रेलवे भर्ती बोर्ड / RAILWAY RECRUITMENT BOARD
सी ई एन नं. - 04/2024 - CEN No. - 04/2024

Test Date	30/04/2025
Test Time	12:45 PM - 2:15 PM
Subject	ECG TECHNICIAN

*** Note**
Correct Answer will carry 1 mark per Question.
Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.
2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : **General Ability**

Q.1 **Which of the following is CORRECTLY matched regarding the asexual reproduction?**

Ans
✗ 1. Spore Formation - Bryophyllum
✗ 2. Budding - Amoeba
✓ 3. Vegetative Propagation - Sugarcane
✗ 4. Binary Fission - *Hydra*

Q.2 Komal and Bibha together can complete a work in 120 days. Bibha and Rita can complete the same work together in 160 days, and Rita and Komal can complete the same work together in 96 days. In how much time will all three of them complete that work together?

Ans
✗ 1. 60 days
✗ 2. 70 days
✓ 3. 80 days
✗ 4. 90 days

Q.3 **A concave mirror has a focal length of 20 cm. An object is placed at 30 cm in front of it. What is the image distance?**

Ans
✓ 1. −60 cm
✗ 2. −30 cm
✗ 3. 60 cm
✗ 4. 30 cm

Q.4 **Which of the following is required for the thermal decomposition of calcium carbonate ($CaCO_3$)?**

Ans
✗ 1. Water
✗ 2. Light
✓ 3. Heat
✗ 4. Electricity

Q.5 **Which sanctuary, located in the Indian state of Rajasthan, is known for ducks and herons?**

Ans
✓ 1. Keoladeo National Park
✗ 2. Kelameru Bird Sanctuary
✗ 3. Periyar Sanctuary
✗ 4. Manas Sanctuary

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Q.6 In a conference meeting of professors from all over the country, eight members named Dr. L, Dr. M, Dr. N, Dr. O, Dr. P, Dr. Q, Dr. R and Dr. S were seated in a circular table facing centre. Dr. P was seated second to the left of Dr. S. Only two persons were seated between Dr. M and Dr. P. Dr. O and Dr. S were immediate neighbours. Dr. N was seated third to the left of Dr. S. Dr. Q was seated to the immediate right of Dr. S. Dr. M was seated second to the right of Dr. Q. Neither Dr. Q nor Dr. S was an immediate neighbour of Dr. L. What is the position of Dr. S with respect to Dr. R?

Ans
- ✔ 1. Second to the left
- ✘ 2. Third to the right
- ✘ 3. Fourth to the right
- ✘ 4. Third to the left

Q.7 15 bags and 15 pens together cost ₹1650, whereas 18 bags and 14 pens together cost ₹1680. The cost of 9 bags exceeds the cost of 2 pens by:

Ans
- ✘ 1. ₹163
- ✘ 2. ₹164
- ✔ 3. ₹165
- ✘ 4. ₹166

Q.8 Based on the English alphabetical order, three of the following four letter clusters are alike in a certain way and thus form a group. Which pair DOES NOT belong to that group?
(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

Ans
- ✘ 1. PNL
- ✘ 2. KIG
- ✘ 3. VTR
- ✔ 4. OML

Q.9 What is the maximum value that must be assigned to A so that the 8-digit number 733A4101 is divisible by 3?

Ans
- ✘ 1. 7
- ✘ 2. 5
- ✘ 3. 3
- ✔ 4. 8

Q.10 The Northern Plains of India are primarily formed by the deposition of sediments brought by three river systems. Which of the following river systems is NOT a major contributor to the formation of the Northern Plains?

Ans
- ✔ 1. Narmada
- ✘ 2. Indus
- ✘ 3. Ganga
- ✘ 4. Brahmaputra

Q.11 The volume of a solid cylinder is 54054 cm^3 and its height is 39 cm. What is the total surface area of the solid cylinder? (Nearest to an integer).

Ans
- ✔ 1. 7920 cm^2
- ✘ 2. 7933 cm^2
- ✘ 3. 7917 cm^2
- ✘ 4. 7915 cm^2

Q.12 **Which of the following organisations publishes the Human Development Report that includes the Human Development Index (HDI)?**

Ans
- ✗ 1. World Bank (WB)
- ✗ 2. International Monetary Fund (IMF)
- ✓ 3. United Nations Development Programme (UNDP)
- ✗ 4. Organisation for Economic Co-operation and Development (OECD)

Q.13 **Which of the following Union Territories in India has a Legislative Assembly?**

Ans
- ✓ 1. Puducherry
- ✗ 2. Andaman and Nicobar Islands
- ✗ 3. Lakshadweep Islands
- ✗ 4. Chandigarh

Q.14 **Which of the following statements is INCORRECT regarding Harappan architecture?**

Ans
- ✗ 1. Most Harappan cities seem to have been protected by fortifications.
- ✓ 2. All the Harappan houses were constructed without any use of bricks.
- ✗ 3. Harappan cities had underground sewage system to take the waste water away.
- ✗ 4. Some large buildings, like warehouses for storage, were used for collective purposes.

