

**B.Sc. RADIOLOGY IMAGING TECHNOLOGY /
RADIO DIAGNOSIS TECHNOLOGY**

SECOND YEAR

PAPER III - CONTRAST AND SPECIAL RADIOGRAPHY PROCEDURES

Q.P. Code: 801813

Time : Three Hours

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on:

**Pages Time Marks
(Max.) (Max.) (Max.)**

- | | | | |
|---|---|---------|----|
| 1. Intravenous urogram under the following headings: | 7 | 20 min. | 10 |
| <ul style="list-style-type: none"> a) Indications, contraindications. b) Preparation of patient. c) Contrast medium. d) Radiographic views taken. e) Complications. | | | |
| 2. Barium meal follow through in adults under the following headings: | 7 | 20 min. | 10 |
| <ul style="list-style-type: none"> a) Methods. b) Indications and contraindications. c) Patient preparation. d) Contrast. e) Radiographic technique. <p>What is the modification of technique and main indications for upper GI imaging in children?</p> | | | |
| 3. Lumbar myelography under the following headings: | 7 | 20 min. | 10 |
| <ul style="list-style-type: none"> a) Preparation of patient b) Clinical indications and contrast used c) Procedure including recommended views d) Trolley setting e) After care of patient <p>Describe CT myelography.</p> | | | |

II. Write Notes on:**Pages Time Marks
(Max.) (Max.) (Max.)**

- | | | | |
|--|---|---------|---|
| 1. T tube cholangiogram. | 4 | 10 min. | 5 |
| 2. Barium swallow-Indications, contrast, technique. | 4 | 10 min. | 5 |
| 3. Small bowel enema – Indications, contrast, technique. | 4 | 10 min. | 5 |
| 4. Describe 5 high risk factors for and 5 adverse effects of ionic contrast media. | 4 | 10 min. | 5 |
| 5. Indication, contrast and views for Parotid sialography. | 4 | 10 min. | 5 |
| 6. Lower limb arteriogram. | 4 | 10 min. | 5 |
| 7. Loopogram. | 4 | 10 min. | 5 |
| 8. Contrast enema in neonate – indication, patient preparation, contrast, technique. | 4 | 10 min. | 5 |

III. Short Answers on:

- | | | | |
|--|---|--------|---|
| 1. Indications for low osmolar contrast medium. | 2 | 4 min. | 3 |
| 2. Indications, contraindications for percutaneous nephrostomy. | 2 | 4 min. | 3 |
| 3. Indications for single contrast barium enema. | 2 | 4 min. | 3 |
| 4. Cystography. | 2 | 4 min. | 3 |
| 5. Percutaneous transhepatic cholangiography –Indications and contraindications. | 2 | 4 min. | 3 |
| 6. Contrast medium, precautions and after care in myelography. | 2 | 4 min. | 3 |
| 7. Contraindications for barium enema. | 2 | 4 min. | 3 |
| 8. Ten day rule. | 2 | 4 min. | 3 |
| 9. Ascending urethrography in male– Indications and technique. | 2 | 4 min. | 3 |
| 10. Prophylaxis for adverse contrast reaction. | 2 | 4 min. | 3 |

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Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. Describe the preparation , procedure and contraindications of intravenous pyelogram?
2. Discuss the function of image intensifier with help of a diagram.
What are the methods of minimising radiation exposure during fluoroscopy?
3. Describe the preparation, procedure, radiographic views and uses of double contrast barium enema.

II. Write notes on:

(8 x 5 = 40)

1. Percutaneous nephrostomy.
2. Describe the procedure of fistulogram.
3. Parotid sialogram.
4. Types of barium preparations and their use.
5. Describe the procedure and radiographic views for myelography.
6. Gastrograffin swallow.
7. Cystogram technique and radiographic views.
8. Duties of a technologist during a contrast reaction.

III. Short Answers on:

(10 x 3 = 30)

1. Negative contrast media and their uses.
2. Principle of tomography.
3. Advantages of non ionic over ionic contrast media.
4. Dacryocystography.
5. Indications of digital subtraction angiography.
6. 10 day rule.
7. Name the structures studied in upper gastrointestinal series and what are its indications?
8. What are the emergency instruments and drugs needed before starting a contrast procedure?
9. Patient preparation in hysterosalpingography.
10. Lead gloves and apron.

[LE 0212]

FEBRUARY 2014

Sub. Code: 1813

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Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. Barium Enema
 - a) Types.
 - b) Procedure.
 - c) Contrast & apparatus used.
 - d) Common views taken.
 - e) Contraindications.
2. Iodinated contrast reagents
 - a) Classification with examples.
 - b) Routes of administration.
 - c) relevant precautions & contra-indications.
 - d) adverse reactions
 - e) how to handle adverse reactions
3. Ascending urethrogram
 - a) Procedure.
 - b) Contrast used.
 - c) Patient positioning.
 - d) Radiographic technique.
 - e) Contraindications.

