium sulphate is an ____ contrast media used for barium studies.
- d) In IVP of an adult _____ contrast is used.
- e) _____ contrast is used in OCG investigation.
- f) Full form of ERCP is _____.
- g) To visualize _____ myelogram study is performed.
- h) Full form of PTC is _____.
- i) For visualizing pharynx _____ study is performed.
- j) 18" to 20" FFD is used during _____.

Q.2. Say True or False :- (1x5=5)

- a) Pelvimetry is done for measuring pelvis of childrens.
- b) Full form of HSG is High Sailography.
- c) Venflon is used for administering IV fluids and injections to the patient.
- d) Telepaque is given as contrast during Cholecystography.
- e) In myosarcoma, metastasis is present.

Q.3. Write Radiographic views of [any Six] :- (7x6=42)

- a) Neoplasia
- b) Barium Swallow
- c) Anaemia
- d) ERCP
- e) OCG
- f) Suction Mahine
- g) Contrast Media

Q.4. Explain the procedure for [any Two] :- (12.5X2=25)

- a) IVP
- b) Venography of upper limb
- c) Barium Follow Through

Q.5. Attempt any one : [18]

- a) Write the complete Patient instructions, procedure, views and contrast to rule out spinal canal in detail.

OR

- b) Write the complete Patient instructions, procedure, views and contrast to rule out Female reproductive system in detail.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN X-RAY TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER V - RADIOGRAPHIC POSITIONING - II

Q1. Fill in the blanks :- **[1x10=10]**

- a] _____ view is done to visualise foramen magnum.
- b] Radiography of I.A.M, _____ view is done.
- c] Decubitus view is done to visualise _____.
- d] Name para nasal sinuses _____, _____, _____, _____.
- e] Coronal plane divides body into _____ & _____.
- f] C.M. line extends from _____ to _____.
- g] X-Ray were discovered by _____.
- h] In town's view central rays pass through _____.
- i] Chest radiography is done at _____ F.F.D.
- j] Trans-lateral X-rays generally performed in _____ conditions.

Q2 Say True or False :- **[1x5=5]**

- a] Ethmoid is a facial bone.
- b] Chest P.A view is done after complete inhalation.
- c] Grid is generally used beyond 60 KvP.
- d] In case of nasal congestion skull A.P view is preferred.
- e] Swimmer's view is done to visualise C₇D₁.

Q3 Shorts notes on [Any six] :- **[7x6=42]**

- | | |
|---------------------------------------|----------------------------|
| a] Town's view | b] Axial view for patella |
| c] Shoulder AP view | d] Ulnar deviation |
| e] Prone axial view for optic formina | f] Elbow AP & Lateral view |
| g] Calcanium lateral view for spur | |

Q.4 Explain [Any Two] :- **[12.5x2=25]**

- a] P.N.S. Radiography
- b] Chest PA View
- c] KUB Radiography

Q5. Attempt any one in detail with appropriate diagram **[18]**

- a] Write the radiography of skull in case fracture is suspected in temporal bone.
OR
- b] Explain the possible views which are essential in case of SAIO.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN X-RAY TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER VI (RADIATION PHYSICS)

Q.1. Fill up the blanks :- (1x10=10)

- a) Copper is used as filter in _____ .
- b) Grid ratio = _____ .
- c) Reduction in the intensity of an X-ray beam as it traverses matter is called _____.
- d) Alternate method in absence of grid is the inclusion of _____ between patient & cassette.
- e) The dose received at a point by the skin, including back- scattered radiation is called ____ .
- f) According to Eienstien's theory _____ can be changed into _____ .
- g) Convergent line is present in _____ type of focussed grid.
- h) _____ & _____ are eliminated in compton process .
- i) The depth dose at the treated tumour is called _____ .
- j) In G.M.Counter _____ volt battery is used to move electrons around the circuit.

Q.2. Say True or False :- (1X5=5)

- a) Quality of x-ray depends on Kvp applied to the X-ray circuit.
- b) Nerve tissues are least sensitive to radiations.
- c) Scintillation chambers are used routinely.
- d) Cathode focussing cup is made up of tungsten.
- e) Convergent line is present in linear type of grid.

Q.3. Short notes on [any Six] :- (7x6=42)

- | | |
|--------------------------------------|---|
| a) Genetic Effect of radiations | b) G.M.Counter |
| a) Cross Focussed grids | b) Quantity of X-ray beam |
| c) Radiographic Cones | d) Importance of grid centering |
| e) Lead Glasses | f) Use of Inverse square law in radiography |
| g) Genetic effect produced by x-rays | |

Q.4. Explain [any Two] :- (12.5x2=25)

- a) G.M.Counter
- b) Scintillation Counter
- c) First free air ionisation chamber.

Q.5. Attempt any one in detail [18]

- a) Explain in detail about the protection of the patient from ionising radiations ?
OR
- b) Explain the various processes when an X-ray interacts with the matter in detail , with the help of necessary figures ?

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN X-RAY TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
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Write only answers for ques.no.1 and 2.

PAPER VII - DARK ROOM TECHNIQUES

Q.1. Fill up the blanks :-

[1X10=10]

- i] Thickness of x-ray film bonding layer is _____.
- ii] _____ & _____ is present in x-ray emulsion layer .
- iii] Working of screen depends upon thickness of _____ layer .
- iv] Phenadon is present in _____ type of developer.
- v] _____ type of phosphors requires activators.
- vi] X-ray film base is made up of _____ .
- vii] Ph of PQ developer is _____ .
- viii] _____ is the fixing agent present in automatic fixer .
- ix] _____ is added to manual fixer as hardner .
- x] Chemical name of hydroquinone is _____ .

Q.2. Say True or False :-

[1X5=5]

- i] Sodium sulphite is a type of preservative .
- ii] One latent image is formed by 450 light photons .
- iii] Conversion efficiency of rare earth phosphor is 20%.
- iv] In x-ray film emusion AgBr is 90 - 99%.
- v] Light patches can be produced on an finished radiograph due to developer also.

Q.3. Short notes on [Any Six] :-

[7x6=42]

- | | |
|--|------------------------|
| a] MQ developer | b] Film Fog |
| c] Proove Numerically the Intensification Factor | d] Gamma of x-ray film |
| e] Reticulation markings produced on X-ray film | f] Safe Light Testing |
| g] Unsharphness produced on x-ray film image . | |

Q.4. Explain [Any Two] :-

(12.5x2=25)

- a] Why thin Screens provides more details in comparison with thick screens
- b] Write the factors which affects the working of developer in detail
- c] Factors determining the speed of Intensifying Screens.

Q.5. Attempt any one in detail

[18]

- a] Explain the advantages & disadvantages of using x-rays in our daily life ?

OR

- b] Write in details about the factors which affects the quality of radiographs during processing?

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN X-RAY TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER VIII - SPECIAL INVESTIGATION PROCEDURES - II

Q.1. Fill up the blanks :- (1x10=10)

- a) Deficiency of Vit -A causes _____.
- b) Destruction of bone marrow is called _____.
- c) Chemical name of urograffin is _____.
- d) _____ is done for visualising gall bladder.
- e) Full form of E.R.C.P.
- f) Carotid angiography is done for _____.
- g) Cardiac defibrilator is for _____.
- h) Metastatis is present in _____ type of neoplasia.
- i) C.T. scan was discovered by _____.
- j) Barium Sulphate contrast is used to examine _____.

Q.2. Say True or False :- (1x5=5)

- a) Dulcolux & charcoal is used for preperation of patient for Chest PA.
- b) Endoscopy is used to see internal structure of GI Tract.
- c) 60 min film in I.V.P is known as postmic film.
- d) Ultravist is an ionic contrast media.
- e) In cardiac angiography guide wire is used.

Q.3. Short notes on [any Six] :- (7x6=42)

- a) Leukaemia
- b) Oral cholecystography
- c) Blood constituents
- d) Bronchography
- e) Sphygmomanometer
- f) Local anaesthesia
- g) Causes of diseases

Q.4. Explain [any Two] :- (12.5x2=25)

- a) Intra Venous Pyelography
- b) Hysterio Salpingography
- c) ERCP

Q.5. Attempt in any one in detail with appropriate diagram [18]

- a) How you will evaluate Upper G.I.Tract with the help of contrast media.
- OR
- b) Explain the process in detail for myelography and its importance.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN OPHTHALMIC ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.

Donot write/use Red Ink for writing answers.

Write only answers for ques.no.1 and 2.

PAPER I (ANATOMY & PHYSIOLOGY)

Q.1 Fill up the blanks: **[1x10=10]**

- a] The dioptric power of an adult human eye is approx. _____.
- b] The eyelids are modified, mobile folds of skin with a firm tarsal plate of _____ tissue.
- c] The lacrimal gland lies in _____.
- d] Total number of fused vertebrae are _____
- e] The left lungs is divided into _____lobes.
- f] Colour blindness is due to the absence of _____
- g] Tears are the secretions of a gland called _____ .
- h] In retina the vision is the sharpest at _____
- i] The middle layer of adrenal cortex is called _____
- j] The kidney contains approx. _____nephrons.

Q2. Say True or False:- **[1x5=5]**

- a] Six extra ocular muscles in each eye are responsible for eye movements.
- b] The crystalline lens develops from ectoderm by invaginating into the primitive optic vesicle.
- c] Kidney lies in anterior abdominal wall.
- d] Aqueous humour is the strongest refractive surface of the eye.
- e] Anterior portion of the eye has two seperate blood supplies.

Q3. Shorts notes on [any Six]:- **[7x6=42]**

- | | | |
|-------------------------|----------|------------------|
| a] Cornea | b] Ovary | c] Arch of aorta |
| d] Conjunctiva | e] Lungs | f] Thyroid gland |
| g] Extra ocular muscles | | |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Physiology of vision
- b] Process of digestion
- c] Formation of Urine

Q5. Attempt any one detail with appropriate diagram **(18)**

- a] Write in detail about the structure ,location and function of heart with circulation of blood alongwith well labelled diagram?

OR

- b] Write in detail about the secretion, circulation and functions of the aqueous humour ?

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN OPHTHALMIC ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.

Donot write/ use Red Ink for writing answers.

Write only answers for ques.no.1 and 2.

PAPER II (OPTICAL PHYSICS)

Q.1. Fill up the blanks :- (1x10=10)

- a) If object is placed between F & C , the image will be formed _____ the object.
- b) Radiation has all properties of _____ waves .
- c) Angle of incidance is equal to _____ .
- d) Refractive index of white crown glass is _____ .
- e) A convex mirror has a _____ principal focus behind the mirror .
- f) Speed of light is _____ m/sec in air .
- g) In _____ mirrors caustic curve is formed .
- h) Wavelength of red colour light is _____ .
- i) Real Depth / Apparent Depth = _____ .
- j) Linear magnification (m) in case of lenses = _____ .

Q.2. Say True or False :- (1x5=5)

- a) An object can be seen if the light from it enters the eye.
- b) Shadows are formed because light travels in straight line.
- c) The principal axis of a spherical mirror is the line joining the pole P to the centre of curvature.
- d) Diffuse reflection is due to the reflecting surface not perfectly smooth.
- e) A stream of light can be converged or diverged.

Q.3. Short notes on [any Six] :- (7x6=42)

- a) Astigmatic Lenses
- b) Formation of image in a plane mirror
- c) Parabolic mirror
- d) Laws of reflection
- e) Luminous & Non- Luminous objects
- f) Concave & Convex lense
- g) Regular and diffuse reflection.

Q.4. Explain [Any Two] :- (12.5x2=25)

- a) Images formed by different positions of objects in case of Convex lens.
- b) Images formed by different positions of objects in case of Concave mirrors .
- c) When a ray passes through an prism, Mention all angles formed .

Q.5. Attempt any one in detail with appropriate diabram (18)

- a) Explain various factors in detail , controlling transference of heat in case of liquids ?

OR

- b) Explain the Laws of refraction and calculate its refractive index with the help of an ray diagram in case of glass slab.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN OPHTHALMIC ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
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Write only answers for ques.no.1 and 2.

