

DIPLOMA IN RADIOLOGY IMAGING TECHNOLOGY

SECOND YEAR

PAPER III – CONTRAST AND SPECIAL RADIOGRAPHY PROCEDURES

Q.P. Code : 841413

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. Write in detail about the Basic principle and Data Acquisition of Image Intensifier. How it Differs from Fluoroscopy.
2. Write in detail about the Radiological procedures of Single and Double contrast of Barium Enema study.
3. Write in detail about the x-ray Procedure of IVU.

II. Write notes on:

(10 x 5 = 50)

1. Guidance in Radiation Protection to be followed while doing X-ray procedures.
2. Discuss about Barium meal study.
3. Write about Indications and Contra Indications for T-Tube Cholangiography.
4. Write in detail about Micturation Cysto Urethrography.
5. Write in Detail about the HSG procedure.
6. Write in details about Image Intensifier and its application.
7. What are the patients care to be taken while doing Ascending Urethrography
8. Write in detail about the procedure Fistulagraphy.
9. Discuss about Tomography and its applications.
10. Indications and Contra Indications For Barium Swallow. How the Gastro Oesophageal reflux is demonstrated?

III. Short Answers on:

(10 x 2 = 20)

1. What is the contra indication for Barium swallow ?
2. What is 10 day rule of Pregnancy?
3. Discuss about Volume contrast and filming in the case of Paediatric IVU.
4. Write about Sinogram .
5. Short notes on Sailography.
6. What are the different types of T- tube Cholangiography.
7. Name the contrast used in HSG and how much volume is used.
8. What are the complications in Ascending Urethrography?
9. Write the Advantages of the preliminary or Pilot Films.
10. Write about Small bowel Enema.

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Time : Three Hours

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Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. Write in details about the IVU Procedure.
2. Write in detail about the T- tube Cholangiography Procedure.
3. Method to be followed in Radiological Procedure.
 - a) Patient Preparation & Patient care After Procedure.
 - b) Guidance for Radiation Protection in Diagnostic Radiology.

II. Write notes on:

(10 x 5 = 50)

1. What are the Indications and Contra Indications For Barium Enema study.
2. Write in detail about the Radiological procedure of Ascending Urethrography.
3. Discuss about HSG Procedures.
4. Write in detail about Image Intensifier and its Advantages.
5. What is the Basic Principle of tomography and Its application In Imaging.
6. Discuss about the various complication regarding IV contrast media.
7. Write in detail about Fistulagraphy.
8. What are the advantages of doing Preliminary / Pilot films and delayed films.
9. Discuss in detail about Fluoroscopy.
10. What are the Indication and contra Indication for MCU.

III. Short Answers on:

(10 x 2 = 20)

1. What are the contra indications for Barium swallow study.
2. What are the complication in HSG Procedures?
3. What are the patients preparation for the Barium Enema study?
4. What are the patients care to be followed in the study of Ascending Urethrogram?
5. Define Sinogram.
6. What are the different Procedures followed in T-tube cholangiography?
7. What is mean by 10 day rule of Pregnancy?
8. What is the contrast medium and How much quantity is given for Sailography?
9. What is the chemical used in the Fluoroscopic Screen?
10. How much volume of contrast and timings of filming in the Procedure IVU.

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Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. Explain in detail about the preparation of patient, indications, procedure and recommended views of a patient undergoing T tube cholangiogram.
2. Explain the methods, indications, contraindications, patient preparation, contrast and radiographic technique for a Barium enema: single and double contrast.
3. Draw a labeled diagram explaining about the Hystero Salphingo Graphy procedure.

II. Write notes on:

(10 x 5 = 50)

1. Indications, contrast and technique of small bowel enema.
2. Explain about the contrast medium and radiographic views taken for intravenous urogram.
3. 5 high risk factors of ionic contrast media.
4. Explain in detail about the basics of Tomography.
5. Explain about Barium swallow.
6. What are image intensifiers?
7. Explain in detail about Sinogram procedure.
8. Write about the indications, contrast and technique of fistulogram.
9. Explain about fluoroscopy chain with a diagram.
10. Explain about the radiographic views of Micturating Cysto Urethrogram procedure.

III. Short Answers on:

(10 x 2 = 20)

1. What type of catheter is used in small bowel enema?
2. What is the contrast media used in Hystero Salphingo Graphy?
3. What is Zonography?
4. Name the contrast media used in small bowel enema.
5. Explain minification gain.
6. Explain about automatic brightness control.
7. What is contrast ratio?
8. Explain about distortion.
9. Explain pixel shift
10. What is road mapping?

