MALLA REDDY UNIVERSITY

SCHOOL OF ALLIED AND HEALTHCARE SCIENCES
M.SC I yr. II Sem RIT

Subject: INSTRUMENTATION OF SPECIALIZED RADIOLOGY EQUIPMENT
Subject Code: MR25-2RIT201

Duration: 2 hours Max. Marks:4**0M**

Question bank

Q.No	Questions	Marks	Section	Unit
1	a. Explain about Mobile Radiography equipment. (3M) b. write components of it and explain briefly.(5M)	**8**	**Section-I**	**1**
2	a. What is Portable X-Ray equipment and write the components of it and explain briefly. (5M) b. What are the applications, advantages and disadvantages of it.(3M)	**8**	**Section-I**	**1**
3	Describe the Capacitor Discharge mobile Equipment.	**8**	**Section-I**	**1**
4	Explain cordless Mobile Equipment.	**8**	**Section-I**	**1**
5	a. What is an image intensifier, and write the components of a mobile image intensifier. (5M) b. Write in detail about the Mobile Image Intensifier. (3M)	**8**	**Section-I**	**1**
6	Explain the X-ray equipment used in operation theatre.	**8**	**Section-I**	**1**
7	a. Write in detail about the C Arm machine. (3M) b. Write components of it and explain briefly. (5M)	**8**	**Section-I**	**1**
8	Describe the components of Mobile X ray equipment?	**8**	**Section-I**	**1**
9	Explain the structure of the equipment that is used to convert X-rays into light photons.	**8**	**Section-I**	**1**
10	Explain the construction and working principle of Fluoroscopy?	**8**	**Section-I**	**1**
11	Describe about Image intensifier tube?	**8**	**Section-II**	**2**

12	a. Write a note on a television camera. (5M) b. Explain direct vision Fluoroscopy. (3M)	**8**	**Section-II**	**2**
13	Explain the construction and working principle of CCD with a neat diagram.	**8**	**Section-II**	**2**
14	Explain the television monitor with a diagram?	**8**	**Section-II**	**2**
15	a. Enumerate types of fluoroscopy. (5M) b. What are direct flat panel detectors? (3M)	**8**	**Section-II**	**2**
16	a. What is television scanning. (5M) b. Explain types of television scanning. (3M)	**8**	**Section-II**	**2**
17	a. Describe about various types of image recorders in fluoroscopy. (5M) b. What are direct flat panel detectors? (3M)	**8**	**Section-II**	**2**
18	Explain various types of image distortions in fluoroscopy?	**8**	**Section-II**	**2**
19	a. Write in detail about Digital fluoroscopy. (5M) b. What are flat panel detectors. (3M)	**8**	**Section-II**	**2**
20	Explain about general features of radiographic table.	**8**	**Section-II**	**2**
21	a. Describe about a serial changer. (5M) b. Add a note on spot film device (3M)	**8**	**Section-III**	**3**
22	Explain the indirect flat panel detector system.	**8**	**Section-III**	**3**
23	Explain about direct flat panel detector system.	**8**	**Section-III**	**3**
24	Write in detail about automatic exposure control?	**8**	**Section-III**	**3**
25	a. Write in detail about quantum detection efficiency.(5M) b. Write in detail about AEC. (3M)	**8**	**Section-III**	**3**
26	Explain about the skull table and its function?	**8**	**Section-III**	**3**
27	a. What is cranial radiography? Name the components of it. (3M) b. Explain about the equipment used for cranial radiography. (5M)	**8**	**Section-III**	**3**
28	a. Write in detail about digital radiography. (5M) b. Write applications, advantages and disadvantages of it. (3M)	**8**	**Section-III**	**3**

29	a. Discuss in detail about solid state autotimers. (5M) b. What are pulse counting timers? (3M)	**8**	**Section-III**	**3**
30	Write the difference between indirect and direct flat panel detectors?	**8**	**Section-III**	**3**
31	Write in detail about dental X ray equipment?	**8**	**Section-IV**	**4**
32	Describe in detail about intraoral radiography.	**8**	**Section-IV**	**4**
33	a. Define pantomography? Write in detail about pantomography equipment? (5M) b. What are the advantages and disadvantages of pantamography (3M)	**8**	**Section-IV**	**4**
34	a. Explain working principle of thermal breast imaging? (4M) b. Write advantages and uses of thermal breast imaging? (4M)	**8**	**Section-IV**	**4**
35	What is DEXA? write its principle, advantages and clinical applications.	**8**	**Section-IV**	**4**
36	Describe in detail about periapical radiography.	**8**	**Section-IV**	**4**
37	Describe in detail about bitewing radiography.	**8**	**Section-IV**	**4**
38	a. Write about the X-ray room layout for dental radiography? (5M) b. Explain radiation protection in dental radiography. (3M)	**8**	**Section-IV**	**4**
39	Write a note on radiation protection in dental radiography?	**8**	**Section-IV**	**4**
40	a. What are the advantages and limitations of dental X-ray equipment? (5M) b. What are the applications of dental x ray equipment. (3M)	**8**	**Section-IV**	**4**
41	Explain construction and working principles of mammography equipment?	**8**	**Section-V**	**5**
42	Explain magnification mammography?	**8**	**Section-V**	**5**

43	a. Describe about digital mammography (5M) b. Describe about filters (3M)	**8**	**Section-V**	**5**
44	Describe target filter combination in mammography?	**8**	**Section-V**	**5**
45	Explain Automatic Exposure control in mammography?	**8**	**Section-V**	**5**
46	a. Describe about grids. (5M) b. Describe the compression paddle used in mammography. (3M)	**8**	**Section-V**	**5**
47	a. Explain the construction of digital breast tomosynthesis. (5M) b. Explain the working principle of digital breast tomosynthesis. (3M)	**8**	**Section-V**	**5**
48	a. Define Mean glandular dose. (4M) b. Explain radiation protection in mammography. (4M)	**8**	**Section-V**	**5**
49	What are the dose reduction techniques used in mammography?	**8**	**Section-V**	**5**
50	Write about the components used in mammography equipment?	**8**	**Section-V**	**5**