

# **SRM VALLIAMMAI ENGINEERING COLLEGE**

**(An Autonomous Institution)**

SRM Nagar, Kattankulathur – 603 203

**DEPARTMENT OF MEDICAL ELECTRONICS**

**QUESTION BANK**



**V SEMESTER - MEDICAL ELECTRONICS**

**MD3561 – THERAPEUTIC EQUIPMENT**

**Regulation – 2023**

**Academic Year 2025 – 2026(ODD)**

*Prepared by*

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**SUBJECT :MD3561 THERAPEUTIC EQUIPMENT**

**SEM / YEAR : V / III**

### UNIT I – CARDIAC ASSIST DEVICES

**Cardiac pacemakers-Need, types and functional characteristics, AC Cardiac defibrillators, disadvantages, DC defibrillator, types- Instantaneous, Cardioverter.**

#### PART – A

Q.No	Questions	CO	BT Level	Competence
1.	Classify the types of pacemakers.	CO1	BTL 2	Understanding
2.	Why do we require a synchronization function in defibrillator?	CO1	BTL 1	Remembering
3.	List the types of batteries used for implantable pacemaker.	CO1	BTL 1	Remembering
4.	Define counter shock.	CO1	BTL 1	Remembering
5.	Express the advantages and disadvantages of standby pacemakers.	CO1	BTL 2	Understanding
6.	Examine important factors that demand internal pace maker's usage.	CO1	BTL 1	Remembering
7.	Sketch the block diagram of automatic defibrillator.	CO1	BTL 1	Remembering
8.	How are pulses generated in competitive pace makers?	CO1	BTL 1	Remembering
9.	Name the electrodes used for defibrillation.	CO1	BTL 1	Remembering
10.	Interpret the need for using a cardiac pacemaker.	CO1	BTL 2	Understanding
11.	Write down the advantage of DC defibrillator over AC defibrillator.	CO1	BTL 1	Remembering
12.	Identify the cause of fibrillation.	CO1	BTL 2	Understanding
13.	Differentiate between AC and DC defibrillators.	CO1	BTL 1	Remembering
14.	Write the difference between external and internal pacemaker.	CO1	BTL 1	Remembering
15.	Calculate the energy stored in 16 $\mu$ F capacitor of a DC defibrillator that is charged to a potential of 5000 V dc.	CO1	BTL 1	Remembering
16.	Analyze the phenomenon of fibrillation.	CO1	BTL 2	Understanding
17.	Distinguish between internal and external defibrillator.	CO1	BTL 2	Understanding
18.	Identify the type of defibrillator preferred in cardiac emergencies.	CO1	BTL 2	Understanding
19.	Mention the classification of pacing modes.	CO1	BTL 2	Understanding
20.	Outline the usage of demand pacemaker.	CO1	BTL 2	Understanding
21.	Point out the significance of heart simulation during T-wave.	CO1	BTL 2	Understanding
22.	List the effects of the AV block in human heart.	CO1	BTL 1	Remembering
23.	Sketch the phenomenon of premature ventricular contractions in ECG.	CO1	BTL 2	Understanding
24.	Draw the condition of ventricular tachycardia in a ECG waveform	CO1	BTL 2	Understanding