II. Write notes on:

(8 x 5 = 40)

1. Tomography, give one example for its usage.
Give advantages and disadvantages
2. Hysterosalphingogram
Procedure, indications, when do you give appointment for the study related to menstrual cycle.
3. Intravenous urogram
Preparation, Contrast used, Complications.

4. Micturating cystourethrogram
Procedure, Contrast used, radiographic technique.
5. What is image intensifier
Examples of its usage with advantages & disadvantages.
6. T Tube cholangiogram
Procedure, contrast used, positioning & radiographic technique.
7. Barium meal follow through
Procedure, Techniques to image Ileocaecal junction
8. Mention common views taken for each of the following
Oesophagogastric junction, duodenum, rectum, hepatic and splenic flexures

III. Short Answers on:

(10 x 3 = 30)

1. Use of bilbao dotter tube.
2. What is Cystogram?
3. What is Sinogram?
4. Use of Higginson's pump.
5. Sialogogue, where is it used.
6. Contrast used in Myelogram.
7. Types of barium preparations.
8. Ten day rule.
9. Examples of Double contrast study.
10. Defecogram.

[LF 0212]

AUGUST 2014

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Time : Three Hours

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Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. Explain the types and physiology of the I V contrast media in our body.
2. Write the techniques of Barium Swallow single and double contrast.
3. What is HSG? How is it performed? What are the indications?

II. Write notes on:

(8 x 5 = 40)

1. What are the indications and contra-indications of Barium Meal studies?
2. What are the advantages and disadvantages of Enteroclysis?
3. Write notes on MCV.
4. How are contrast media classified?
5. What are the uses of Fluroscopy?
6. What are advantages of double contrast study?
7. Write notes on patient preparation for Barium Meal studies.
8. What are the complications of Barium Enema?

III. Short Answers on:

(10 x 3 = 30)

1. What are the properties of an ideal barium preparation?
2. Write short notes on Image Intensifier.
3. What are the contra-indications of IVU?
4. Write short notes on Barium Enema.
5. What is Sialography?
6. What are the indications of retrograde Pyelography?
7. What are the types of contrast reaction?
8. What are the advantages of Barium Meal follow-through?
9. What contrast media is used in IVU?
10. What is Enteroclysis?

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Time : Three Hours

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Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. What is the technique of single and double contrast Barium Enema study?
2. What is the technique of single and double contrast of Enteroclysis study?
3. How is MCV performed? Write indications and contra indications.

II. Write notes on:

(8 x 5 = 40)

1. Why iodine is performed component of contrast media?
2. Describe construction of image intensifier
3. Write notes about patient preparation for Barium Meal series.
4. How is the dilution of barium expressed? Give examples
5. What is filming technique of IVU?
6. What are the complications of HSG?
7. Write notes in vasography.
8. What are the complications of hypotonic duodenography?

III. Short Answers on:

(10 x 3 = 30)

1. Write short notes on Advantages of Barium sulphate preparation.
2. What is Fluoroscopy?
3. What are advantages of image intensifier?
4. What are the contra indications of Barium swallow?
5. What are the advantages of non ionic IV contrast?
6. What is Sialography?
7. Write short notes on IVU.
8. Write short notes on Retrograde Pyelography.
9. Write short notes on HSG.
10. Write short notes on fistulography.

[LH 0815]

AUGUST 2015

Sub. Code: 1813

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Time : Three Hours

Maximum : 100 marks

Answer ALL questions

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

1. Discuss the construction of image intensifier and techniques to reduce the radiation dose in fluoroscopy.
2. Name the various available barium studies for evaluation of gastrointestinal tract and discuss in detail about the double contrast barium meal study.
3. Classification of iodinated contrast agents and discuss about adverse effects of water soluble intravenous contrasts.

II. Write notes on: **(8 x 5 = 40)**

1. Contrast agents used in MRI.
2. Write short notes on barium swallow.
3. Evacuation proctography.
4. Endoscopic retrograde cholangio pancreatography.
5. Indications and contra-indications of ascending urethrogram.
6. Lumbar myelography.
7. Enteroclysis.
8. Duties of technologist during contrast reaction.

III. Short Answers on: **(10 x 3 = 30)**

1. Atomic number of iodine and barium.
2. ALARA.
3. Loopogram.
4. Dacryocystography.
5. Difference between single and double contrast barium study.
6. Safe period for HSG.
7. Contrast-induced nephropathy.
8. T-tube cholangiogram.
9. Retrograde ileogram.
10. Nephrogenic system fibrosis.