PAPER III (REFRACTION, VISUAL OPTICS & EYE DISEASES)

Q1. Fill in the blanks :- **[1x10=10]**

- a] In viral keratitis the corneal sensations are _____.
- b] The refractive index of the English crown glass is _____ .
- c] _____ is the strongest cycloplegic medicine .
- d] A ray when passes through a prism bends towards _____ of the prism.
- e] _____ lenses are magnifying lenses which relax the accomodation .
- f] Concave lenses stimulates the _____ .
- g] The dioptric power of the human cornea is _____ D.
- h] Movement of pupil is controlled by _____ nerve.
- i] In Buphthalmos, the intra ocular pressure is _____ .
- j] Pilocarpine is used for treating _____ .

Q2. Says True or False :- **[1x5=5]**

- a] Atropine drops can be safely used in small childrens.
- b] 10% drosyn drops can be safely used for dilatation of pupil in heart patients.
- c] In narrow angle glaucoma patients mydriatics should be avoided as far as possible.
- d] Keratometer is used for measuring visual fields.
- e] In autorefractometer, infrared light is used for assessment of the refractive error .

Q3. Shorts not es on [any Six] :- **[7x6=42]**

- | | |
|-----------------------------------|--------------------|
| a] Chalazion | b] Pterygium |
| c] Aphakia | d] Mydriatic drugs |
| e] Slit lamp | f] Colour vision |
| g] Surgical treatment of glaucoma | |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Cross -section of Eyeball
- b] Sturm's Conoid
- c] Reflection of light rays from a concave mirror

Q5. Attempt any one in detail with appropriate diagram **[18]**

- a] Discuss in detail about the procedure of contact lens fitting alongwith their indications & complications?

OR

- b] Write in detail the phenomenon of accomodation ?

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
FIRST YEAR SAMPLE PAPERS
DIPLOMA IN OPHTHALMIC ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____
NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER I (ANATOMY & PHYSIOLOGY)

- Q1. Fill in the blanks :-** **[1x10=10]**
- a] The sclera is made up of dense collagenous ____ tissue .
 - b] Cornea is also made up of ____ .
 - c] Retina is the innermost coat of the ____.
 - d] Vitreous humour is a ____ jelly like mass .
 - e] ____ is a disease caused by deficiency of Vit.A.
 - f] ____ is a vascular membrane which lines the posterior 2/3rd of the sclera .
 - g] Each cerebral hemisphere has , on the outside, a thin layer of grey matter ,the ____ .
 - h] The supporting cells of the neurons are called ____ .
 - i] Blood pressure is controlled reflexly through cardiac & ____ centres in medulla of brain.
 - j] Salivary glands are ____ in number.
- Q2. Says True or False:-** **[1x5=5]**
- a] Tears are secreted by lacrimal glands .
 - b] The gonads of the male are called Testes.
 - c] Pulmonary artery carries deoxygenated blood .
 - d] The circular opening in the middle of the Iris is pupil .
 - e] Keratomalacia is caused by the deficiency of Vit.D.
- Q3. Shorts notes on [any Six] :-** **[7x6=42]**
- | | |
|----------------------|----------------------|
| a] Spinal Cord | b] Meninges of brain |
| c] Seminal ducts | d] Biliary tract |
| e] Parathyroid gland | f] Epithelium Tissue |
| g] Branches of Aorta | |
- Q4. Explain [any Two] :-** **[12.5x2=25]**
- a] Structure of Eyeball
 - b] Microscopic Structure of Nephron
 - c] Contraction of Heart
- Q5. Attempt any one in detail with appropriate diagram** **[18]**
- a] Write in detail structure , function, secretions & location of digestive System?
OR
 - b] Describe in detail about Female reproductive system with well labelled diagram ?
- *****

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
FIRST YEAR SAMPLE PAPERS
DIPLOMA IN OPHTHALMIC ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.

Donot write/ use Red Ink for writing answers.

Write only answers for ques.no.1 and 2.

PAPER II (OPTICAL PHYSICS)

Q.1. Fill up the blanks :- (1x10=10)

- a) In convex mirror the image is formed _____ the mirror.
- b) Refractive index (n) = _____ .
- c) Centre of curvature is defined as _____ .
- d) _____ curve is formed in case of parabolic mirrors.
- e) Organic plastics are usually polymers of _____ .
- f) Half the radius of curvature = _____ length .
- g) Transference of heat in case of glass is termed as _____ .
- h) _____ sources radiate light when their atoms become excited as a result of receiving energy.
- i) Wavelength of red colour light is _____ .
- j) In periscope the light bends at an angle of _____ at each mirror.

Q.2. Say True or False :- (1x5=5)

- a) Large concave spherical mirror are also called parabolic mirrors.
- b) A ray through the optical centre remains undeviated.
- c) A stream of light can be converged.
- d) When object is placed between F & P in case of concave mirror , the image formed is virtual.
- e) Shadows are formed because light travels in straight lines.

Q.3. Short notes on [any Six] :- (7x6=42)

- | | |
|-----------------------------------|--------------------------|
| a) Spherical lenses | b) Dioptre |
| c) Cylindrical Lenses. | d) Laws of reflection |
| e) Caustic curve | f) Real & Apparent Depth |
| g) Regular and diffuse reflection | |

Q.4. Explain [Any Two] :- (12.5x2=25)

- a) When a ray passes through an glass slab , Mention all angles formed. Calculate its refractive index .
- b) Images formed by different positions of objects in case of Convex lens.
- c) Images formed by different positions of objects in case of Concave mirrors .

Q.5. Attempt any one in detail with appropriate diabram (18)

- a) Explain the nomenclature and refraction through prism, thereby mentioning its all angles?
OR
- b) Explain with the factors controlling the conduction of heat ?.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
FIRST YEAR SAMPLE PAPERS
DIPLOMA IN OPHTHALMIC ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER III (OPHTHALMIC OPTICS AND DISPENSING)

Q.1. Fill up the blanks :- (1x10=10)

- a] The visible light has a wavelength range of _____.
- b] UV rays have wavelengths below _____.
- c] Infrared light rays have wavelength above _____.
- d] The light rays always travel in _____ lines.
- e] Convex lenses _____ the light rays.
- f] Concave lenses _____ the light rays.
- g] A prism bends the light rays towards _____.
- h] The image seen through a prism appears shifted towards _____.
- i] The mirror used in testing of visual acuity is a _____ mirror.
- j] Cornea acts like a _____ mirror.

Q.2. Say True or False :- (1x5=5)

- a] A bundle of light rays has rays going into different directions.
- b] A pencil of light rays has rays going into one direction.
- c] A pin hole allows only the central light rays to pass through.
- d] Magnifying lenses are concave lenses.
- e] Convex lenses are used for treating myopia.

Q.3. Short notes on [any Six] :- (7x6=42)

- | | |
|----------------------|---------------------|
| a] Spectacle frames | b] Refractive index |
| c] Emmetropia | d] Hypermetropia |
| e] Myopia | f] Astigmatism |
| g] Antiglare Glasses | |

Q.4. Explain [Any Two] :- (12.5x2=25)

- a] Refraction through a prism
- b] Sturm's conoid
- c] Transposition of cylinders

Q.5. Attempt any one in detail with appropriate diabram (18)

- a) Describe in detail the reflection of light rays from a concave mirror in various positions of the object.

OR

- b) Describe in detail the refraction of light rays through convex, concave and cylindrical lenses.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN OPHTHALMIC ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____
NOTE: Attempt all questions. Internal choice is provided.
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Write only answers for ques.no.1 and 2.

PAPER IV (REFRACTION - I)

- Q.1. Fill up the blanks :-** (1x10=10)
- a] Corneal curvature is measured by _____.
 - b] _____ is measured with Tonometer.
 - c] Power of accomodation decreases in _____.
 - d] Image is formed on the retina in _____.
 - e] Fundus evaluation is done with an _____.
 - f] _____ is the strongest cycloplegic.
 - g] _____ is used to determine the axis and strength of a cylinder.
 - h] In hypermetropia image is formed _____ the retina.
 - i] Sturm's conoid is formed in _____.
 - j] Hypermetropia can be corrected by _____ lens.
- Q.2. Say True or False :-** (1x5=5)
- a] Myopia can be corrected by convex lens.
 - b] Duochroma test is used to find out axis of cylinder.
 - c] Tropicacyl is the strongest mydriatic drug.
 - d] Aphakia means absence of lens.
 - e] With presbyopia the near point of convergence increases.
- Q.3. Short notes on [any Six] :-** (7x6=42)
- | | |
|--------------------------|------------------|
| a] Visual Acquity | b] Fogging |
| c] Keratometry | d] Tonometry |
| e] Correction of aphakia | f] Anisometropia |
| g] Sturm's conoid | |
- Q.4. Explain [Any Two] :-** (12.5x2=25)
- a] Astigmatism
 - b] Correction of myopia
 - c] Near point of accomodation
- Q.5. Attempt any one in detail with appropriate diabram** (18)
- a) Explain in detail the process of retinoscopy.
- OR
- b) Explain in detail about Myopia and methods of correcting it?.
- *****

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN OPHTHALMIC ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/ use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER V (REFRACTION - II)

Q.1. Fill up the blanks :- (1x10=10)

- a] Snellen's chart is used for assessing visual acuity for _____.
- b] Minus lens are also called _____ lens.
- c] Fundus evaluation can be done by _____.
- d] LASIK means _____.
- e] Radial partial thickness cuts are made on the cornea in _____.
- f] Astigmatism is corrected by _____.
- g] Inward squinting of eyes is known as _____.
- h] Cover-uncover test is used to detect _____.
- i] Hirschberg test is used to detect _____.
- j] Maddox rod is used for _____.

Q.2. Say True or False :- (1x5=5)

- a] Aphakia means absence of lens.
- b] Low aids are helpful for people with retinal diseases.
- c] Manifest squint is known as Orthophoria.
- d] Phacoemulsification procedure uses ultrasonic waves.
- e] Contact lens are used in refractive errors.

Q.3. Short notes on [any Six] :- (7x6=42)

- | | |
|--------------------|--------------------------|
| a] Snellen's chart | b] Trial box |
| c] Cover test | d] Direct ophthalmoscope |
| e] Astigmatic fan | f] Maddox wing |
| g] Biometry | |

Q.4. Explain [Any Two] :- (12.5x2=25)

- a] Recording of visual acuity
- b] Classification of squint
- c] Radial keratotomy

Q.5. Attempt any one in detail with appropriate diagram (18)

- a) Explain in detail about Contact lens.
- OR
- b) Explain in detail about Intra ocular lens implant..

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN OPHTHALMIC ASSISTANT



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NOTE: Attempt all questions. Internal choice is provided.
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Write only answers for ques.no.1 and 2.

PAPER VI (VISUAL OPTICS & EYE DISEASES)

Q.1. Fill up the blanks :- (1x10=10)

- a] The speed of light rays in vacuum is _____.
- b] The refractive index of normal crown glass is _____.
- c] In high index glasses, the refractive index is _____.
- d] Convex mirror always forms _____ image.
- e] The image formed by a plane mirror is always _____ in size.
- f] The light rays passing through a prism bend towards _____ after passing through prism.
- g] _____ lenses are magnifying lenses.
- h] _____ lenses are used to correct astigmatism.
- i] Concave lenses are used to correct _____.
- j] Cross cylinder is used to verify _____ of a cylindrical lens.

Q.2. Say True or False :- (1x5=5)

- a] Image formed by convex mirror is always virtual.
- b] Image formed by convex mirror is always smaller in size.
- c] Cross cylinder can verify the power of a cylindrical lens.
- d] Cross cylinder can verify the axis of a cylindrical lens.
- e] Prisms can be used in spectacles to correct squint in some cases.

