

BACHELOR OF SCIENCE (CARDIOVASCULAR TECHNOLOGY) (CBCS - 2020 COURSE)

**B. Sc. (Cardiovascular Technology) Sem - IV :SUMMER- 2022
SUBJECT : BASIC ELECTROCARDIOGRAPHY (ECG)**

Day : Tuesday

Date : 19-07-2022

S-23355-2022

Time : 10:00 AM-12:00 PM

Max. Marks : **20**

N.B.

- 1) There are **THREE** Sections as
Section A Objective Type Questions 20 Marks .
Section B Long Answer Questions 20 Marks.
Section C Short Answer Questions 20 Marks.
 - 2) Section A is Given **SEPARATE** Sheet and has to be answered on **SAME** sheet. This sheet be completed within the **First 20 Minutes** of the starting of the examinations. The sheet with the section A only will collected by supervisor.
 - 3) You have to tick mark such kind of marks in the box of appropriate answers.
 - 4) There is a no negative marking.
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SECTION - A

*** Multiple Choice Question**

20 marks

1. Which is incorrect for ECG deflections:

- A. P wave –Produced by atrial depolarization
- B. QRS complex-produced by ventricular depolarization.
- C. R wave-produced by ventricular repolarization.
- D. Q wave-first negative deflection before R wave.

2. Region of left ventricle represented on ECG. Which is the following incorrect:

- A. lead V5-V6
- B. lead I and aVL- High lateral
- C. lead II, III, aVL-inferior
- D. Lead V3-V6-antero-lateral

3. Physiological Q wave meets the following criteria:

- A. < 0.04 sec in width
 - B. > 0.04 millisecond in width
 - C. $< 25\%$ of R wave
 - D. < 120 second in height
- 1) A and D 2) A and B 3) B and D 4) A and C

4. Which is not cause of the Right axis deviation ?:

- A. Pulmonary embolism
- B. Left posterior hemi block
- C. Left ventricular hypertrophy
- D. Ostium secundum ASD

5. North-west QRS axis is between:

- A. -90° to -30°
- B. $+0^\circ$ to $\pm 180^\circ$
- C. -90° to $+90^\circ$
- D. $\pm 180^\circ$ to -90°

6. Choose correct option ECG of hyperkalemia shows:

- A. Tall T wave
- B. P wave reduced in length
- C. P wave reduced in amplitude
- D. Wide QRS complex

7. Choose incorrect sentence regarding P wave:

- A. Normal P wave is < 2.5 mm in height
- B. Normal P wave is < 0.10 sec in width
- C. The P wave is sum of LA and LV activation
- D. A broad and notched P wave is representative of left atrial enlargement.

8. Causes of Right atrial enlargement. Choose correct sentence:

- A. Ventricular Septal Defect
- B. Systemic hypertension
- C. Atrial Septal Defect
- D. Cardiomyopathy

9. Normal QRS complex meet following criteria choose incorrect :

- A. R wave voltage is at least 25 mm in limb leads and 10 mm in precordial leads.
- B. Normal QRS axis ranges from -30° to $+90^\circ$
- C. R wave voltage does not exceed 4 mm in lead V1.
- D. R wave voltage does not $< 25\text{mm}$ in lead V5 and V6.

10. Which is the following not true in QRS electrical axis from the hexaxial system:

- A. Left axis deviation = -30° to $-\pm 90^\circ$
- B. Normal Axis = -30° to $+90^\circ$
- C. Right Axis deviation = $+90^\circ$ to $+180^\circ$
- D. North-west Axis = -90° to -180°

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SECTION - B

*** Answer the following question. (any two) 20 marks**

- Q. 1. Define triaxial and hexaxial reference system. Draw diagram of triaxial and hexaxial reference system. Write ECG changes of Left Axis deviation.
- Q. 2. Describe ECG lead system, standard limb leads and precordial leads.
- Q. 3 Describe normal ECG. Discuss waves, intervals, segments with labelled diagram in normal physiology.

SECTION - C

*** Answer the following question . (any four) 20 marks**

- Q. 1. Define ECG machine. Write Pre and Post patient care after ECG. Write maintenance of ECG machine.
- Q. 2. Write various methods to calculate the Heart Rate with examples.
- Q. 3. Write note on normal PR segment and normal PR interval.
- Q. 4 Define normal P wave and normal QRS complex.
- Q. 5. What are the ECG changes of Left Axis deviation and Right Axis deviation? Write causes of Right axis deviation.
- Q. 6. Define Conduction system of the heart with labelled diagram.

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