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Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Discuss in detail about the construction and applications of image intensifier.
2. Name the various available contrast studies for evaluation of gastrointestinal tract and discuss in detail about the double contrast barium enema study.
3. Name few drugs used in the evaluation of gastrointestinal tract studies and discuss about the advantage, disadvantage and complications of these drugs.

II. Write notes on:

(8 x 5 = 40)

1. Contrast agents in MRI.
2. Write short notes on barium swallow.
3. Evacuating proctography.
4. Micturating cystourethrography.
5. T tube cholangiogram.
6. Vasography.
7. Enteroclysis.
8. Contrast enema in neonates : indications, patient preparation and techniques.

III. Short answers on:

(10 x 3 = 30)

1. Fistulogram.
2. Patient prone for adverse drug reactions.
3. Atomic no of iodine and barium.
4. Retrograde ileogram.
5. Lumbar Myelography.
6. Safe period for HSG.
7. Contrast-induced nephropathy.
8. Hypotonic duodenography.
9. Shoulder arthrography.
10. Nephrogenic system fibrosis.

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Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Define Intravenous urography. What are all the indications, contraindications and preparation required for IVP? Describe the advantages and disadvantages of CT urography and MR urography.
2. a) Write about classification of contrast media.
b) Ultrasound contrast media.
c) Indication for water soluble contrast media in GIT.
3. Discuss about the use of barium in children (Various barium studies in children).

II. Write notes on:

(8 x 5 = 40)

1. Write about non-ionic monomers and dimers used in diagnostic radiology.
2. Write about indications and techniques of CT myelogram.
3. Double contrast enteroclysis.
4. Percutaneous transhepatic cholangiography.
5. Venography.
6. Micturating cysto urethro graphy.
7. Single contrast barium enema.
8. Complications of femoral artery catheterization (due to contrast media and technique)

III. Short answers on:

(10 x 3 = 30)

1. MR colonography.
2. CT angiography.
3. ERCP.
4. Anterior urethro graphy.
5. MR and CT splenoportogram.
6. Colostomy enema.
7. CT enteroclysis.
8. Indications for barium swallow.
9. Retrograde pyelourethrography.
10. Sialogram.

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Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Write the classification of contrast media and write in detail about the contrast media used in MRI.
2. Discuss barium meal examination under the following heading
 - a) Contrast media
 - b) Indications
 - c) Contra indications
 - d) Preparation of patient
 - e) radiographic position
 - f) Complication and after care
3. Discuss in detail hysterosalpingography.

II. Write notes on:

(8 x 5 = 40)

1. Discuss in brief commercially available ultrasound contrast media.
2. Short notes in GIT contrast in CT.
3. Single contrast Barium enema.
4. Bronchography.
5. Lymphangiogram.
6. Compare percutaneous transhepatic cholangiography and endoscopic retrograde cholangiography.
7. Filming technique, equipment, radiation protection and contraindications of compression in excretory urography in children.
8. Preoperative radiography in orthopedics.

III. Short answers on:

(10 x 3 = 30)

1. What is treitz ligament? Describe shortly its role in enteroclysis.
2. Compare methyl cellulose DC and Air double contrast.
3. Special views taken in IVP for
 - a) Visualising lower ureter
 - b) Calculi in cyst
 - c) Renal ptosis
4. Immediate complications following intravenous contrast.
5. Invertogram.
6. Virtual Colonoscopy.
7. Catheters used in angiography.
8. Renal angiogram.
9. MR contrast media.
10. Ascending Uretherogram.

[LL 0817]

AUGUST 2017

Sub. Code: 1813

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Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Describe in detail Barium Meal and Barium Meal Follow Through including radiographic techniques.
2. Describe types of contrast media used in Radiology department.
3. Describe in detail Intravenous Urography including radiographic techniques.

II. Write notes on:

(8 x 5 = 40)

1. Describe Hystero Salphingography.
2. Describe Barium Enema.
3. Describe Barium Swallow.
4. Describe neurological toxicity to intravenous contrast media.
5. Describe ingested foreign bodies and their diagnosis.
6. Describe macroradiography and their method of acquisition.
7. Describe Endoscopic Retrograde Cholangio Pancreatography.
8. Describe Sialography.

III. Short answers on:

(10 x 3 = 30)

1. Discuss on extravasation.
2. Discuss compartment syndrome.
3. Discuss details entered in patient record after administration of intravenous contrast media.
4. Describe Mammogram.
5. Describe Ascending Urethrography.
6. Describe the requirements for an ideal intravenous contrast media.
7. Discuss double contrast study.
8. Discuss angiogram.
9. Describe Lymphography.
10. Describe Stereoradiography.