Q.3. Short notes on [any Six] :- (7x6=42)

- | | |
|-------------------|-----------------------|
| a] Pin-Hole | b] Keratometry |
| c] Cross cylinder | d] Multifocal glasses |
| e] Schematic Eye | f] Plastic lenses |
| g] Contact lenses | |

Q.4. Explain [Any Two] :- (12.5x2=25)

- a] Uses of YAG laser in the eye
- b] Refraction of light rays through a prism
- c] Reflection of light rays from convex mirror

Q.5. Attempt any one in detail with appropriate diagram (18)

- a) Describe in detail the fitting of glasses into spectacle frames.
OR
- b) Describe in detail the various types of spectacle frames available and their suitability for various types of patients.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN O.T. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____
NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER I (ANATOMY & PHYSIOLOGY)

- Q.1 Fill up the blanks :-** [1x10=10]
- a] The normal Tidal volume is _____ .
 - b] Normal Cardiac Output of an heart in an healthy adult is _____ .
 - c] Bile is formed in _____ .
 - d] Normal average heart rate is _____ per minute.
 - e] The brain is situated in long case called _____ .
 - f] Insulin is produced by _____
 - g] The dorasal vertebraes are _____ in number.
 - h] Enzyme ptyalin is present by _____ .
 - i] The innermost layer of heart is _____ .
 - j] Middle layer of uterus is called _____ .
- Q2. Say True or False :-** [1x5=5]
- a] CSF circulates in spinal cord.
 - b] Deficiency of vitamin D causes scurvy.
 - c] Scaphoid bone is a type of tarasl bone.
 - d] Xiphoid process is end part of tibia bone.
 - e] There are eight cranial bones.
- Q3. Shorts notes on [any Six] :-** [7x6=42]
- | | | |
|----------------------|--------------------|-----------|
| a] Peristalsis | b] Pituitary gland | c] Kidney |
| d] Facial Bones | e] Larynx | f] Villi |
| g] Meninges of brain | | |
- Q4. Explain [any Two] :-** [12.5x2=25]
- a] Formation & Circulation of CSF
 - b] Process of Respiration
 - c] Route of heart conduction in detail.
- Q5. Attempt any one in detail with appropriate diagram** [18]
- a] Write in detail about systemic circulation of heart alongwith its structure, function & location?
OR
 - b] Write in detail about structure, function, secretions & location of Liver & Small intestine in digestive system with well labelled diagrams ?

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN O.T. TECHNOLOGY



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Write only answers for ques.no.1 and 2.

PAPER II (SURGICAL INSTRUMENTS & MONITORING, O.T.ETHICS/DISCIPLINE)

Q.1. Fill up the blanks : **[1x10=10]**

- i] Defibrillator is used for _____.
- ii] _____ are used to obtain corneal button from the donors eye.
- iii] Suction machine is used for _____.
- iv] Endoscope is used for _____.
- v] Betadine solution is used for _____ during operation.
- vi] OT should be fumigated by _____.
- vii] In IOL generally _____ no. of sutures are used.
- viii] For respiratory comfort _____ is used in an emergency.
- ix] In dead body the _____ are dilated.
- x] Instruments can be sterilised by _____ in case of emergency.

Q.2. Say True or False : **[1x5=5]**

- i] Diazepam is a type of tranquilizer.
- ii] In DCR caliper is not required.
- iii] The instruments can be sterilised by using alcohol.
- iv] Disposable gloves should always be washed with saline before operation.
- v] Production of isoelectric line is an indication of becoming heart inactive.

Q.3. Write short notes on [any Six] : **[7x6=42]**

- | | |
|-------------------------|----------------------------|
| a] Glaucoma | b] Fatigue Factors in O.T. |
| c] Cardiac Monitor | d] Keratoplasty |
| e] Cholecystomy | f] Intraocular Surgery |
| g] Vaginal Hysterectomy | |

Q.4. Explain [any Two] : **[12.5x2=25]**

- a] Control of an infection in an OT.
- b] Discuss various chemical hazards in an O.T.
- c] Preparation of tray for Endoscopy.

Q.5. Explain the management and preparation of basic Eye procedures tray for major Operating procedures?

OR

Explain in detail about protection of patient from X-rays and discuss the somatic & genetic effects produced by radiation.

[18]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN O.T. TECHNOLOGY



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Write only answers for ques.no.1 and 2.

PAPER III (SURGICAL PROCEDURES, STERILIZATION AND DISINFECTION ETC.)

Q.1. Fill up the blanks : **[1x10=10]**

- i] Tryphines are used in _____ grafting.
- ii] Surgical gloves are made up of _____.
- iii] Instrument trays are having a mat made up of _____.
- iv] Full form of IOL is _____.
- v] _____ disinfectant is used for cleaning of gloves in between surgeries.
- vi] Define Colonoscopy _____ .
- vii] 1% sodium hypochlorite can be used for _____.
- viii] The normal blood pressure in an adult is _____.
- ix] _____ can be used as a chemical for chemical sterilization.
- x] Osteosarcoma is _____ type of Neoplasia.

Q.2. Say True or False : **[1x5=5]**

- i] Nitrogen gas can be used for fumigation purposes.
- ii] Cardiac output can be calculated by multiplying stroke volume & HR.
- iii] Formaldehyde is a toxic chemical.
- iv] Ammonia is a type of sedative.
- v] In squint surgery caliper is not required.

Q.3. Write short notes on [any Six] : **[7x6=42]**

- | | |
|-------------------------------|-----------------------------------|
| a] Fire Hazard | b] Autoclaving |
| c] Sterilization by chemicals | d] Dry & Moist heat sterilization |
| e] Bronchoscopy | f] Corneal Ulcer |
| g] Cardiac Angiography | |

Q.4. Explain surgical procedures for [any Two] : **[12.5x2=25]**

- a] SICS Surgery
- b] HSG Procedure
- c] Drainage of Abcess in the liver region

Q.5. Explain in detail about patient preparation pre-operatively for abdominal surgery?

OR

Explain the management and control of insect or flies that appears in an OT during operation?

[18]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN O.T. TECHNOLOGY



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Write only answers for ques.no.1 and 2.

PAPER IV (ANAESTHESIA)

Q.1. Fill up the blanks : **[1x10=10]**

- i] Define Ventilator _____.
- ii] _____ x-ray is essential before giving general anaesthesia.
- iii] Valium produces _____ effect on patient.
- iv] _____ should be avoided before giving General Anaesthesia.
- v] Define venflon _____.
- vi] _____ medicine is used for spinal anaesthesia.
- vii] Resuscirator is used for _____.
- viii] In hypertensive patient _____ medicine should be avoided during local Anaesthesia.
- ix] The normal diastolic blood pressure of an adult is _____.
- x] Normal heart rate is _____.

Q.2. Say True or False : **[1x5=5]**

- i] In M.I deep Q waves are produced.
- ii] Sphygmomanometer is used for measuring oxygen pressure.
- iii] Sthethoscope is used for hearing heart sounds only.
- iv] Xylocaine is a type of local anaesthesia.
- v] In squint surgery tropical anaesthesia is given.

Q.3. Write short notes on [any Five] : **[8x5=40]**

- | | |
|--------------------------------------|---------------------------|
| a] Cardiac Arrest & Care | b] Lumbar Puncture |
| c] Pre-requisite before surgery | d] Intensive Care |
| e] Sedation & Respiratory discomfort | f] Preparation of patient |

Q.4. Explain [any Two] : **[12.5x2=25]**

- a] Caudal Anaesthesia
- b] Epidural Anaesthesia
- c] Topical Anaesthesia

Q.5. Explain in detail about precautions to be taken before providing General Anaesthesia to the patient.

OR

Describe in detail the mechanism, classification and techniques of local anaesthetic drug.

[20]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
FIRST YEAR SAMPLE PAPERS
DIPLOMA IN O.T. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER I (ANATOMY & PHYSIOLOGY)

Q.1 Fill up the blanks :- **[1x10=10]**

- a] Mastoid process is related to _____ bone.
- b] The condition in which large amount of glucose is excreted through urine is called _____.
- c] Diabetes mellites is a disease caused by _____ deficiency.
- d] The middle ear communicates with pharynx through the _____.
- e] _____ is the female sex glands.
- f] Middle layer of artery called _____.
- g] The hormones that influences the flow of bile from gall bladder is _____.
- h] Suicidal bags of cell are _____.
- i] Lungs are covered by a closed serous membrane sac called _____.
- j] A.D.H influences the reabsorption of _____.

Q2. Say True or False :- **[1x5=5]**

- a] Joint cavity contain synovial fluids.
- b] Lower part of sternum is known as manubrium sternum.
- c] Over secretion by thyroid gland is called hyperthyroidism.
- d] Liver is the largest gland in body.
- e] Mitrochondria is the power house of a cell.

Q3. Shorts notes on [any Six] :- **[7x6=42]**

- | | |
|-----------------------------|------------------------------------|
| a] Lungs volume | b] Pharynx |
| c] Structure of heart | d] Spleen |
| e] Thyroid gland | f] Structure and function of villi |
| g] Bones of lower extremity | |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Pituitary Gland
- b] Ovary and its function
- c] Formation of urine

Q5. Attempt any one in detail with appropriate diagram **[18]**

- a] Write in detail about the male reproductive system well labelled diagram.
OR
- b] Write in details about process of respiration alongwith all its parts.
\$\$\$\$\$\$

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
FIRST YEAR SAMPLE PAPERS
DIPLOMA IN O.T. TECHNOLOGY



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Write only answers for ques.no.1 and 2.

PAPER II (SURGICAL INSTRUMENTS AND MONITORING)

Q.1. Fill up the blanks : **[1x10=10]**

- i] _____ is used for cardiac Shock.
- ii] Tryphine are used to obtain _____ button from the donors eye.
- iii] Suction machine is used for _____ .
- iv] Endoscope is used for _____ .
- v] Betadine solution is used for _____ during operation.
- vi] OT should be _____ by formaldehyde.
- vii] In IOL generally _____ no. of sutures are used.
- viii] For respiratory comfort _____ is used in an emergency.
- ix] In dead body the _____ are dilated.
- x] Instruments can be sterilised by _____ in case of emergency.

Q.2. Say True or False : **[1x5=5]**

- i] Diazepam is a type of sedative.
- ii] In DCR caliper is not required.
- iii] The instruments can be sterilised by using alcohol.
- iv] Disposable gloves should always be washed with saline before operation.
- v] Production of isoelectric line is an indication of becoming heart inactive.

Q.3. Write in short notes about the instruments used and their care [on any Six] : **[7x6=42]**

- | | |
|-------------------------|------------------------|
| a] Glaucoma | b] Laproscopy |
| c] Tracheostomy | d] Keratoplasty |
| e] Cholecystomy | f] Intraocular Surgery |
| g] Vaginal Hysterectomy | |

Q.4. Explain [any Two] : **[12.5x2=25]**

- a] Cardiac Monitor
- b] Boyle's Apparatus
- c] Endoscope

Q.5. Explain the management and monitoring of Eye procedures for major Operating procedures?

OR

Explain in detail about protection of patient from X-rays and discuss the somatic & genetic effects produced by radiation.

[18]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
FIRST YEAR SAMPLE PAPERS
DIPLOMA IN O.T. TECHNOLOGY



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Write only answers for ques.no.1 and 2.

PAPER III (GENERAL SURGICAL PRINCIPLES)

Q.1. Fill up the blanks : **[1x10=10]**

- i] During squint surgery _____ no. of catgut is usually used.
- ii] Patient should not take any thing orally _____ hours prior to surgery.
- iii] Hemostasis is divided into primary and _____ types.
- iv] _____ and _____ are the screening tests of primary hemostatic system.
- v] Cathartics and frequent _____ should be avoided for patient under appendicitis consideration.
- vi] Oozing of the blood from the capillary can be stopped by using electric or heat _____.
- vii] Suture needles, suture, needle holder etc. should be _____ before use.
- viii] To remove the continuous recurrence of the pus _____ is made.
- ix] The part of the body should be cleaned with _____ before making a incision.
- x] Caliper is used for _____ during the surgery.