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Time : Three Hours

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Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. Explain about the indications, contraindications, preparation of patient, contrast medium and radiographic views taken for an intravenous urogram.
2. Explain in detail about the Percutaneous Transhepatic Biliary Duct procedure.
3. Explain the methods, indications, contraindications, patient preparation, contrast and radiographic technique for a Barium enema procedure.

II. Write notes on:

(10 x 5 = 50)

1. Modification of technique and main indications for upper GI imaging in children.
2. Indications, contrast and technique of Barium swallow procedure.
3. 5 adverse effects of ionic contrast media
4. Explain about the Sinogram procedure.
5. Explain the various methods of fluoroscopy.
6. Explain the types of tomographic movements.
7. Explain about the benefits of image intensifiers.
8. Explain about the protocol for a tomographic procedure.
9. Explain in detail about the T Tube cholangiogram procedure.
10. Write in detail about the Fistulogram procedure.

III. Short Answers on:

(10 x 2 = 20)

1. What is the ten day rule?
2. Explain about the catheter used in small bowel enema.
3. List the indications and contraindications of intravenous urogram.
4. Indications and contraindications for fistulogram.
5. Give two examples of ionic contrast media.
6. Define Micturating Cysto Urethrogram.
7. Explain indications and contraindications of T Tube cholangiogram.
8. The level of creatinine and why is it important in intravenous urethrogram?
9. Radiographic technique for Micturating Cysto Urethrogram.
10. Define Sialography.

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Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. Barium swallow - indications, contra-indications, patient preparation, procedure, radiographic views. When to use gastrografin instead of barium?
2. Elaborate on Hysterosalpingogram - indications, contra- indications, patient preparation, when to plan the test, procedure, contrast used, radiographic views commonly used?
3. Mention different types of Contrast agents used in radiology - classify, give contraindications and precautions for usage of each.

II. Write notes on:

(10 x 5 = 50)

1. Barium enema for child – modifications.
2. Ascending urethrogram, contrast used, precautions, procedure.
3. Barium suspension types and uses differences in preparation for single contrast and double contrast studies.
4. Bilbao dotter tube - describe, where it is used, why?
5. Barium can - diagram, features, usage and restrictions on where to place.
6. Intravenous urogram - contrast agent used, precautions and procedure.
7. Micturating cystourethrogram - indications, procedure and radiographic views.
8. Sialogram - indications, contraindications, procedure and radiographic views.
9. Defecogram - procedure, procedure, radiographic view.
10. T-tube cholangiogram - contrast used, precautions, procedure, radiographic views.

III. Short Answers on:

(10 x 2 = 20)

1. X-Ray tomography - advantage and examples of usage.
2. Radiographic view best used to demonstrate oesophagogastric junction.
3. Uses of compression paddle in barium meal follow through.
4. Why should we avoid air bubbles in contrast applications - HSG, T-tube cholangiogram, AUG?
5. Can Micturating cystourethrogram be performed when renal parameters (serum creatinine) is elevated, why?
6. Why do we use Luke warm preparation in barium enema?
7. Uses of effervescent in barium swallow.
8. Use of penile clamp.
9. What is opposing urethrogram or approximating urethrogram?
10. Decubitus view in barium enema.

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Time : Three Hours

Maximum : 100 marks

Answer ALL questions

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

1. Small bowel enema - indications, contra-indications, patient preparation, catheters used, procedure, radiographic views
2. Elaborate on Intravenous urogram - indications, contra- indications, patient preparation, procedure and radiographic views commonly used. When is a diuretic (lasix) used in intravenous urogram?
3. Contrast agents used in radiology - classify, contra-indications and precautions for each.

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

1. Hysterosalpingogram - when to give appointment, contrast agent used, common views?
2. Parotid sialogram - contrast agent used, common views.
3. Retrograde urethrogram - contrast agent used, positioning.
4. Thin barium and thick barium differences and uses.
5. Higginsons pump - diagram, features, usage and precautions.
6. Barium can - diagram, features, usage and restrictions on where to place.
7. Barium swallow for child – modifications.
8. Fistulogram - contrast used, radiographic views.
9. Image intensifiers - advantage, dose reduction techniques.
10. X-ray Tomography - advantage, principle, examples of usage.

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

1. Use of T-tube cholangiogram.
2. Use of effervescent in barium swallow.
3. Use of penile clamp.
4. What is opposing urethrogram or approximating urethrogram?
5. Decubitus view in barium enema.
6. Radiographic view best used to demonstrate oesophagogastric junction.
7. Use of compression paddle in barium meal follow through.
8. Why should we avoid air bubbles in contrast applications - HSG, T-tube cholangiogram, AUG?
9. What is the use of lemon in sialogram?
10. Why do we use Luke warm preparation in barium enema?