<b>PART B</b>				
1.	What is pacemaker? How pacemakers are classified based on the modes of operation? Explain in detail. (16)	CO	BTL 3	Applying
2.	Illustrate the following techniques. (i) Demand pacemaker. (8) (ii) Atrial synchronous pacemaker. (8)	CO1	BTL 3	Applying
3.	Explain the principle and operations of DC defibrillators. (16)	CO1	BTL 3	Applying
4.	Examine about a cardioverter with the help of block diagram (16)	CO1	BTL 3	Applying
5.	(i) Explain the principle and operations of dual peak DC defibrillators. (8) (ii) Identify the advantages and disadvantages of DC defibrillator. (8)	CO1	BTL 3	Applying
6.	Write a brief note on Implantable defibrillator with necessary diagrams. (16)	CO1	BTL 3	Applying
7.	Describe ventricular asynchronous pacemaker with the help of square wave generator and monostable multivibrator circuit. (16)	CO1	BTL 3	Applying
8.	Draw the block diagram of the automatic defibrillator and analyze the importance of each block. (16)	CO1	BTL 3	Applying
9.	Sketch the circuit diagram of fixed rate pacemaker and explain its working principle. (16)	CO1	BTL 4	Analyzing
10.	(i) Distinguish between internal and external pacemaker. (8) (ii) Analyze the working principle of ventricular synchronous pacemaker. (8)	CO1	BTL 4	Analyzing
11.	Write the function of a typical modern pacemaker with the help of block diagram. (16)	CO1	BTL 3	Applying
12.	Summarize the components, specification and method of stimulation of pacemaker. (16)	CO1	BTL 3	Applying
13.	(i) When to use a defibrillator system? (8) (ii) Explain the need of cardiac pacemaker. (8)	CO1	BTL 4	Analyzing
14.	Describe the working principle synchronized DC defibrillator. (16)	CO1	BTL 4	Analyzing
15.	Describe the following in detail, (i) AC defibrillator (8) (ii) DC defibrillator (8)	CO1	BTL 4	Analyzing
16.	Explain the constructional details for an implantable pacemaker. (16)	CO1	BTL 4	Analyzing
17.	Examine the problems associated with the leads and electrodes of a pacemaker. (16)	CO1	BTL 4	Analyzing

## UNIT II – DIATHERMY AND MEDICAL STIMULATORS

**IR and UV lamp and its application. Short wave diathermy, ultrasonic diathermy, Microwave diathermy, Electro surgery machine - Current waveforms, Tissue Responses, Electro surgical current level, Hazards and safety procedures. Electric stimulators- current waveforms-Galvani, Faradic, exponential surged-IFT and TENS-Lithotripsy- Therapeutic applications of laser.**

### PART – A

Q.No	Questions	CO	BT Level	Competence
1.	What is the thermal effect of IR lamp?	CO2	BTL 1	Remembering
2.	State the term fulguration.	CO2	BTL 1	Remembering
3.	Draw the cutting and coagulation waveforms generated by surgical diathermy machine.	CO2	BTL 1	Remembering
4.	Write the common conditions where TENS is used?	CO2	BTL 1	Remembering
5.	Point out some of the features of ultrasonic type diathermy.	CO2	BTL 1	Remembering
6.	Define Lithotripsy.	CO2	BTL 1	Remembering
7.	Sketch the block diagram of an ultrasonic therapy unit.	CO2	BTL 2	Understanding
8.	List the advantages of diathermy.	CO2	BTL 1	Remembering
9.	Identify the risk associated with electro surgery.	CO2	BTL 2	Understanding
10.	Outline the use of two main circuits used in short wave diathermy machine.	CO2	BTL 2	Understanding
11.	Enumerate the methods involved in short wave diathermy.	CO2	BTL 1	Remembering
12.	Categorize the different types of electro-surgery techniques commonly employed in practice.	CO2	BTL 1	Remembering
13.	Write the principle of heat distribution in the body tissues in a short wave and microwave Diathermy.	CO2	BTL 1	Remembering
14.	Point out the safety precautions to be followed while preparing electro surgical unit.	CO2	BTL 1	Remembering
15.	Enumerate the advantages of short-wave diathermy.	CO2	BTL 2	Understanding
16.	Draw the block diagram of solid state electro-surgical unit.	CO2	BTL 2	Understanding
17.	Apply the use of laser in therapy applications.	CO2	BTL 2	Understanding
18.	Outline the different ways for applying ultrasonic to the body.	CO2	BTL 2	Understanding
19.	Summarize the importance of diapulse therapy technique used in diathermy.	CO2	BTL 2	Understanding
20.	How does a TENS machine open or close a gate?	CO2	BTL 1	Remembering
21.	Sketch the schema of a surgical diathermy machine.	CO2	BTL 2	Understanding
22.	Draw the waveform to coagulate using spark gap generator and solid state diathermy system.	CO2	BTL 2	Understanding
23.	Draw the waveform of the cut made using a conventional ESU.	CO2	BTL 2	Understanding
24.	Differentiate between the waveform to cut a tissue using solid state diathermy machine and electron tube circuit.	CO2	BTL 2	Understanding