Q.2. Say True or False : **[1x5=5]**

- i] Normal platelet count is 1.5 lacs to 4.5 lacs /cumm.
- ii] Plasma coagulation function can be assessed by estimating PTT, PT and TT.
- iii] Superior rectus needle is used during eye surgery.
- iv] Artery clamp is used to stop the circulation of blood.
- v] Patients below 20,000/cumm platelet count have an appreciable incidence of spontaneous bleeding.

Q.3. Write in short notes about [on any Six] : **[7x6=42]**

- | | |
|------------------------|-----------------------------|
| a] Traditional sutures | b] Hemostasis |
| c] Types of suture | d] Post op Dressing |
| e] OT Lighting | f] Types of surgical blades |
| g] Purpose of drain | |

Q.4. Explain [any Two] : **[12.5x2=25]**

- a] Technique of using heat and electric cautery
- b] Method of incision making
- c] Drain formation

Q.5. Write in detail about the various modern techniques of wound closures.

OR

Write in detail about the Preparation of surgical patient.

[18]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
FIRST YEAR SAMPLE PAPERS
DIPLOMA IN O.T. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

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Write only answers for ques.no.1 and 2.

PAPER IV (STERILIZATION AND DISINFECTION ETC.)

Q.1. Fill up the blanks : **[1x10=10]**

- i] _____ is used for fumigating the OT.
- ii] _____ is used for neutralizing the formalin vapours.
- iii] Flaming is _____ method type of sterilization.
- iv] 20lbs pressure in the autoclave rises the temperature to _____ ° C.
- v] _____ solution is used for sterilizing during operation.
- vi] Sterilization in an autoclave is _____ type of sterilization.
- vii] Instruments can be sterilised by _____ in case of emergency.
- viii] _____ radiation kills micro-organisms due to heat generated.
- ix] Sterilization of body fluid are usually done by heating at _____ °C for one hour for several days.
- x] 0.25% chloroform can be used as _____.

Q.2. Say True or False : **[1x5=5]**

- i] Cloths can be sterilized by dry heat method of sterilization.
- ii] In emergency the instruments can be cleaned with spirit and used.
- iii] Instruments should be kept open in an OT and fumigated.
- iv] 0.5% phenol can be used to kill bacteria.
- v] Blunt instruments should always be kept in silicon mat tray.

Q.3. Write in short notes about the instruments used and their care [on any Six] : **[7x6=42]**

- | | |
|--|--|
| a] Sterilization by Radiation | b] Control & Checking of Sterilization |
| c] Sterilization by Coagulation | d] Dry heat method of sterilization |
| e] Sterilization by Filtration | f] Moist heat method of sterilization |
| g] Maintenance of the formalin chamber | |

Q.4. Explain [any Two] : **[12.5x2=25]**

- a] Sterilization at lower temperature
- b] Sterilization of Instrument in emergency
- c] Cleaning of used instruments

Q.5. Explain the process in detail for disinfecting the Operation theatre.

OR

Explain in detail about controlling the spread of infection in the operation theatre.

[18]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN O.T. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER V (SURGICAL PROCEDURES - I)

Q.1. Fill up the blanks : **[1x10=10]**

- i] Transplanting of the cornea is termed as _____.
- ii] Procedure for removing of gall stones is termed as _____.
- iii] Fixing of a rod in case of tibia bone compound fracture is called _____.
- iv] Removal of bleeding haemorrhoids by surgical procedure is called _____.
- v] During squit surgery _____ are dissected.
- vi] Removal of internal structures of eye is called _____.
- vii] To visualize sigmoid colon _____ investigation is performed.
- viii] Removal of thyroid gland is termed as _____.
- ix] Open reduction in orthopaedic means, the manipulation of bone by _____.
- x] Olecranon process is a part of _____ bone.

Q.2. Say True or False : **[1x5=5]**

- i] Chalazion is an abdominal disease.
- ii] Vitrectomy is a procedure followed during brain surgery.
- iii] Thymectomy is a type of G.I Surgery.
- iv] Arthrotomy is a type of Ophthalmic surgery.
- v] Trabeculectomy is the surgery performed for the leg.

Q.3. Write in short about the procedure for [any five] : **[8x5=40]**

- | | |
|--------------------|--------------------------|
| a] Cholecystectomy | b] Sigmoidoscopy |
| c] Canthotomy | d] Keratoplasty |
| e] Amputation | f] Excision of Pterigium |

Q.4. Explain [any Two] : **[12.5x2=25]**

- a] Drainage of abcess in liver region
- b] Breast Biopsy and Mastectomy
- c] Electrical & Fire hazards in OT

Q.5. Explain in detail about precautions to be taken before starting any major surgery.

OR

Describe in detail about Psychological support of surgical patient.

[20]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN O.T. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Do not write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER VI (ANAESTHESIA)

Q.1. Fill up the blanks : **[1x10=10]**

- i] Define Ventilator _____.
- ii] _____ x-ray is essential before giving general anaesthesia.
- iii] Valium produces _____ effect on patient.
- iv] _____ should be avoided before giving General Anaesthesia.
- v] Define venflon _____.
- vi] _____ medicine is used for spinal anaesthesia.
- vii] Resuscirator is used for _____.
- viii] In hypertensive patient _____ medicine should be avoided during local Anaesthesia.
- ix] The normal diastolic blood pressure of an adult is _____.
- x] Normal heart rate is _____.

Q.2. Say True or False : **[1x5=5]**

- i] In M.I deep Q waves are produced.
- ii] Sphygmomanometer is used for measuring oxygen pressure.
- iii] Sthethoscope is used for hearing heart sounds only.
- iv] Xylocaine is a type of local anaesthesia.
- v] In squint surgery tropical anaesthesia is given.

Q.3. Write short notes on [any Five] : **[8x5=40]**

- | | |
|--------------------------------------|---------------------------|
| a] Cardiac Arrest & Care | b] Lumbar Puncture |
| c] Pre-requisite before surgery | d] Intensive Care |
| e] Sedation & Respiratory discomfort | f] Preparation of patient |

Q.4. Explain [any Two] : **[12.5x2=25]**

- a] Caudal Anaesthesia
- b] Epidural Anaesthesia
- c] Topical Anaesthesia

Q.5. Explain in detail about precautions to be taken before providing General Anaesthesia to the patient.

OR

Describe in detail the mechanism, classification and techniques of local anaesthetic drug.

[20]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN O.T. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER VII (SURGICAL PROCEDURES - II)

Q.1. Fill up the blanks : **[1x10=10]**

- i] Craniotomy is done by _____.
- ii] Full form of TURP is _____.
- iii] Full form of D&C is _____.
- iv] Full form of HSG is _____.
- v] Full form of CABG is _____.
- vi] Passage made from ventricle of the brain, draining into G.I tract is called as _____.
- vii] Aneurysmectomy is a type of _____ surgery.
- viii] Orchiectomy is a type of _____ surgery.
- ix] Laminectomy is a type of _____ surgery.
- x] Blepharoplasty is a type of _____ surgery.

Q.2. Say True or False : **[1x5=5]**

- i] Nephrectomy is a type of Genito-urinary surgery.
- ii] Cystostomy is a type of Genito-urinary surgery.
- iii] Endarterectomy is a type of Cardio-Vascular surgery.
- iv] Ventricular shunt is a type of neurological surgery.
- v] Rhinoplasty is a type of plastic surgery.

Q.3. Write in short about the procedure for [any five] : **[8x5=40]**

- | | |
|----------------|---------------------------|
| a] Lithotripsy | b] Vasectomy |
| c] Craniotomy | d] Ventricular shunts |
| e] Liposuction | f] Pediatric Tracheostomy |

Q.4. Explain [any Two] : **[12.5x2=25]**

- a] Vaginal Hysterectomy
- b] Arteriovenous Fistula surgery
- c] Reduction of Nasal Fracture

Q.5. Explain in detail about the process of D&C and precautions to be taken during the procedure.

OR

Explain in detail about Benign and Malignant Tumour. Illustrate precautions to be taken during operating malignant patients.

[20]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN O.T. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER VIII (OPERATION THEATRE ETHICS/DISCIPLINE)

Q.1. Fill up the blanks : **[1x10=10]**

- i] Absence of a medium is called _____.
- ii] In an OT _____ volts of electric supply is provided.
- iii] During GA _____ gas is used.
- iv] _____ gas is required during recovery of the patient from anaesthesia.
- v] Radiation produces genetics and _____ effects on the living tissue.
- vi] Formaldehyde is used for _____ in an OT.
- vii] For arteficial respiration _____ is used in an emergency.
- viii] There are oxygen, nitrogen and _____ gas supply in an OT.
- ix] _____ chemical is highly inflammable in an OT.
- x] Fire can be controlled by _____ in an OT immediately.

Q.2. Say True or False : **[1x5=5]**

- i] Oxygen is a toxic gas.
- ii] Nitrogen is a cold gas.
- iii] Vacuum cannot be used for suction purposes.
- iv] Fire cannot be caused due to chemicals also.
- v] Radiation crosses through Lead.

Q.3. Write in short about the procedure for [any five] : **[8x5=40]**

- | | |
|-------------------------|-------------------------------------|
| a] Radiation hazards | b] Control of an infection in an OT |
| c] Fire in OT | d] Fatigue factors in OT |
| e] Oxygen & Other gases | f] Chemical hazards in an OT |

Q.4. Explain [any Two] : **[12.5x2=25]**

- a] Protection of the patient from radiation
- b] Emergency and Management in case of power failure
- c] Emergency and Management in case of vacuum failure

Q.5. Explain in detail about the behaviour of the technician with the doctors / seniors and the patient.

OR

Explain in detail about the process of assisting and shifting of patient before and after surgery.

[20]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
CERTIFICATE IN E.C.G. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER -Theory (ELECTROCARDIOGRAPHY)

Q.1. Fill up the blanks : **[1x10=10]**

- i] The normal duration of QT interval is _____ .
- ii] The conduction velocity at SA node is _____ .
- iii] Normal average heart rate is _____ .
- iv] According to electrical axis of heart, right axis deviation is from____ .
- v] Red colour lead is applied at _____ during recording of E.C.G.
- vi] Abbreviation RRP stands for _____ .
- vii] V1 to V6 are called _____ leads .
- viii] The normal height of P wave is _____ .
- ix] The normal Cardiac Output is _____ .
- x] The normal speed of the paper while recording of an ECG is _____ .

Q.2. Say True or False : **[1x5=5]**

- i] In Myocardial Infarction deep P waves are produced .
- ii] Heart rate can be counting by counting U waves in one minute.
- iii] The normal ST segment ranges between 2.5mm to 5 mm in height.
- iv] Cardiac output/ Heart rate = Stroke volume .
- v] R Waves illustrates ventricular repolarisation.

Q.3. Write short notes on [any Six] : **[7x6=42]**

- | | |
|--|---|
| a] Unipolar leads | b] Effect of paper Speed during recording |
| c] Myocardial Injury | d] Caliberation of ECG Machine |
| e] BaseLine of ECG | f] Standarisation of ECG Machine. |
| g] Normal route of contraction of an heart | |

Q.4. Explain [any Two] : **[12.5x2=25]**

- a] Significances of P,Q,R,S,T waves and intervals.
- b] ECG features of WPW Syndrome and LGL Syndrome.
- c] Calculation of Heart Rate with the help of ECG graph.

Q.5. Explain various bipolar, unipolar and Augmented leads recorded for an routine 12 lead E.C.G. ?

OR

Explain with the help of an example, calculating electrical axis of an heart ?

[18]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN C.T. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER I (ANATOMY & PHYSIOLOGY)

Q.1 Fill up the blanks: **[1x10=10]**

- a] Diabetes insipidus is due to deficiency of _____ hormone.
- b] Enzyme ptyalin is secreted from _____.
- c] Normal tidal volume is _____ ml.
- d] First heart sound is due to closure of _____ valve.
- e] Nephron is the basic functional unit of _____.
- f] Normal size of RBC is _____ μm & shape of RBC is _____.
- g] Thyroid gland secretes _____ & _____ hormone.
- h] Smallest bone in our body is _____.
- i] Total number of permanent teeth present in adult are _____.
- j] Group of cells similar in structure & function is called _____.