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Time : Three hours

Maximum: 100 Marks

Answer **ALL** questions.

I. Elaborate on:

(3 x 10 = 30)

1. Barium meal follow through.
2. Micturating Cysto Urethrography.
3. Lumbar Myelography.

II. Write notes on:

(10 x 5 = 50)

1. Hypotonic Duodenography.
2. Sialography.
3. Adverse reactions for contrast medium.
4. Ascending Urethrography.
5. Oral Cholecystogram.
6. Vesiculography.
7. Technique in small bowel enema.
8. Ureteric compression.
9. Barium enema in proximal segment of colostomy.
10. How to demonstrate illeo-caecal junction in enteroclysis?

III. Short answers on:

(10 x 2 = 20)

1. Indications for Intravenous Urogram.
2. What is fistulogram?
3. What are the differences between the Ionic and Non-ionic contrast medium?
4. What are the after care for Bronchography patients?
5. Purpose of slow administration of contrast medium in Intravenous cholangiogram.
6. Define fluoroscopy.
7. What are the exposure factor for single and double contrast study in barium meal?
8. What is Tomography?
9. What are the indications for barium swallow?
10. List the advantage and disadvantage of Fluoroscopy.

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Time : Three Hours

Maximum : 100 Marks

Answer All questions.

I. Elaborate on:

(3 x 10 = 30)

1. Intra Venous Urogram.
2. Hysterosalpingography.
3. Enteroclysis.

II. Write notes on:

(10 x 5 = 50)

1. Hypotonic Duodenography.
2. Sialography.
3. What are the high risk cases considered before giving contrast medium?
4. Preparation of patient for Bronchography.
5. Emergency equipment and drugs kept in radiology department.
6. Micturating cysto urethrography.
7. T-Tube Cholangiography.
8. What are the views taken in Mammography?
9. How a preliminary film taken for Choledochography?
10. Adverse reactions for contrast medium.

III. Short answers on:

(10 x 2 = 20)

1. Points to consider while selecting contrast medium.
2. What are positive and negative contrast medium? Give examples.
3. What are the indications for Ascending Urethrography?
4. What is Sinography?
5. What are the after care for Myelography patients?
6. Why compression is applied in mammography.
7. Which is the best view in pregnancy and the advantages in that position?
8. In which special procedure Macroradiography is used?
9. What is ultrasound, how they are generated?
10. When do you give the contrast medium for Oral Cholecystogram?

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Time : Three Hours

Maximum : 100 Marks

Answer All questions.

I. Elaborate on:

(3 x 10 = 30)

1. Describe about the procedure of Mammography.
2. Explain about the procedure of Sialography.
3. Describe about the procedure of Barium Enema study.

II. Write notes on:

(10 x 5 = 50)

1. Describe mucosal study of stomach.
2. RGP.
3. What are the high risk cases considered before administration of contrast medium?
4. Preparation of patient in Bronchography.
5. List the emergency equipments and drugs kept in the Radiology department.
6. What are the routes of administration of contrast medium?
7. ERCP.
8. How to demonstrate in the following in Barium swallow.
a) Foreign body b) Oesophageal varices c) Hiatus hernia.
9. MCU in stress incontinence.
10. What modifications to be made in IVU in the following HT, Ectopia, Bladder anomalies, hydronephrosis?

III. Short answers on:

(10 x 2 = 20)

1. Bilbao – dotter tube.
2. Advantage of enterocolysis over Barium meal follow through.
3. What are the contra indications in hypotonic duodenography?
4. Write the indications for MCU.
5. What is Nephrogram and how to get it?
6. What is 10 day rule?
7. What precaution to be taken while doing cervical myelography?
8. What all can be diagnosed in plain X-ray during pregnancy?
9. What compound is used in most positive contrast medium? Why?
10. Basic trolley setting in HSG.

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Time : Three Hours

Maximum : 100 Marks

Answer All questions.

I. Elaborate on:

(3 x 10 = 30)

Write in detail under the following headings. Definition, indication, contrast medium used, Pre film, Technique with views.

1. Barium meal follow through.
2. MCU.
3. Lumber Myelography.

II. Write notes on:

(10 x 5 = 50)

1. Hypotonic Duodenography.
2. Sialography.
3. Adverse reactions for contrast medium.
4. Ascending Urethrogram.
5. OCG.
6. Vesiculography.
7. Technique in small bowel enema.
8. Ureteric compression.
9. Basic trolley setting in HSC.
10. Barium enema in proximal segment of colostectomy.