<b>PART B</b>				
1.	What is diathermy? Draw the circuit diagram of a short-wave diathermy and also discuss its impact on therapy in detail. (16)	CO2	BTL 3	Applying
2.	(i) Interpret the application techniques in short- wave diathermy machines. (8) (ii) Why the diapulse therapy is preferred? (8)	CO2	BTL 3	Applying
3.	(i) Explain the principle of heating using microwaves. (8) (ii) Elaborate the working of microwave diathermy machine with the help of a simplified circuit diagram. (8)	CO2	BTL 3	Applying
4.	(i) With a block diagram, examine the working function of ultrasonic therapy. (8) (ii) What are the advantages of using ultrasonic for therapeutic purposes? (8)	CO2	BTL 3	Applying
5.	Illustrate the following with respect to ultrasonic therapy unit (i) Dosage control. (8) (ii) Application technique. (8)	CO2	BTL 3	Applying
6.	Summarize in detail the electrodes used in surgical diathermy. (16)	CO2	BTL 3	Applying
7.	Describe the working principle of surgical diathermy machine with a block diagram. (16)	CO2	BTL 4	Analyzing
8.	Compare different diathermy techniques with neat waveforms. (16)	CO2	BTL 4	Analyzing
9.	Write short notes on the following. (i) Galvanic Current (4) (ii) Faradic current (4) (iii) Surging Current (4) (iv) Biphasic Stimulation (4)	CO2	BTL 4	Analyzing
10.	(i) Sketch the current waveforms normally employed in electro diagnosis and electrotherapy. (8) (ii) Define the typical specifications of an electro-diagnostic therapy unit. (8)	CO2	BTL 4	Analyzing
11.	Draw a block diagram electrosurgical diathermy and list the working in detail. (16)	CO2	BTL 3	Applying
12.	Express the detailed view on TENS. (16)	CO2	BTL 3	Applying
13.	Outline the working principle of extracorporeal lithotripsy with the help of a neat diagram. (16)	CO2	BTL 4	Analyzing
14.	Describe in detail about the different therapeutic application of laser. (16)	CO2	BTL 4	Analyzing
15.	Analyze the various electrodes used with surgical diathermy system. (16)	CO2	BTL 4	Analyzing
16.	Categorize the various circuit configurations for safety operation of the ESUs. (16)	CO2	BTL 4	Analyzing
17.	Examine the principle and operation of laser and discuss the importance of laser safety. (16)	CO2	BTL 3	Applying

### UNIT III – EXTRACORPOREAL DEVICES

**Indication and principle of Hemodialysis, Dialysate, different types of Hemodialyzers, peritoneal dialyser monitoring systems, need for heart lung machine, functioning of bubble, disc type and membrane type oxygenators, finger pump, roller pump, monitoring systems.**