Q2. Say True or False:- **[1x5=5]**

- a] Gall bladder produces bile.
- b] Skeletal muscle are involuntary muscles.
- c] Blood plasma is red in colour.
- d] Saliva contains enzyme amylase.
- e] Lysosome is also called suicidal bag of the cell.

Q3. Shorts notes on [any Six]:- **[7x6=42]**

- | | |
|------------------------|------------------------|
| a] Heart | b] Sub-arachnoid space |
| c] Bones of Upper limb | d] Oropharynx |
| e] Urinary Bladder | f] Muscles |
| g] Scrotum and Testis | |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Renal Excretory System
- b] Classify tissue, write in detail about epithelial tissue
- c] Conduction pathway of heart

Q5. Attempt any one detail with appropriate diagram **(18)**

- a] Write in detail the various enzymes secreted from the GI tract and their functions.
- OR
- b] Write in detail about male reproductive system with the help of appropriate diagrams.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN C.T. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/ use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER II (BASIC FUNDAMENTALS OF CT)

Q1. Fill up the blanks:- **[1x10=10]**

- a] The computer calculates the attenuation value of each picture element called as ____.
- b] The attenuation values are expressed in housefield unit in which water density is equal to ____.
- c] CT was invented by Godfree in the year ____.
- d] Each pixel on CT image represent a small volume element called ____.
- e] Full form of CAT is ____.
- f] The fundamental concept of CT is that internal structures of an object can be reconstructed from ____.
- g] Spiral CT tube must have at least ____ heating capacities.
- h] KvP used for the CT x-ray tube is usually ____.
- i] Full form of EBCT is ____.
- j] Soft tissue have CTN near that of water ____ to ____.

Q2. Say TRUE or FALSE:- **[1x5=5]**

- a] The range of density visualization on particular image is called as window width level.
- b] The intensity of radiation detected does not varies according to attenuation pattern.
- c] Patient couch must be constructed of copper fibre.
- d] X-ray tube is present outside the gantry.
- e] The mean of window width level is called as window level.

Q3. Shorts notes on [any SEVEN]:- **[7x5=35]**

- | | |
|--------------------------------------|----------------------------------|
| a] Components of multi slice scanner | b] X-Ray tube of present scanner |
| c] Operator Console | d] Gas detectors |
| e] Window width level | f] Planes of Body |
| g] Image Processing | h] Gantry position protocols |

Q4. Explain [any THREE]:- **[10x3=30]**

- a] Advantages and disadvantages of IVth generation CT scanner.
- b] Advantages and disadvantages of IInd generation CT scanner
- c] Principle of SCT.
- d] Image reconstruction

Q5.a] Explain in detail about the difference CCT and SCT.

OR

- b] Explain Mechanical Safety measures for using of CT Unit in detail.

[20]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN C.T. TECHNOLOGY



TIME : Three Hours **MAX.MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/ use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER III (APPLIED PHYSICS FOR CT SCAN)

Q1. Fill up the blanks:-

[1x10=10]

- a] Rotating X-Ray tube and detector system is present in ____.
- b] Gas ionization detectors use ____ gas at a very high pressure.
- c] Transference of heat in case of solids is called ____.
- d] Full form of CsI scintillation material is ____.
- e] $CdWO_4$ is a type of _____ material.
- f] Stationary anode tube of CT Scanners operates at 120Kvp and ____mA.
- g] Picker 600 model is a ____ generation scanner.
- h] CT x-ray tube is cooled by a process of radiation, conduction and ____.
- i] Defect produced due to detector efficiency is a type of ____ artefact in CT.
- j] Detectors are of three types - scintillation, gas and ____.

Q2. Say TRUE or FALSE:-

[1x5=5]

- a] 1.2 to 2.1mm of aluminium filter is used for 71 to 150Kvp in CT Tubes.
- b] Defect produced by Off-focus X-Ray radiation is a type of magnetic artefact in CT.
- c] In IInd and IIIrd generation CT scanners, projection data are collected as a fan beam.
- d] Image can be magnified by the scanners pre-processing.
- e] Defect produced due to Vibration of gantry is a type of mechanical artefact in CT.

Q3. Shorts notes on [any SEVEN]:-

[7x5=35]

- | | |
|---------------------------|-------------------------------------|
| a] Luminiscence | b] Computer Central Processing Unit |
| c] Off-Focus radiation | d] Inverse Square Law |
| e] X-Ray beam Collimation | f] Filter function |
| g] Detectors | h] Scan data rearrangement |

Q4. Explain [any THREE]:-

[10x3=30]

- a] Features of Spiral CT
- b] Factors controlling rate of conduction of heat.
- c] Linearization
- d] Differentiate between Rotating anode tubes and Stationary anode tubes

Q5.a] Explain in detail about the mechanical artefacts produced in the image.

OR

- b] Explain in detail about the electronic artefacts produced in the image.

[20]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN C.T. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/ use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER IV (TECHNIQUES FOR CT SCAN)

Q1. Fill up the blanks:- **[1x10=10]**

- a] _____ G 'Chiba' needle is used for all FNAC.
- b] Full form of CECT is _____.
- c] CECT is used for identification of _____ lesions and blood vessels.
- d] In CCT gantry scan field is equal to _____ cm.
- e] _____ scanning is the choice for aneurysm.
- f] Full form of HOCM is _____.
- g] Speed of the patient table in CCT is _____ mm/sec.
- h] In CCT gantry tilt ranges from _____ to _____.
- i] Focal spot to detector distance is _____ mm in CCT.
- j] Full form of LCNB is _____.

Q2. Say TRUE or FALSE:- **[1x5=5]**

- a] Sella turcica is studied with contiguous 8mm sections in coronal plane.
- b] Topogram is also called as scanogram.
- c] In CT of orbit best orbits are obtained by using 512X512 matrix.
- d] The entire mediastinum is scanned in a cephalo-cauded direction.
- e] In topogram, CT tube position is horizontal and the patient is vertical.

Q3. Shorts notes on [any SEVEN]:- **[7x5=35]**

- | | |
|-----------------------------|--|
| a] Oblique MPR Images | b] Knee/ Lower limb CT Technique |
| c] CT Techniques for GB | d] Sagittal Multi-Planer Reformations Images |
| e] CT Techniques for Spleen | f] CT Techniques for Pancreas |
| g] CTGB of Pelvic masses | h] CT Guided Aspiration Biopsy Procedure |

Q4. Explain [any THREE]:- **[10x3=30]**

- a] CECT Technique for Larynx and Hypopharynx.
- b] CT Techniques for the Kidneys.
- c] Whole body CCT Scan Protocols
- d] Guidelines for I.V. Contrast administration

Q5.a] Explain Axial and Coronal scans for Aero-Digestive Tract and the Neck in detail.

OR

- b] Explain the techniques for the CT scan for the cervical Spine in detail.

[20]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN M.R.I. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER I (MRI ANATOMY)

Q.1 Fill up the blanks :- **[1x10=10]**

- a] The walls and roof of nasopharynx are coated with _____ tissue.
- b] The shield shaped thyroid cartilage is superior to the _____ cartilage.
- c] Normal breast tissue consists of fatty glandular and _____ elements.
- d] The normal diameter of mid descending aorta is _____ cm.
- e] Liver is divided into right and left _____ lobes.
- f] Spleen measures from _____ cm in length.
- g] The anterior wall of the vagina is approximately _____ cm long.
- h] Ovaries are paired organ lying on either side of the uterus within the _____.
- i] Normal ovaries measures _____ cm in postmenopausal woman.
- j] Mean diameter of CBD on T1W1 is _____ mm.

Q2. Say True or False :- **[1x5=5]**

- a] Tears are secreted by exocrine gland.
- b] The spinal cord consists of white matter on the surface.
- c] Each ovary is attached along its posterior margin by a short fold of peritoneum.
- d] Wall of urinary bladder is made up of epithelial cells.
- e] In women of reproductive age, the uterus is normally 36 to 59 cm in length.

Q3. Shorts notes on [any Six] :- **[7x6=42]**

- | | |
|------------------------------|------------------------|
| a] Heart Structure | b] Sub-arachnoid space |
| c] Bones of Upper limb | d] Nasopharynx |
| e] Ureters & Prostrate Gland | f] Muscles |
| g] Scrotum and Testis | |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Cricoid and Thyroid Cartilage
- b] Structure and Function of Liver
- c] Anatomy of Female Pelvis

Q5. Attempt any one in detail with appropriate diagram **[18]**

- a] Write in details about Route of Normal contraction of heart in detail. Illustrate your answer with the help of suitable diagram.

OR

- b] Write in details about process of digestion and assimilation of food in the human body. Illustrate your answer with the help of suitable diagram.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN M.R.I. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/ use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER II (BASIC FUNDAMENTALS AND COMPONENTS OF MRI)

Q.1 Fill up the blanks :- **[1x10=10]**

- a] As small sized water molecules move too fast have longer ____.
- b] T1 relaxation time at field strength of 1Tesla for CSF is ____.
- c] ____ is the spectroscopic study of magnetic properties of the nucleus of the atom.
- d] T1 relaxation time at field strength of 1Tesla for ____ is 800.
- e] Relative value of mobile hydrogen nuclei spin density of ____ is 98.
- f] The spin density of spinning nuclei is ____ to amplitude of FID.
- g] MR imaging parameters are ____, T1 relaxation time and T2 relaxation time.
- h] Full form of T1 is ____.
- i] T1 is significantly longer than T2 except in very ____ solution.
- j] ____ is measured by applying a 90° pulse and than observing the rate of decay of Mxy.

Q2. Say True or False :- **[1x5=5]**

- a] Relative value of mobile hydrogen nuclei spin density of muscle is 100.
- b] In passive shimming 10 to 12 current carrying shim coils are placed in the bore of magnet.
- c] TE stands for Echo time.
- d] The cryostat electrically insulates the liquid helium.
- e] Relaxation is the process that occur after terminating the RF pulse.

Q3. Shorts notes on [any Six] :- **[7x6=42]**

- | | |
|--------------------|----------------------------|
| a] Gradient Echo | b] Larmor Frequency |
| c] Slice Selection | d] Superconducting Magnets |
| e] Eddy Current | f] Phase encoding |
| g] Spin Density | |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Why T1 is longer in strong magnetic field.
- b] Relaxation & Eddy Current
- c] Differentiate between T1 and T2

Q5. Attempt any one in detail with appropriate diagram **[18]**

- a] Write in details about image reconstruction and display in MRI.
- OR
- b] Write in details about resonance and excitation of RF pulse in MRI.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN M.R.I. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER III (ROLE OF TECHNOLOGIST)

Q.1 Fill up the blanks :- **[1x10=10]**

- a] In MRI, localised heating should be no greater than 38⁰C in the _____.
- b] _____ should be used to check the presence of any ferromagnet present with the patient.
- c] A pacemaker contains a relay switch called a _____.
- d] _____ is used to excite the hydrogen protons in the body tissues during MRI.
- e] The energy absorbed by the protons is dissipated as _____.
- f] RF is being an oscillating _____ and magnetic field.
- g] In MRI, localised heating should be no greater than 40⁰C in the _____.
- h] For smooth running of the machine _____ should be done.
- i] To ensure constant poer supply _____ should be installed.
- j] Clinical history of the _____ is essential before undergoing MRI.

Q2. Say True or False :- **[1x5=5]**

- a] Most heart valves are ferromagnetic, so they create problem in MRI.
- b] In MRI, maximum whole body temperature rise should be less than 1⁰C.
- c] Patient with cardiac pacemaker should not undergo MRI examination.
- d] Ferromagnets are strongly attracted by the magnetc field.
- e] In MRI, localised heating should be no greater than 39⁰C in the trunk.