III. Short answers on:

(10 x 2 = 20)

1. How to demonstrate Ileocecal junction in enteroclysis?
2. Indications for IVU.
3. What is fistulogram?
4. What is the difference between Ionic and non-ionic contrast medium?
5. After care of patient in Bronchogram.
6. Purpose of slow of administration contrast medium in IV Cholangiogram.
7. Define Fluoroscopy.
8. What are the exposure factors for single contrast and double contrast in Barium meal study?
9. What is tomography?
10. Basic trolley setting in HSG.

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Time : Three Hours

Maximum : 100 Marks

Answer All questions.

I. Elaborate on:

(3 x 10 = 30)

1. Write in detail about the Procedure of Barium meal follow through.
2. Explain Barium swallow procedure with the complications of
 - a) Foreign body
 - b) Oesophageal Varices
 - c) Severe Dysphagia
 - d) Hiatus Hernia
3. Explain IVP/IVU procedure in detail.

II. Write notes on:

(10 x 5 = 50)

1. Write in detail about VCUG.
2. Write in Detail about the HSG procedure.
3. ERCP.
4. Write in detail about sialography.
5. What are the risk factors of contrast media?
6. What is dye? Explain in brief about its properties and types.
7. Retrograde pyelogram.
8. T-Tube cholangiogram.
9. Semino-Vesiculogram.
10. Invertogram.

III. Short answers on:

(10 x 2 = 20)

1. What is 10 day rule?
2. Small bowel enema.
3. Seldinger Technique.
4. Bowel washing techniques for Barium enema.
5. Fistulogram.
6. Oral cholecystogram.
7. Enteroclysis.
8. Tomogram.
9. Benefits of fluoroscopy in contrast procedure.
10. AUG.

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SECOND YEAR**

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Q.P. Code: 841413

Time : Three Hours

Maximum : 100 Marks

Answer All questions.

I. Elaborate on:

(3 x 10 = 30)

1. Explain in detail about single and double contrast Barium enema.
2. X-ray procedures of IVU.
3. Explain in detail about percutaneous transhepatic Biliary Drainage procedure.

II. Write notes on:

(10 x 5 = 50)

1. Modification of techniques and indications of upper G1 imaging in children.
2. Adverse effects of ionic contrast media.
3. Fistulogram.
4. Micturating cystourethrogram indication, procedures, radiographic views.
5. X ray tomography definition, advantages and examples of usage.
6. 10 days rule of pregnancy.
7. Defecogram – procedures, radiographic views.
8. T- tube cholangiogram- contrast used, precaution, procedure, radiographic views.
9. What is bilbao dotter tube? What are its uses?
10. Image intensifier - advantage, dose reduction techniques.

III. Short answers on:

(10 x 2 = 20)

1. Effervescent in barium swallow usage.
2. Uses of penile clamp.
3. Use of lemon in sialogram.
4. Decubitus view in barium enema.
5. Opposing urethrogram.
6. Macro radiography.
7. Sinography.
8. Basic trolley setting in HSG.
9. Define fluoroscopy.
10. After care of patient in Bronchogram.

**DIPLOMA IN RADIOLOGY IMAGING TECHNOLOGY
SECOND YEAR**

PAPER III – CONTRAST AND SPECIAL RADIOGRAPHY PROCEDURES

Q.P. Code: 841413

Time : Three Hours

Maximum : 100 Marks

Answer All questions.

I. Elaborate on:

(3 x 10 = 30)

1. What are the types of MR contrast media? What are hepatobiliary specific contrast agents and when are they used? Outline MR enterography.
2. Basic principle and data acquisition of image intensifier.
3. Lumbar Myelography.

II. Write notes on:

(10 x 5 = 50)

1. Radiological procedures of ascending urethrography.
2. Basic principle of tomography and its advantages.
3. Advantages of doing pilot films and delayed films.
4. Indication and contraindication for MCU.
5. Mammographic views.
6. Invertogram.
7. Fistulography.
8. Complications of intravenous contrast media.
9. Ureteric compression.
10. Split dose protocol in CT IVU.

III. Short answers on:

(10 x 2 = 20)

1. Types of catheter in small bowel enema.
2. Zonography.
3. Contrast media in small bowel enema.
4. Explain minification gain.
5. Explain pixel shift.
6. What is road mapping?
7. Explain about distortion.
8. Explain about automatic brightness control.
9. What is contrast ratio?
10. Define micturating cystourethrogram.