#### PART – A

Q.No	Questions	CO	BT Level	Competence
1.	Summarize the components of heart lung machine.	CO3	BTL 2	Understanding
2.	When do you need heart lung machine?	CO3	BTL 1	Remembering
3.	List the important functions of kidneys.	CO3	BTL 1	Remembering
4.	Define the function of hemodialysis system.	CO3	BTL 1	Remembering
5.	Outline the two parts of the nephron.	CO3	BTL 2	Understanding
6.	Examine the risk associated with hemodialysis.	CO3	BTL 1	Remembering
7.	Sketch the block diagram of an artificial kidney.	CO3	BTL 1	Remembering
8.	How are the oxygenators used in heart lung machine?	CO3	BTL 1	Remembering
9.	What is dialysate? Mention its composition.	CO3	BTL 1	Remembering
10.	Classify dialyzer based on design considerations.	CO3	BTL 2	Understanding
11.	Write down the average value of systolic and diastolic pressure normal adult.	CO3	BTL 1	Remembering
12.	Name the three main functional units of heart lung machine.	CO3	BTL 1	Remembering
13.	Mention the reason behind the centrifugal pump has replaced roller pump for routine CPB.	CO3	BTL 2	Understanding
14.	Write the difference between a CPB and heart lung machine.	CO3	BTL 1	Remembering
15.	List the basic types of exchangers used in artificial kidney.	CO3	BTL 2	Understanding
16.	Outline the simplified block diagram of dialysis process.	CO3	BTL 1	Remembering
17.	Distinguish between extracorporeal dialysis and intracorporeal dialysis.	CO3	BTL 2	Understanding
18.	Identify the two different names used for heart lung machine.	CO3	BTL 2	Understanding
19.	Mention the functions of membrane used in the dialysis process.	CO3	BTL 2	Understanding
20.	Determine UF Rate in L/hr for the given values take off liquid for treatment = 1L, time = 4 hours	CO3	BTL 2	Understanding
21.	Analyze the significance of ultrafiltration.	CO3	BTL 2	Understanding
22.	Criticize the process of simple diffusion	CO3	BTL 2	Understanding
23.	Examine the importance of osmosis	CO3	BTL 2	Understanding
24.	Interpret the principle of Reverse Osmosis (RO).	CO3	BTL 1	Remembering

**PART B**

<b>1.</b>	Describe in detail the principle of heart lung machine with diagram. (16)	<b>CO3</b>	<b>BTL 3</b>	<b>Applying</b>
<b>2.</b>	Illustrate the following with neat diagrams. (i) Bubble oxygenators (8) (ii) Peritoneal dialysis. (8)	<b>CO3</b>	<b>BTL 3</b>	<b>Applying</b>
<b>3.</b>	Explain the principle used in the pump oxygenators in detail with the help of neat diagram. (16)	<b>CO3</b>	<b>BTL 3</b>	<b>Applying</b>
<b>4.</b>	List important points about the different types of Oxygenators (16)	<b>CO3</b>	<b>BTL 3</b>	<b>Applying</b>
<b>5.</b>	Explain ultrafiltration rate monitor with the help of neat block diagram. (16)	<b>CO3</b>	<b>BTL 3</b>	<b>Applying</b>
<b>6.</b>	Write about the classification of dialyzer according to three basic design consideration. (16)	<b>CO3</b>	<b>BTL 3</b>	<b>Applying</b>
<b>7.</b>	Examine the simplified circuit diagram of conductivity of dialysate and explain in detail. (16)	<b>CO3</b>	<b>BTL 3</b>	<b>Applying</b>
<b>8.</b>	Point out in detail about the performance analysis of dialyzer. (16)	<b>CO3</b>	<b>BTL 4</b>	<b>Analyzing</b>
<b>9.</b>	Analyze in detail any one of the techniques to remove waste products from the blood. (16)	<b>CO3</b>	<b>BTL 4</b>	<b>Analyzing</b>
<b>10.</b>	(i) Compare hemodialysis and peritoneal dialysis. (8) (ii) Examine any one of the above in a detailed manner along with Merits and demerits. (8)	<b>CO3</b>	<b>BTL 4</b>	<b>Analyzing</b>
<b>11.</b>	Write brief notes on the following oxygenators (i) Disc type (8) (ii) Membrane type (8)	<b>CO3</b>	<b>BTL 3</b>	<b>Applying</b>
<b>12.</b>	Explain the application of heart lung machine during open heart surgery with necessary diagram. (16)	<b>CO3</b>	<b>BTL 4</b>	<b>Analyzing</b>
<b>13.</b>	Summarize in detail about the artificial kidney and its functions. (16)	<b>CO3</b>	<b>BTL 4</b>	<b>Analyzing</b>
<b>14.</b>	Draw a block diagram of blood leak detector using LED as a light source and analyze the importance of each block. (16)	<b>CO3</b>	<b>BTL 4</b>	<b>Analyzing</b>
<b>15.</b>	Illustrate the cardiovascular circulation and heart lung machine model used during surgeries. (16)	<b>CO3</b>	<b>BTL 4</b>	<b>Analyzing</b>
<b>16.</b>	Explain in detail about the changes in the body fluids that occurs during renal disease. (16)	<b>CO3</b>	<b>BTL 4</b>	<b>Analyzing</b>
<b>17.</b>	Analyze the principle of dialysis used in artificial kidneys. (16)	<b>CO3</b>	<b>BTL 4</b>	<b>Analyzing</b>