Q3. Shorts notes on [any Six] :- **[7x6=42]**

- | | |
|-------------------------|-----------------------|
| a] Request form for MRI | b] Quality Control |
| c] Biological Effect | d] Workload assesment |
| e] Periodic Check-ups | f] Power Back-up |
| g] Market survey | |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Using MRI during pregnancy
- b] Grounds for refusal for the patient undergoing MRI
- c] Radiofrequency effects of magnetic field.

Q5. Attempt any one in detail with appropriate diagram **[18]**

- a] Write in details about attraction effects of magnetic field in MRI.
OR
- b] Write in details about the role of technologist in case of projectiles, Intracranial aneurysm clips and cardiac pacemaker patients.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN M.R.I. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/ use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER IV (MR TECHNIQUES AND PROTOCOL)

Q.1 Fill up the blanks :- **[1x10=10]**

- a] Proton density of gray matter at 1.5 Tesla is _____.
- b] The image is subdivided into a matrix of individual picture elements or _____.
- c] Production of an MR image consist of signal acquisition and image _____.
- d] Blood flow velocity and direction affects the contrast _____.
- e] In MRI, TR is the _____ protocol.
- f] Image _____ are produced due to anatomical motion of the tissue.
- g] The data collected during the _____ phase is not in the form of an image.
- h] Relaxation time T2 of gray mattar at 1.5 Tesla is _____ ms.
- i] Longitudinal magnetization cannot directly produce an _____ signal.
- j] Relaxation time T1 of CSF at 1.5 Tesla is _____ ms.

Q2. Say True or False :- **[1x5=5]**

- a] The intensity of the RF signal at the time of the echo event is determined by proton density.
- b] Design of the MR imaging equipment is the characteristics of image quality.
- c] A voxel represents a discrete sample of tissue.
- d] TR and TE are the parameters which can be used to adjust the contrast sensitivity to a specific tissue.
- e] A MR image is an image of magnetic nuclei.

Q3. Shorts notes on [any Six] :- **[7x6=42]**

- | | |
|--------------------------|-------------------------|
| a] Magnetic Nuclei | b] MR Imaging Parameter |
| c] Tissue Charcteristics | d] RF Pulse |
| e] Magnetised Tissue | f] Gradient Sequences |
| g] Noise energy | |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Contrast Sensitivity
- b] Acquisition Time
- c] Artefacts and distortion of Image

Q5. Attempt any one in detail with appropriate diagram **[18]**

- a] Write in details about magnetized tissue and magnetic nuclei.
- OR
- b] Write in details about visualized characteristics of Magnetic resonance image.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN CATH. LAB. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/ use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER I (CARDIOVASCULAR AND GENERAL ANATOMY)

Q.1 Fill up the blanks :- **[1x10=10]**

- a] Inner serous layer of the pericardium is called as _____.
- b] Thyroid gland secretes _____ & _____ hormone.
- c] Normal average Heart rate is _____.
- d] Normal shape of WBC is _____.
- e] Late activation of the heart takes place at _____ and _____.
- f] Valve between Left atrium and left Ventricle is called as _____.
- g] Normal blood volume in an adult can be calculated as _____.
- h] Smallest bone in our body is _____.
- i] Total number of vertebrae present in adult are ____.
- j] Group of _____ similar in structure & function is called tissue.

Q2. Say True or False :- **[1x5=5]**

- a] Gall bladder secretes bile.
- b] Skeletal muscle are involuntary muscles.
- c] All Blood cells are pale yellow in colour.
- d] Saliva contains enzyme ptylin.
- e] Mitochondria is also called suicidal bag of the cell.

Q3. Shorts notes on [any Six] :- **[7x6=42]**

- | | |
|---------------------------------------|-----------------------------------|
| a] Circle of Willis | b] Blood Caoagulation |
| c] Bones of upper limb | d] Anterior pituitary gland |
| e] Structure of heart | f] Endocrine function of Pancreas |
| g] Function and constituents of Blood | |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Conduction pathway of heart
- b] Systemic Circulation of heart
- c] Femoral Artery and its termination

Q5. Attempt any one in detail with appropriate diagram **[18]**

- a] Write in details about anatomical structure of respiratory organs. Illustrate your answer with the help of suitable diagram.

OR

- b] Write in details about production and circulation of CSF. Describe the antomical structure of spine with suitable cross-section diagram.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN CATH. LAB. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER II (MICROBIOLOGY AND PATHOLOGY)

Q.1 Fill up the blanks :- **[1x10=10]**

- a] Rothera's test is done to detect _____ in urine.
- b] Chronic passive venous congestion of liver is also called as ____ liver.
- c] _____ is deposited in fatty change of heart.
- d] Most of the organism prefer slightly alkaline medium ranging between _____.
- e] Nutrient broth is slightly _____ in colour.
- f] Time period between the entry of infection to appearance of the symptoms is ____ period.
- g] Osteoclasts leads to bone _____.
- h] Normal shape of RBC is _____.
- i] Macrophages kill micro-organism by the process called _____.
- j] Full form of IHD is _____.

Q2. Say True or False :- **[1x5=5]**

- a] Pasteurella is a gram negative organism.
- b] Cholera is transmitted through faeco- oral route.
- c] B-lymphocytes are released by plasma cells.
- d] Hot air oven is used to sterilizing glasswares.
- e] Petri dishes can not be used for cultivation of bacteria.

Q3. Shorts notes on [any Six] :- **[7x6=42]**

- | | |
|---|-----------------------------|
| a] Leukaemia | b] Classification of tumour |
| c] Metabolism | d] Waste management of lab. |
| e] Gram +ve bacteria | f] Causes of Spelanomegaly |
| g] Factors controlling Bacterial growth | |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Mode of exit and transmission of diseases
- b] Differentiate between benign and malignant types of neoplasia.
- c] Classify types of Anaemia according to their aetiology & morphology of cells

Q5. Attempt any one in detail with appropriate diagram **[18]**

- a] Write in details about various methods of dry and moist heat type of sterilization. Illustrate your answer with the help of suitable diagram.

OR

- b] Write in details about microscopic examination of urine, its constituents, normal and abnormal appearance with appropriate diagrammatical representation.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN CATH. LAB. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER III (TECHNIQUES AND PROCEDURE IN CATH. LAB.)

Q.1. Fill up the blanks : **[1x10=10]**

- i] The normal duration of PR interval is _____ .
- ii] The conduction velocity at AV node is _____ .
- iii] Full form of CABG is _____ .
- iv] According to electrical axis of heart, left axis deviation is from _____ .
- v] Black colour lead is applied at _____ during recording of E.C.G.
- vi] Abbreviation RRP stands for _____ .
- vii] avR, avL and avF are called _____ leads .
- viii] The normal height of T wave is _____ .
- ix] Full form of COPD is _____ .
- x] The normal speed of the paper while recording of an ECG is _____ .

Q.2. Say True or False : **[1x5=5]**

- i] In MI, deep Q waves are produced .
- ii] Heart rate can be counting by counting QRS intervals in one minute.
- iii] The normal QT interval should be less than 50% of RR interval.
- iv] Cardiac output = Stroke volume X Heart rate.
- v] T Waves illustrates ventricular repolarisation.

Q.3. Write short notes on [any Six] : **[7x6=42]**

- a] CABG
- b] Pre-catheterization protocol.
- c] Perforation of Heart
- d] Cardiac Monitor
- e] Ventricular Arrythemias
- f] Femoral arteriography
- g] Normal route of contraction of an heart with their velocities.

Q.4. Explain [any Two] : **[12.5x2=25]**

- a] Emergencies in Cath. Lab. & its management
- b] Prevention of Myocardial Infarction during Catheterization.
- c] Significances of P,Q,R,S,T waves and intervals.

Q.5. Explain in detail the duties and responsibilities of Cath. Lab. Technicians.

OR

Explain in detail about the after care of the patient after cardiac catheterization.

[18]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SAMPLE PAPERS
DIPLOMA IN CATH. LAB. TECHNOLOGY



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER IV (ADMINISTRATION AND MANAGEMENT IN CATH. LAB.)

Q.1. Fill up the blanks : **[1x10=10]**

- i] _____ is used for scrubbing.
- ii] Supply of sterile cloths for cath. lab. is provided by _____ department.
- iii] The instruments should be sterilized with _____ in case of emergency.
- iv] _____ is used for fumigating the Cath. Lab..
- v] Flaming is _____ method type of sterilization.
- vi] _____ is used for neutralizing the formalin vapours.
- vii] In _____ room the patients are kept after undergoing any cardiac procedure.
- viii] _____ radiation kills micro-organisms due to heat generated.
- ix] 0.25% chloroform can be used as _____.
- x] The record for the balance stock of consumables are kept in _____ register.

Q.2. Say True or False : **[1x5=5]**

- i] Handing over and taking over is a part of inventory control.
- ii] Nitrous oxide gas is required in the cath. lab.
- iii] Budgeting is a part of finance.
- iv] Cloths can be sterilized by dry heat method of sterilization.
- v] Blunt instruments should always be kept in silicon mat tray.

Q.3. Write short notes on [any Six] : **[7x6=42]**

- | | |
|---------------------------|---------------------------------|
| a] Power Bach-Up | b] Septic Room |
| c] Store Keeping | d] Stock Management |
| e] Scrubbing room | f] Principles of Administration |
| g] Cath. Lab. Supervision | |

Q.4. Explain [any Two] : **[12.5x2=25]**

- a] Duties and role of technical staff.
- b] Maintenance of sterility in Cath. Lab.
- c] CSSD- role and working

Q.5. Explain in detail about the maintanance of all major and minor equipments used in Cath. Lab.

OR

Explain with the help of a diagramatic sketch the organisation of the Cath. Lab. in detail.

[18]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
FIRST YEAR SAMPLE PAPERS
DIPLOMA IN DENTAL ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER -I (Anatomy & Physiology including Histology)

Q1. Fill up the blanks:- **[1x10=10]**

- a] The tooth is held in the bone by means of a set of fibrous ligament known as _____.
- b] _____ are the tasselled or unbraided prejections extending from DEJ into the enamel.
- c] In dry ground section of the root dentin a granular layer is seen adjacent to cementum known as _____.
- d] Skull is also known as _____.
- e] Corrugator supercilli is a muscle of _____.
- f] The junction between calcified and uncalcified dentin is called _____.
- g] Opposite of lateral is _____.
- h] Normal tidal volume is _____.
- i] Write an example of exocrine gland _____.
- j] Blood is a _____.

Q2. Identify the teeth according to FDI system:- **[1x5=5]**

- a] 42
- b] 65
- c] 25
- d] 84
- e] 38

Q3. Shorts notes on [any SEVEN]:- **[7x5=35]**

- | | |
|--------------------------------|--------------------|
| a] Tissue | b] Primary Dentin |
| c] Incremental line of retzius | d] Maxilla |
| e] Artery, Vein & capillary | f] Enamel Spindles |
| g] Theracic cage | i] Larynx |

Q4. Explain [any THREE]:- **[10x3=30]**

- a] Fibres of periodontal ligament Temporo Mandibular Joint
- b] Pulp stones and denticles Enamel Lamllae
- c] Maxillary division of Trigeminal nerve
- d] What is a cell? Describe its structure and functions

Q5.a] Write in detail about the anatomy of mandible with a suitable diagram?

OR

- b] Draw and describe chambers of heart, Explain pulmanary circulation?

[20]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
FIRST YEAR SAMPLE PAPERS
DIPLOMA IN DENTAL ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Do not write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER -II (Pathology and Bacteriology)

Q1. Fill up the blanks:- **[1x10=10]**

- a] Apical periodontal cyst is _____ cyst.
- b] _____ is an anomaly characterized by fold of excess tissue on inner mucosal aspect of lip.
- c] Mesiodens is type of _____ teeth.
- d] Fluorosis depend upon presence of _____ in water supply.
- e] The injection injected in muscles are termed _____ injection.
- f] Vit _____ are fat soluble.
- g] Mac-conkey agar is type of _____ medium.
- h] Based upon presence or absence of direct communications between pulp and oral environment, the pulpitis is _____ & _____.
- i] Hypnotic drug at lower dose acts as _____.
- j] _____ drug causes discolouration of developing teeth.

