



SNS COLLEGE OF ALLIED HEALTH SCIENCES COIMBATORE -35
(Affiliated to the TamilNadu Dr M.G.R Medical University, Chennai)



B. Sc. CARDIAC TECHNOLOGY – 2024 BATCH

Year: I-year

Subject Name: Paper III -Medical Electronics ,Biophysics and Computer Usage Relevant To Cardiac Technology, Basic ECG

Date of the exam: 20/09/2025

Time: 3 hours

Subject Code:1510

Maximum: 100 marks

Answer all the questions

I.Elaborate on :

10 x 3 = 30

- 1.What is Ultra-Sound? Explain modes of Ultra-Sound Scan.
2. Explain Electro Cardiography processing and display system.
3. Explain the Defibrillator?

II.Write notes on:

5 x 8 = 40

- 1.What is the importance of Blood Pressure Measurement?
2. Write the stages of Hypertension.
3. Mention the types of Pulse Oximeter probes and it's parts.
4. Blood Pressure Cuff selection and sizing.
5. Impedence plethresmography ?
6. Augmented limb leads.
7. What is electrical axis, left axis and right axis deviation?
8. What is Einthoven Law and normal QRS complex ?

III.Short answers on:

3 x 10 = 30

- 1.What is Radioactivity, half life period and decay constant?
2. What is action potential?
3. If there are 3 Large square in R R intervals , calculate the Heart rate.
4. What are the main components of intra arterial Blood pressure measuribng system ?
5. Difference between transducers and sensors.
6. Mention the Ultra-Sound frequency for superficial and deeper structure scanning.
7. Write the recommended range for delivering shock during Defibrillation.
8. What is Unipolar Leads ?

9. Write the types of Defibrillator electrodes

10.A) What is the approximate heart rate if the R-R interval on a normal ECG is 0.6 seconds, assuming a standard paper speed of 25 mm/s?

A) 50 bpm B) 75 bpm C) 100 bpm D) 120 bpm **2023, MRCP**

B) .Normal PR interval duration? **2025, NEET-PG**

A) 0.06–0.10 s

C) B) 0.12–0.20 s

D) C) 0.21–0.25 s

E) D) 0.26–0.30 s

C) In a standard 12-lead ECG, where is the positive electrode for Lead I typically placed?
(AIIMS2014)

A) Right arm and left leg
Left arm and left leg

B) Left arm and right arm
D) Right arm and right leg

C)