**UNIT IV – RESPIRATORY AIDS**

**Ventilator- Need, Types, Intermittent positive pressure, breathing apparatus operating sequence, electronic IPPB unit with monitoring for all respiratory parameters, Humidifier, Nebulizer, Aspirator, Infant incubators.**

**PART – A**

Q.No	Questions	CO	BT Level	Competence
1.	Classify ventilator based on the method of initiating inspiratory phase.	CO4	BTL2	Understanding
2.	When does a ventilator offer the best chance of survival?	CO4	BTL 1	Remembering
3.	Outline the contradiction for IPPB.	CO4	BTL 2	Understanding
4.	How is IPPB different from intermittent positive pressure ventilation?	CO4	BTL 1	Remembering
5.	What is a nebulizer?	CO4	BTL 1	Remembering
6.	Illustrate the risk associated with a ventilator.	CO4	BTL 1	Remembering
7.	Draw the functional diagram of a positive pressure ventilator.	CO4	BTL 1	Remembering
8.	List the parameters need to be monitored while using ventilator.	CO4	BTL 1	Remembering
9.	Who needs the nebulizer?	CO4	BTL 1	Remembering
10.	Summarize the benefits of IPPB.	CO4	BTL 2	Understanding
11.	Differentiate hypo ventilation and hyper ventilation.	CO4	BTL 1	Remembering
12.	Define lung compliance.	CO4	BTL 1	Remembering
13.	Mention the side effects caused by using ventilators for a long time.	CO4	BTL 2	Understanding
14.	Identify the other names for ventilators	CO4	BTL 1	Remembering
15.	Write the main functions of ventilator.	CO4	BTL 1	Remembering
16.	Point out the reason for using the medical incubator.	CO4	BTL 1	Remembering
17.	Assess the importance of using aspirator that are often included as part of a ventilator.	CO4	BTL 2	Understanding
18.	Write the difference between aspirator and a pump.	CO4	BTL 2	Understanding
19.	Outline the advantages of nebulizer.	CO4	BTL 2	Understanding
20.	Illustrate the factors that affect the performance of humidifier.	CO4	BTL 2	Understanding
21.	Examine the conducting section of the human respiratory system	CO4	BTL 2	Understanding
22.	Write the different divisions in the respiratory section.	CO4	BTL 2	Understanding
23.	Draw the schematic diagram of alveolar gas exchange.	CO4	BTL 2	Understanding
24.	Mention the importance of the process of respiration	CO4	BTL 2	Understanding