Q2. Say TRUE or FALSE:- **[1x5=5]**

- a] Fordyce's granules are collection of sebaceous glands in oral cavity.
- b] The primary site of drug metabolism is kidney.
- c] Micrognathia means small tongue.
- d] Fluoride alter tooth surface to prevent dental caries.
- e] Nutrient Agar is best medium for mycobacterium growth.

Q3. Shorts notes on [any SEVEN]:- **[7x5=35]**

- | | |
|------------------------|------------------------------------|
| a] Adverse drug effect | b] Identification of Bacteria |
| c] Dentrifrices | d] Regressive alterations of teeth |
| e] Fungi | f] Synergism & Antagonism |
| g] Xerotomia | i] Impacted teeth |

Q4. Explain [any THREE]:- **[10x3=30]**

- a] Techniques of local Anaesthesia
- b] Cleft lip & Cleft palate
- c] Developmental disturbances in shape of teeth
- d] Classification of dental caries

Q5.a] Classify Non-opiod Analgesic and describe salicylates in detail.

OR

- b] Describe in detail the developmental anomalies of tongue.

[20]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
FIRST YEAR SAMPLE PAPERS
DIPLOMA IN DENTAL ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER -III (Food Nutrition and Radiology)

Q1. Fill up the blanks:- **[1x10=10]**

- a] Radiation cause _____ of chromosomes.
- b] _____, _____ are used to intensify the image & reduce the exposure time.
- c] _____ filters are used for filtration.
- d] _____ films are used when patient cannot open the mouth.
- e] _____ is a three dimensional curved zone where structures are clearly seen.
- f] Monitoring of X-radiation can be done by _____.
- g] Radiolucent means appear _____ on radiographs.
- h] Protein constitute about _____ % of the body weight.
- i] Most of the body fat in the adipose tissue is in the form of _____.
- j] _____ vitamin participates in indispensable for the normal vision.

Q2. Say TRUE or FALSE:- **[1x5=5]**

- a] Bite-wing X-rays are used to see foreign bodies in jaws
- b] Blood forming cells are most susceptible to radiations.
- c] Copper apron can reduce radiation hazard.
- d] The recommended daily intake of vitamin A is 750 micrograms.
- e] Nutritionally important forms of vitamin D in man are calceferol and cholecalciferol.

Q3. Shorts notes on [any SEVEN]:- **[7x5=35]**

- a] Personal Monitoring
- b] Bisecting technique
- c] Lethal dose
- d] Balanced Diet
- e] Fluorine- Deficiency and excess
- f] Functions of Fat
- g] Vitamin B deficiency
- h] Protection of the patient and operator against radiations

Q4. Explain [any THREE]:- **[10x3=30]**

- a] Faults in the radiograph
- b] Basic apparatus of hot cathode tube.
- c] Function, deficiency diseases and prevention of Vitamin D.
- d] Function, sources, absorption and deficiency diseases of Calcium.

Q5.a] What is an X-ray film. Write about its composition and various X-ray films according to ANSI. Write in detail about Intraoral films?

OR

- b] Explain in detail about various vitamin deficiency disease caused in an individual ?

[20]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN DENTAL ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Do not write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER II (Dental Health Edu. Health Dentistry Preventive Dentistry)

Q1. Fill up the blanks:- **[1x10=10]**

- a] _____ is present in tea leaves and potato.
- b] Margin of the gingiva has reached towards the apex and cementum is exposed it is called _____.
- c] Dentrifice contains an anticalculus agent such as _____ .
- d] Contact of the upper and lower teeth in any jaw position is called _____.
- e] _____ can be used in type two gingival embrasure.
- f] _____ connects head and handle of the toothbrush.
- g] _____ is also called as sulcus cleaning method.
- h] Acidity causes _____ of teeth.
- i] _____ causes extrinsic stains.
- j] Enamel contains _____ flouride than dentin.

Q2. Say True or False:- **[1x5=5]**

- a] Overzealous brushing leave the teeth sparking clean.
- b] Irrigation devices are used to remove unattached plaque and debirs.
- c] Handle is the working end of a tooth brush.
- d] High level of flouride causes osteosclerosis and flourosis.
- e] Attrition effects the cervical margin of the teeth.

Q3. Shorts notes on [any SEVEN]:- **[7x5=35]**

- | | |
|-------------------------------------|----------------------------|
| a] Dietary control of dental caries | b] Pit and Fissure sealant |
| c] Disclosing agent | d] Dental floss |
| e] Materia alba | f] Dental stains |
| g] Gingivitis | i] Calculus and its types |

Q4. Explain [any THREE]:- **[10x3=30]**

- a] Effects of wrong tooth brushing.
- b] Malocclusion and its classification.
- c] Classify the flourides and write about knutson techniques.
- d] Role of a Dental Hygienist.

Q5.a) What is a tooth brush, what are its parts, Write in detail about its types?

OR

b) What is a tooth brush, Write in detail about the various brushing techniques?

[20]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN DENTAL ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Do not write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER III (O.R.Tech., C. Assi. & Dental Mat., Ethics, Orientation in Dentistry)

Q1. Fill up the blanks:- **[1x10=10]**

- a] Insect wax is _____ .
- b] In _____ position, operator stands directly behind the patient.
- c] Surface of DE junction is _____ .
- d] Electric pulp tester is used to determine the vitality of _____.
- e] The chemical added to decrease the setting time is called _____.
- f] _____ stress results when two sets of forces are directed towards each other in same direction.
- g] _____ shape of cavity provides resistance.
- h] Surface away from midline is called _____ surface.
- i] Most hand instruments are composed of three parts _____, _____ & _____.
- j] _____ enzyme is present in saliva.

Q2. Say True or False:- **[1x5=5]**

- a] Metal that can be drawn readily into wire is said to be ductile.
- b] Type-II gypsum product is Dental stone.
- c] Bevel is used in silver amalgam.
- d] Silicate cement have anticariogenic properties.
- e] Tarnish is surface discoloration of metal or loss of finish or lusture.

Q3. Shorts notes on [any SIX]:- **[7x6=42]**

- | | |
|--|---------------------|
| a] Silver amalgam | b] Microleakage |
| c] Mouth prop | d] Mercury toxicity |
| e] Tofflemire | f] Recurrent caries |
| g] Maintenance of air rotor hand-piece | |

Q4. Explain [any TWO] **[12.5x2=25]**

- a] Moisture control
- b] Sterilization in dental office
- c] Common causes of failure of irreversible hydro colloid impression material.

Q5.a) Classify impression materials and describe in detail ZnoE impression paste.

OR

- b) Classify dental cements and describe in detail GIC

[18]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
FIRST YEAR SAMPLE PAPERS
DIPLOMA IN PHYSIOTHERAPY ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER II (PHYSICS & PATHOLOGY)

Q.1 Fill up the blanks: **[1x10=10]**

- a] Full form of SWD is _____.
- b] Faradism is applied in _____ condition.
- c] Galvonism is applied in _____ condition.
- d] IFT and TENS acts on _____ mechanism.
- e] Pain is produced by _____ substances.
- f] _____ is a type of SWD.
- g] Synovial fluid is present between _____.
- h] Function of menisci is _____.
- i] Bones are covered by _____.
- j] _____ is negative in charge.

Q.2. Say True or False:- **[1x5=5]**

- a] Cathode is negative in charge.
- b] Cranium is related to spinal cord.
- c] Stretch is related to ROM.
- d] Wax decreases strength.
- e] UV Radiation increases the infection level.

Q3. Shorts notes on [any Six]:- **[7x6=42]**

- | | |
|--------------|---------|
| a] CT | b] IMT |
| c] IRR | d] TENS |
| e] Faradism | f] IFT |
| g] Galvonism | |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Wax therapy
- b] Ultrasound
- c] Short Wave Diathermy

Q5. Attempt any one detail with appropriate diagram **(18)**

- a] Draw a labeled diagram to explain the pulley system required for various physiotherapeutic exercises.

OR

- b] Write in detail about cryotherapy.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
FIRST YEAR SAMPLE PAPERS
DIPLOMA IN PHYSIOTHERAPY ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER IV (PHYSIOTHERAPY & REHABILITATION)

Q.1 Fill up the blanks: **[1x10=10]**

- a] Lymphatic vessels drains into ____.
- b] ____ collects blood from the lower limb to heart.
- c] Superfacial lower limb pulsation seen in ____.
- d] Carpel tunnel syndrome leads to ____ nerve injury.
- e] Saturday night palsy is related to ____ nerve.
- f] Claw hand is related to ____ nerve.
- g] Foot drop is related to ____ nerve.
- h] Swelling is also termed as ____.
- i] Bending of the joint is called as ____.
- j] Straightening of the joint is called as ____.

Q.2. Say True or False:- **[1x5=5]**

- a] Fever is a contraindication for electrotherapy.
- b] Hypertension is a contraindication for exercise therapy.
- c] TENS is a healing modality.
- d] Sweating is a tool for exercise therapy.
- e] Hypersensitivity indication for massage.

Q3. Shorts notes on [any Six]:- **[7x6=42]**

- | | |
|------------------------------------|-----------------------|
| a] Physiological effect of Massage | b] Types of Exercise |
| c] Therapeutic effect of Massage | d] Types of Streching |
| e] Contraindication of Massage | f] Types of postures |
| g] Indication for Massage | |

Q4. Explain [any Two] :- **[12.5x2=25]**

- a] Lymphatic System
- b] Spinal Cord and Vertebral Column
- c] Circulatory System

Q5. Attempt with appropriate diagram **(18)**

Describe in detail about various rehabilitation exercises to be performed and indicate the conditions.

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN PHYSIOTHERAPY ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER II (Physiotherapy in Surgical Conditions)

Q.1 Fill up the blanks: **[1x10=10]**

- a. What is CHD _____
- b. What is HCM _____
- c. Harkening of artery _____
- d. Severe pain & tightness on sternum _____
- e. What is MI _____
- f. GIN _____ coronary vessels
- g. PDA is _____
- h. VSD is _____
- i. ASD is _____
- j. TOF is _____ congenital heart disease.

Q2. Say True or False:- **[1x5=5]**

- a. Pus in pleural cavity is emphysema
- b. Air in pleural cavity is pneumothorax.
- c. Decortication is heart surgery.
- d. Spirometer improve respiratory rate.
- e. Pulse rate heart rate are same.

Q3. Shorts notes on [any Six]:- **[7x6=42]**

- a. Define humidification
- b. Role of shoulder exercise
- c. Breathing exercise
- d. Pneumothorax
- e. Hydro thorax
- f. Pyo thorax
- g. Empyema.
- h. Emphysema

Q4. Explain [any Two] :- **[12.5x2=25]**

- a. Decortication
- b. Thoracotomy
- c. Pre operative investigations of surgery

Q5. Attempt with appropriate diagram **(18)**

Describe in detail Inter costal drainage
or
Describe in detail Anatomy of thorax (Lumps Heart)

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN PHYSIOTHERAPY ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Donot write/ use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER III (Obstetrics, Gynaecological, Psychiatry Conditions)

- Q.1 Fill up the blanks:** [1x10=10]
- What is DRA _____
 - What is SPD _____
 - Less than 3 times bower motion is _____
 - Remover of faeces is _____
 - Removal of urine is _____
 - High protein oedema in tissues _____
 - Cessation of menstruration _____
 - Lymphatic massage improve _____
 - Contraction of transverse abdomen is _____ exercise.
 - Water based exercise called _____ classed.
- Q2. Say True or False:-** [1x5=5]
- Cardiovascular disease is biggest killer of post menopausal women.
 - Night sweat is neuro symptom
 - Osteoporosis is vascular symptom.
 - Psycho sexual issue is gyanaecological problem.
 - Child birth is emotions crisis.
- Q3. Shorts notes on [any Six]:-** [7x6=42]
- Diastasis rectos abdominis
 - Symphysis pubis dysfunction
 - Nerve compression syndrome
 - Puerperyum
 - Tens in labor
 - Antenatal classes
 - Post natal classes
 - Aquatic classes.
- Q4. Explain [any Two] :-** [12.5x2=25]
- Stages of labor
 - Types of exercise (In Pregnancy)
 - Menopause
- Q5. Attempt any ONE with appropriate diagram** (18)
- Mental retardation –Cause Clinical Feature, Treatment
 - Physiotherapy – Types/ Complication/ Benefits
- *****

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN PHYSIOTHERAPY ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____
NOTE: Attempt all questions. Internal choice is provided.
Donot write/ use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER IV (Radiology & Pharmacology)

Q1. Fill up the blanks:- **[1x10=10]**

- a] Radiation cause _____ of chromosomes.
- b] _____, _____ are used to intensify the image & reduce the exposure time.
- c] Vit _____ are fat soluble.
- d] _____ drug causes discolouration of developing teeth.
- e] Hypnotic drug at lower dose acts as _____.
- f] Monitoring of X-radiation can be done by _____.
- g] Radiolucent means appear _____ on radiographs.
- h] X-Rays are _____ types of waves.
- i] For fracture in the lumbar spine _____ view is preferred.
- j] For fracture in lower one third of tibia bone _____ view should be performed.