DIPLOMA IN RADIOLOGY IMAGING TECHNOLOGY**SECOND YEAR****PAPER III – CONTRAST AND SPECIAL RADIOGRAPHY PROCEDURES***Q.P. Code: 841413***Time : Three Hours****Maximum : 100 Marks****Answer All questions.****I. Elaborate on:****(3 x 10 = 30)**

1. Explain Barium swallow procedure with the complications of
(a) Foreign body (b) Oesophageal Variieces
(c) Severe Dysphagia (d) Hiatus Hemia
2. Write in detail about the basic principle and data acquisition of image intensifier.
How it differs from fluoroscopy.
3. Explain about the indications, contraindications, preparation of patient, contrast medium and radiographic views taken for an intravenous urogram.

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

1. Barium enema for child – modifications.
2. Bilbao dotter tube – describe, where it is used, why?
3. RGP.
4. ERCP.
5. Hypotonic duodenography.
6. Oral cholecystogram.
7. Ureteric compression.
8. Adverse reactions of contrast medium.
9. Explain about the benefits of image intensifiers.
10. Explain in detail about the T Tube cholangiogram procedure.

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

1. Radiographic view best used to demonstrate oesophagogastric junction.
2. Use of penile clamp.
3. What is Nephrogram and how to get it?
4. What precaution to be takes while doing cervical myelography?
5. What all can be diagnosed in plain X-ray during pregnancy?
6. Write the advantages of the preliminary or pilot films.
7. What are the difference between the Ionic and non-ionic contrast medium?
8. Define fluoroscopy.
9. What is the ten day rule?
10. Enteroclysis contrast medium preparation.

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

[LR 1220]

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

Sub. Code: 1413

**DIPLOMA IN RADIOLOGY IMAGING TECHNOLOGY
SECOND YEAR – (Regulation from 2010-2011)
PAPER III – CONTRAST AND SPECIAL RADIOGRAPHY PROCEDURES
Q.P. Code: 841413**

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. What are the types of MR contrast media? What are Hepatobiliary specific contrast agents and when are they used? Outline MR enterography.
2. Barium Swallow-indications, contraindications patient preparation, procedures and radiography views when do you use Gastrograffin instead of Barium?
3. Lumbar Myelography.

II. Write notes on:

(10 x 5 = 50)

1. CT Cisternogram.
2. Hypotonic Duodenography.
3. Ascending Urethrography.
4. Oral Cholecystogram.
5. Vesiculography.
6. Adverse reactions of Contrast medium.
7. Ureteric compression.
8. Barium Enteroclysis Procedures, indication and contraindication.
9. Mammographic views.
10. Retrograde Pyelogram.

III. Short answers on:

(10 x 2 = 20)

1. 10 day Rule.
2. Seldinger Technique.
3. Benefits of Fluoroscopy in Contrast procedures.
4. Contrast induced Nephropathy.
5. Tomogram.
6. After care for Myelography patients.
7. Uses of compression paddles in Barium meal follow through.
8. Defecogram.
9. Contrast used in HSS.
10. Short notes on Sialography.

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

[LR 1220]

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

Sub. Code: 1433

**DIPLOMA IN RADIOGRAPHY AND IMAGING TECHNOLOGY
SECOND YEAR – (Regulation from 2018-2019)
PAPER III – CONTRAST & SPECIAL RADIOGRAPHY PROCEDURES
Q.P. Code: 841433**

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. Barium Meal Follow through : Indications/ Contra indications, Preparation, Procedure, Contrast Media, routine & additional views, complications and after care.
2. MCU : Indications/ Contra indications, Preparation, Procedure, contrast media, routine & additional views, complications and after care.
3. HSG : Indications/ Contra indications, Preparation of patient, 10 day rule, Procedure, contrast media, routine & additional views, complications and after care.

II. Write notes on:

(10 x 5 = 50)

1. Contrast used in X-Ray procedures.
2. Image Intensifier.
3. Basics of Tomography and applications.
4. Enteroclysis.
5. T.Tube Cholangiogram.
6. Preparations and precautions to be observed prior to injection of Iodine Contrast medium.
7. Fluoroscopy and its advantages.
8. AUG.
9. Fistulogram.
10. Arteriogram.

III. Short answers on:

(10 x 2 = 20)

1. Positive contrast medium.
2. 10 day Rule.
3. Contra indications for IVU.
4. Nephrogram.
5. Tomography.
6. mA and KV range used in Fluoroscopy.
7. Anatomy demonstrated in Barium Meal.
8. Abbreviation of ERCP & MRCP.
9. Indications and Contra indications for HSG.
10. Parotid Sialogram.