**PART B**

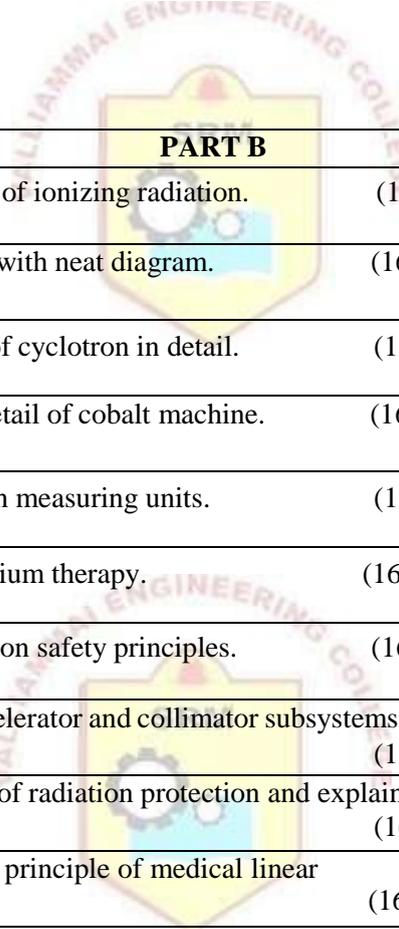
<b>1.</b>	Describe in detail the different mechanical modes of operation of ventilator. (16)	<b>CO4</b>	<b>BTL 3</b>	<b>Applying</b>
<b>2.</b>	Explain in detail about the artificial ventilation. (16)	<b>CO4</b>	<b>BTL 3</b>	<b>Applying</b>
<b>3.</b>	Explain the principle and operations of continuous positive airway pressure apparatus with the help of neat diagram. (16)	<b>CO4</b>	<b>BTL 3</b>	<b>Applying</b>
<b>4.</b>	Elaborate in detail about the infant incubators. (16)	<b>CO4</b>	<b>BTL 3</b>	<b>Applying</b>
<b>5.</b>	Express in detail about high frequency ventilators. (16)	<b>CO4</b>	<b>BTL 3</b>	<b>Applying</b>
<b>6.</b>	Define the principle of humidifier functions. State its advantages and disadvantages. (16)	<b>CO4</b>	<b>BTL 3</b>	<b>Applying</b>
<b>7.</b>	Identify a medical equipment for a person with asthma or another respiratory condition to administer medication directly and quickly to the lungs and explain in detail. (16)	<b>CO4</b>	<b>BTL 4</b>	<b>Analyzing</b>
<b>8.</b>	Draw a block diagram of microprocessor-controlled ventilator and analyze the importance of each block. (16)	<b>CO4</b>	<b>BTL 4</b>	<b>Analyzing</b>
<b>9.</b>	Identify the different methods of classification of ventilator. (16)	<b>CO4</b>	<b>BTL 3</b>	<b>Applying</b>
<b>10.</b>	Categorize the two basic types of ventilators based on clinical usage in detail. (16)	<b>CO4</b>	<b>BTL 4</b>	<b>Analyzing</b>
<b>11.</b>	Write short notes on (i) Aspirator (6) (ii) Humidifier (5) (iii) Nebulizer (5)	<b>CO4</b>	<b>BTL 3</b>	<b>Applying</b>
<b>12.</b>	Summarize the different terms associated with ventilator in detail. (16)	<b>CO4</b>	<b>BTL 4</b>	<b>Analyzing</b>
<b>13.</b>	Illustrate the different types of nebulizers. (16)	<b>CO4</b>	<b>BTL 3</b>	<b>Applying</b>
<b>14.</b>	Analyze the IPPB unit for monitoring all respiratory parameters. (13)	<b>CO4</b>	<b>BTL 4</b>	<b>Analyzing</b>
<b>15.</b>	Write and explain the different lung volumes used for diagnosis. (16)	<b>CO4</b>	<b>BTL 4</b>	<b>Analyzing</b>
<b>16.</b>	Explain in detail about the modern ventilators. (16)	<b>CO4</b>	<b>BTL 4</b>	<b>Analyzing</b>
<b>17.</b>	Identify the performance of ventilators using its pressure-volume diagrams. (16)	<b>CO4</b>	<b>BTL 4</b>	<b>Analyzing</b>

## UNIT V – RADIATION THERAPY AND RADIATION SAFETY

**Effects of ionizing radiation, Radiation therapy – Cobalt, Cesium therapy, linear accelerator, betatron, cyclotron, brachytherapy. Radiation safety-Hazardous Effects of Radiation, Radiation measuring units, Allowed Levels, Radiation protection in medicine- radiation protection principles, ICRP regulation, Protection methods.**