Q2. Say TRUE or FALSE:- **[1x5=5]**

- a] Skyline view for patella is done to visualise Knee joint.
- b] Calcium strengthens the bones only.
- c] Copper is a mineral.
- d] Calcaneum spur is a type of extra growth of tibia.
- e] Nutritionally important forms of vitamin D in man are calciferol and cholecalciferol.

Q3. Shorts notes on [any SEVEN]:- **[7x5=35]**

- | | |
|--|------------------------|
| a] Adverse drug effect | b] Trans lateral views |
| c] Xylocaine | d] Balanced Diet |
| e] Structure of X-Ray film | f] Functions of Fat |
| g] Vitamin B deficiency | |
| h] Protection of the patient and operator against radiations | |

Q4. Explain [any THREE]:- **[10x3=30]**

- a] Faults in the radiograph
- b] Drugs acting on CNS
- c] Function, deficiency diseases and prevention of Vitamin D.
- d] Function, sources, absorption and deficiency diseases of Calcium.

Q5.a] What is an X-ray film. Write about its composition and various X-ray films according to ANSI. Write in detail about Intraoral films?

OR

- b] Explain in detail about various x-ray view to be performed in case of cervical bone injury in an emergency and its management?

[20]

INSTITUTE OF PARA MEDICAL TECHNOLOGY
NEW DELHI-74
SECOND YEAR SAMPLE PAPERS
DIPLOMA IN PHYSIOTHERAPY ASSISTANT



TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

NOTE: Attempt all questions. Internal choice is provided.
Do not write/use Red Ink for writing answers.
Write only answers for ques.no.1 and 2.

PAPER V (Orthopaedics and Geriatrics)

- Q.1 Fill up the blanks:** **[1x10=10]**
- a. Muscle wasting is called as _____
 - b. Hypovolaemic shock caused by _____
 - c. Haematoma is result of _____
 - d. ARDS is caused by _____ Embolism.
 - e. Fracture of shaft of humerus leads _____ palsy.
 - f. _____ reduce muscle spasm.
 - g. _____ gives analysis effect.
 - h. _____ Deformity common in RA.
 - i. _____ therapy is best for RA.
 - j. _____ spinal deform in seen in AS.
- Q.2. Say True or False:-** **[1x5=5]**
- a. RA is auto immune disease.
 - b. OA is degenerative disease.
 - c. Symmetrical symptom seen in OA.
 - d. Respiratory problem common in AS.
 - e. Swimming is best exercise for AS.
- Q3. Shorts notes on [any Six]:-** **[7x6=42]**
- a. Kyphosis
 - b. Scoliosis
 - c. LBA
 - d. Frozen shoulder
 - e. O.A.
 - f. R.A
 - g. A.S.
 - h. Osteoporosis
- Q4. Explain [any Two] :-** **[12.5x2=25]**
- a. Orthopedic splints & Appliance
 - b. Congenital abnormalities of child
 - c. Foot deformities
- Q5. Attempt with any ONE appropriate diagram** **(18)**
- a. Obesity management & complication
 - b. Spinal cord injury & its complication, Treatment, programme.
- *****

INSTITUTE OF PARA MEDICAL TECHNOLOGY

NEW DELHI-74

SAMPLE PAPERS

DIPLOMA IN SANITARY INSPECTOR



TIME : Three Hours

MAX. MARKS : 100

ROLL NO. _____

NOTE: Attempt all questions. Internal choice is provided.

Donot write/ use Red Ink for answeres.

PAPER I (BASIC HEALTH SCIENCES)

Q.1. Fill up the blanks :

[1x10=10]

- i] _____ is the science of health, which teaches to preserve and improve health.
- ii] _____ type of waves requires a medium for their transmission.
- iii] _____ are substances that give up or release hydrogen ion.
- iv] One mile = _____ Kms.
- v] Voice box is _____ type of organ.
- vi] Large hollow cavity of the skull is called _____ cavity.
- vii] Upper part of the trunk is called as _____.
- viii] Serum= Plasma + _____.
- ix] Cutting of the vas deferens is called as _____.
- x] _____ is the largest organ of the body.

Q.2. Say True or False :

[1x5=5]

- i] Virtual image cannot be taken on the screen.
- ii] In osmosis the particles in a solution passes from a dilute solution to the conc. solution through a parchment membrane.
- iii] Alum is used to remove turbidity by alum floc.
- iv] Phenile is a preparation of Cresol.
- v] Spleen is the organ of the abdominal cavity.

Q.3. Write short notes on [any Six] :

[7x6=42]

- | | |
|----------------------------------|-----------------------|
| a] Laws of Reflection | b] Ductless glands |
| c] Tape Worm | d] Round Worm |
| e] First Aid in case of burns | f] Splint & its usage |
| g] Routes of drug administration | |

Q.4. Explain [any Two] :

[12.5x2=25]

- a] Renal Excretory System
- b] Circulatory System
- c] Methods of Fly control

Q.5. Explain in detail about the life cycle of the malarial parasite alongwith diagramatical representation.

OR

Explain in detail the mechanical and biological modes of transmission of disease.

[18]

INSTITUTE OF PARA MEDICAL TECHNOLOGY

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PAPER II (ENVIRONMENTAL HEALTH EDUCATION)

Q.1. Fill up the blanks : **[1x10=10]**

- i] _____ is a greenish colour gas.
- ii] _____ are used when the pipe line changes the diameter at some point.
- iii] Injections given under the skin are called _____ injections.
- iv] Couples with wives aged 15-45 needing family planning are called as _____ couples.
- v] The card for finding out growth of children is called as _____.
- vi] the study of population is known as _____.
- vii] The test done to find out the residual chlorine is _____ test.
- viii] Sewage farming is also called as _____.
- ix] IUD with progesterone is a _____ generation IUD.
- x] The elevation of temperature at the time of ovulation is _____ C.

Q.2. Say True or False : **[1x5=5]**

- i] Increased quantity of fluoride in water destroys roots of teeth.
- ii] Fine sediments and impurities can be removed in clari-flocculator.
- iii] Air valve controls the flow in a pipeline.
- iv] Picking sewers are pipelines in which the collectors put the sewage.
- v] Low quantity of gases are present in the sewage.

Q.3. Write short notes on [any Six] : **[7x6=42]**

- | | |
|------------------------------------|-------------------------|
| a] Pot method of chlorination | b] Water pollution |
| c] Pertussis | d] RCA type of Laterine |
| e] Arthropod Borne infections | f] Oxidation pond |
| g] Requirement for burning grounds | |

Q.4. Explain [any Two] : **[12.5x2=25]**

- a] Methods for water disinfection of small quantities
- b] Biogas plant
- c] Effects of industrilization on community health

Q.5. Explain in detail about the treatment and disposal of garbage.

OR

Explain in detail the various methods of family planning.

[18]

INSTITUTE OF PARA MEDICAL TECHNOLOGY

NEW DELHI-74

SAMPLE PAPERS

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TIME : Three Hours

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PAPER III (NUTRITION AND FOOD SANITATION)

Q.1. Fill up the blanks :

[1x10=10]

- i] Thiamine is the other name of vitamin _____.
- ii] 1 gm protein supplies _____ calories.
- iii] _____ is called as the reference protein.
- iv] Arm circumference less than 12.5cm is termed as _____.
- v] Oil contaminated with argeomone causes _____.
- vi] Pellagra is caused by deficiency of _____.
- vii] Exclusive breast feeding is given till _____ months of age.
- viii] _____ is the toxin that causes neurolathyrism.
- ix] Aflatoxin is produced by _____.
- x] _____ is a process of adding nutrition to food to maintain its quality.

Q.2. Say True or False :

[1x5=5]

- i] The word nutrition is derived from the word nutricus.
- ii] Egg is rich in all nutrients except Vit. C.
- iii] Weaning starts at 1 year of age.
- iv] 63% of human body is composed of water.
- v] Vitamin b2 causes beri-beri.

Q.3. Write short notes on [any Six] :

[7x6=42]

- | | |
|---|---|
| a] Weaning | b] Control of malnutrition |
| c] ICDS | d] Parboiling |
| e] Benefits of breast feeding | f] National anaemia prophylaxis program |
| g] Sanitation measures for food handlers. | |

Q.4. Explain [any Two] :

[12.5x2=25]

- a] Methods of pasteurisation and test to check it.
- b] PEM in detail.
- c] Simple methods of detection of adulterants

Q.5. Explain nutritional assessment in detail and give the indicators for malnutrition.

OR

Define Malnutrition. Classify & give stages and epidemiological facts associated with it in detail.

[18]

INSTITUTE OF PARA MEDICAL TECHNOLOGY

NEW DELHI-74

SAMPLE PAPERS

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TIME : Three Hours **MAX. MARKS :** 100 **ROLL NO.** _____

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Donot write/ use Red Ink for answeres.

PAPER IV (ENVIRONMENTAL SANITATION)

Q.1. Fill up the blanks : **[1x10=10]**

- i] BOD of potable water is _____.
- ii] Ion exchange softening process is also called as _____ process.
- iii] _____ thermometer is used to find out the cooling power of air.
- iv] The temperature rises to _____°F in heat hyperpyrexia.
- v] The direction of wind is shown by an instrument called as _____.
- vi] _____ law states that diffusion of gases varies inversly to the square root of their densities.
- vii] The bricks with tapering holes are called as _____ bricks.
- viii] Globe thermometer is used in the factories is used to find out _____.
- ix] Permanent hardness of water is due to dissolved _____ & _____ salts of Ca and Mg.
- x] The process of sedimentation is accelerated by adding _____ to raw water.

Q.2. Say True or False : **[1x5=5]**

- i] Action is purely aerobic in the clarifier.
- ii] The boyle's law states that if temperature is constant, the volume of gas varies directly with pressure.
- iii] The chlorine requirement does not depend on pH of water.
- iv] In sunstroke the body temperature rises to 110°F.
- v] Hygrometer is an instrument used to find out the radiant heat.

Q.3. Write short notes on [any Six] : **[7x6=42]**

- | | |
|--|-------------------------------------|
| a] Leach pit latrines. | b] Requirements for buring grounds. |
| c] Effects of noise. | d] Biogas plant. |
| e] Ion exchange softening process. | f] Horrock's test. |
| g] Difference between rapid & slow sand filters. | |

Q.4. Explain [any Two] : **[12.5x2=25]**

- a] Treatment of garbage.
- b] Natural and mechanical ventilation.
- c] Housing standards in urban and rural areas.

Q.5. Explain the treatment of impure water in detail. Add a note on chlorination.

OR

Explain the sewage treatment in detail with help of a flow chart.

[18]