

PAPER-III

SUBJECT CODE & NAME-801510-MEDICAL ELECTRONICS, BIOPHYSICS AND
COMPUTER USAGE RELEVANT TO CARDIAC TECHNOLOGY AND BASIC
ELECTROCARDIOGRAPHY

UNIT -V –TOPIC- MEDICAL ULTRASOUND AND DOPPLER IONIC CURRENTS AND
ELECTROCARDIOGRAPHY ELECTROCARDIOGRAPHIC PROCESSING AND DISPLAY
SYSTEM RADIATION PHYSICS TECHNIQUES OF MONITORING RADIATION
EXPOSURE MEASURES TO REDUCE RADIATION EXPOSURE COMPUTER USE IN
MEDICAL CARE AND DATA ENTRY

REFERENCE – THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY QUESTION PAPER

S. No.	Question/Topic	Month & Year	Bloom's Taxonomy Level
1	Explain the measures to reduce the radiation exposure.	Aug 2015, Feb 2016, Aug 2017	Elaborate
2	Explain Electro Cardiographic processing and display system.	Aug 2016	Elaborate
3	What is Ultra-Sound? Explain modes of Ultra-Sound Scan.	Aug 2016	Elaborate
4	Explain various techniques for monitoring Radiation Exposure.	Feb 2017	Elaborate
5	Explain the usage of computer in medical field.	Feb 2018	Elaborate
6	Explain radiation dose reduction strategies / Explain on the radiation dose reduction strategies for minimizing radiation exposure in cath lab.	Aug 2018, Feb 2019	Analyze
7	Explain various methods to reduce radiation exposure.	Aug 2019	Elaborate
8	Explain how an image is formed in ultrasound?	Feb 2020	Elaborate

5 marks

S. No.	Question/Topic	Month & Year	Bloom's Taxonomy Level
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1	What is Ultrasound wave? What is the frequency used in Medical Ultrasound and write its medical applications.	Aug 2015	Understand
2	Write the role of computers in medical care.	Aug 2015	Understand
3	What are the measures to reduce Radiation Exposure?	Feb 2017	Understand
4	Different types of Ultrasound probes and its applications.	Feb 2017	Understand
5	Mention the effects of Radiation Exposure.	Feb 2017, Feb 2019	Remember
6	What are the sources of radiation?	Aug 2017	Remember
7	Explain radiation monitoring devices.	Feb 2018	Understand
8	Mention the applications of the Ultrasound in medicines.	Feb 2018	Understand
9	Imaging modes in ultrasound.	Aug 2018	Understand
10	What are ionic currents and discuss on the phases of cardiac action potential? / Phases of cardiac action potential.	Feb 2019, Feb 2020	Understand
11	Biological effects of radiation.	Feb 2019, Feb 2020	Understand
12	Explain ionic current.	Aug 2019	Understand
13	Cathode ray tube.	Aug 2019	Remember
14	Write a note on the various devices used for monitoring radiation.	Feb 2020	Understand

3 marks

S. No.	Question/Topic	Month & Year	Bloom's Taxonomy Level
1	Write about patient monitor?	Aug 2015	Remember
2	Write the applications or CRT (Cathode Ray Tube).	Aug 2015	Remember
3	What is radiation and what are the types of radiation? / What is Radiation and list the types of radiations. / What is radiation and mention its types.	Aug 2015, Feb 2017, Aug 2018, Feb 2019	Remember
4	Write about Action Potential / What is action potential? / Action potentials.	Aug 2015, Feb 2016, Aug 2016, Aug 2018	Remember

5	What is Radioactivity, half life period and decay constant? / What is radioactivity?	Aug 2016, Feb 2018	Remember
6	What is Piezoelectric effect? / Peizo electric effect.	Aug 2016, Aug 2017, Aug 2018	Remember
7	Mention the Ultra-Sound frequency for superficial and deeper structure scanning.	Aug 2016	Remember
8	What is Doppler Effect? / Doppler effect.	Feb 2017, Aug 2017, Aug 2018	Remember
9	What are the uses of computers in medicine?	Feb 2017	Remember
10	What are the parameters that can be measured in Physiological Monitor?	Aug 2017	Remember
11	What is Acoustic Impedance / Acoustic impedance.	Feb 2018, Aug 2018	Remember
12	What is ionic channel?	Feb 2018	Remember
13	What are the effects of radiation Exposure?	Feb 2018	Remember
14	What is the frequency used in ultrasound imaging?	Feb 2019	Remember
15	What are the basic principles of radiation safety?	Feb 2019	Remember
16	Application of ultrasound imaging.	Aug 2019	Remember
17	What are the procedures done with fluoroscopy? (Technique of Monitoring)	Aug 2019	Remember
18	Three methods to reduce radiation exposure.	Feb 2020	Remember
19	Inverse square law. (Radiation Physics)	Feb 2020	Remember