### PART – A

Q.No	Questions	CO	BT Level	Competence
1.	How does ionizing radiation affect humans?	CO5	BTL 1	Remembering
2.	Compare ionizing and nonionizing radiation.	CO5	BTL 1	Remembering
3.	Summarize the benefits of using cobalt-60.	CO5	BTL 2	Understanding
4.	What is ionization effect?	CO5	BTL 1	Remembering
5.	Write the different devices used to protect external radiation exposure.	CO5	BTL 1	Remembering
6.	Name few blocks in the subsystem of linear accelerator machine.	CO5	BTL 1	Remembering
7.	Differentiate cyclotron and betatron.	CO5	BTL 2	Understanding
8.	Identify the few sources of ionizing radiation.	CO5	BTL 1	Remembering
9.	Point out the three major components of linear accelerator machine.	CO5	BTL 1	Remembering
10.	Define brachytherapy.	CO5	BTL 1	Remembering
11.	Classify the major subsystems of cobalt machine.	CO5	BTL 2	Understanding
12.	Find the three important factors which influence radiation exposure.	CO5	BTL 1	Remembering
13.	When do ionizing radiations become safe?	CO5	BTL 1	Remembering
14.	Expand the term ALARA.	CO5	BTL 1	Remembering
15.	State the principle behind the inverse square law.	CO5	BTL 1	Remembering
16.	Identify the use of radioactive and non-radioactive cesium.	CO5	BTL 2	Understanding
17.	Write some examples of brachytherapy.	CO5	BTL 2	Understanding
18.	List out the advantages of linear accelerator.	CO5	BTL 2	Understanding
19.	Enumerate the difference between deterministic and stochastic effects.	CO5	BTL 2	Understanding
20.	Compare and contrast the three principles used for radiation protection.	CO5	BTL 2	Understanding
21.	Categorize the methods used to manage cancer.	CO5	BTL 2	Understanding
22.	Point out the significance of high voltage X-ray machines.	CO5	BTL 2	Understanding
23.	Predict the major subsystems in a cobalt machine.	CO5	BTL 2	Understanding
24.	Mention the significance of ICRP guidelines for radiation safety	CO5	BTL 2	Understanding



<b>PART B</b>					
1.	Describe in detail about the effects of ionizing radiation.	(16)	CO5	BTL 3	Applying
2.	Illustrate the operation of betatron with neat diagram.	(16)	CO5	BTL 3	Applying
3.	Outline the principle of operation of cyclotron in detail.	(16)	CO5	BTL 3	Applying
4.	Explain about the constructional detail of cobalt machine.	(16)	CO5	BTL 3	Applying
5.	Explain in detail about the radiation measuring units.	(16)	CO5	BTL 3	Applying
6.	Write short notes on cobalt and cesium therapy.	(16)	CO5	BTL 4	Analyzing
7.	Elaborate in detail about the radiation safety principles.	(16)	CO5	BTL 4	Analyzing
8.	Draw the schematic diagram of accelerator and collimator subsystems in detail.	(16)	CO5	BTL 4	Analyzing
9.	Categorize the different principles of radiation protection and explain in detail.	(16)	CO5	BTL 4	Analyzing
10.	Explain the operation and working principle of medical linear accelerator machine.	(16)	CO5	BTL 3	Applying
11.	What is radiation therapy? What are the different radiotherapy techniques available? Explain any one of them.	(16)	CO5	BTL 4	Analyzing
12.	Classify the different methods of mounting the accelerator and explain in detail.	(16)	CO5	BTL 4	Analyzing
13.	Summarize about the radiation protection in medicine.	(16)	CO5	BTL 4	Analyzing
14.	Examine the different blocks present in medical linear accelerator and explain in detail with the help of neat block diagram.	(16)	CO5	BTL 4	Analyzing
15.	Elaborate the functional principle of brachytherapy with a neat diagram.	(16)	CO5	BTL 3	Applying
16.	Define and elaborate the methods of radiation protection in medicine.	(16)	CO5	BTL 4	Analyzing
17.	Analyze the schematic of on-off transition mechanism in the cobalt machine.	(16)	CO5	BTL 4	Analyzing