Q.15 **Which of the following is NOT a simple permanent tissue?**

Ans
- ✓ 1. Phloem
- ✗ 2. Sclerenchyma.
- ✗ 3. Parenchyma
- ✗ 4. Collenchyma

Q.16 **Select the pair that follows the same pattern as that followed by the two pairs given below. Both pairs follow the same pattern.**

HSE : KOJ
BKW : EGB

Ans
- ✗ 1. JWS : MSY
- ✗ 2. IOL : LLQ
- ✓ 3. UAN : XWS
- ✗ 4. TCQ : XZV

Q.17 **The magnification (m) of a spherical mirror is given by $m = -v/u$, where v and u are the image and object distances, respectively. Which of the following statements is correct?**

Ans
- ✓ 1. If $|m|<1$, the image is diminished.
- ✗ 2. A positive magnification means that the image is real and inverted.
- ✗ 3. A negative magnification means that the image is virtual and erect.
- ✗ 4. The magnification is always positive for concave mirrors.

Q.18 Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:
All tips are nips.
No tip is a spike.

Conclusions:
(I): Some spikes are nips.
(II): All nips are spikes.

Ans
✗ 1. Only conclusion (I) follows
✗ 2. Both conclusions (I) and (II) follow
✓ 3. Neither conclusion (I) nor (II) follows
✗ 4. Only conclusion (II) follows

Q.19 When did the 4th edition of the Pan-India Coastal Defence Exercise, Sea Vigil-24, conclude?

Ans
✗ 1. 21 October 2024
✗ 2. 15 November 2024
✗ 3. 5 December 2024
✓ 4. 21 November 2024

Q.20 Which category of workers is the primary focus of the Union Budget 2025's initiative to expand e-Shram registration?

Ans
✗ 1. Government employees
✗ 2. Corporate professionals
✓ 3. Gig and platform workers
✗ 4. Retired pensioners

Q.21 What will come in the place of the question mark '(?)' in the following equation, if '+' and '−' are interchanged and '×' and '÷' are interchanged?

56 + 8 ÷ 36 × 6 − 13 = ?

Ans
✗ 1. 16
✗ 2. 48
✗ 3. 25
✓ 4. 21

Q.22 Which of the following is CORRECT regarding voluntary muscle?

Ans
✓ 1. The cells of this tissue are cylindrical, unbranched and multinucleate
✗ 2. The cells of this tissue are cylindrical, unbranched and uninucleate
✗ 3. The cells of this tissue are cylindrical, branched and multinucleate
✗ 4. The cells of this tissue are spindle, unbranched and multinucleate

Q.23 During the electrolytic refining of copper, what happens to impurities like gold and silver present in the impure copper anode?

Ans
✗ 1. They dissolve in the electrolyte and later react with copper ions.
✗ 2. They form a separate layer on the electrolyte surface.
✗ 3. They get deposited as pure metal on the cathode.
✓ 4. They settle down as anode mud at the bottom of the cell.

Q.24 **Which Indian cricketer was appointed as the Captain of the Delhi Capitals for the 2025 Indian Premier League (IPL) season?**

Ans
✗ 1. Rishabh Pant
✗ 2. Prithvi Shaw
✗ 3. Shreyas Iyer
✓ 4. Axar Patel

Q.25 **The administrative and military reforms reflected the broader British strategy in India after the Revolt of 1857. Which of the following statements best captures the underlying rationale?**

Ans
✗ 1. The reforms were solely aimed at boosting British military strength without any administrative changes.
✗ 2. The reforms sought to completely eliminate native influence by imposing direct European control in every sphere of life.
✓ 3. The reforms integrated local traditions with a strong centralised British administrative and military structure, thus minimising the risk of future uprisings.
✗ 4. The reforms focused exclusively on creating a participatory democratic system in India.

Q.26 **An element has an atomic number of 11. Based on this information, which of the following is correct?**

Ans
✓ 1. It readily loses one electron to form a positive ion.
✗ 2. It is a noble gas with a full outer shell.
✗ 3. It belongs to Group 17 and forms diatomic molecules.
✗ 4. It is a non-metal that gains electrons to form an anion.

Q.27 **Which Article of the Indian Constitution directs the state 'to secure and protect a social order in which justice—social, economic, and political—shall inform all the institutions of national life'?**

Ans
✓ 1. Article 38
✗ 2. Article 37
✗ 3. Article 41
✗ 4. Article 39

Q.28 **A man sold an article for ₹293 by first giving a d% discount on its marked price, and then another discount having the same nominal value (in ₹). If the marked price of the article is ₹1172, then what is the value of d?**

Ans
✗ 1. 36.5
✗ 2. 34.5
✓ 3. 37.5
✗ 4. 40.5

Q.29 **A refrigerator rated at 800 W operates for 24 hours/day. What is the cost of the energy required to operate it for 30 days at a rate of ₹8.00 per kW h?**

Ans
✗ 1. ₹5,202
✓ 2. ₹4,608
✗ 3. ₹3,200
✗ 4. ₹800

Q.30 **Which of the following is NOT correct regarding the cytoplasm?**

Ans
✗ 1. Cytoplasm is composed of water, salts, and various organic molecules
✗ 2. The cytoplasm contains all the cell's organelles
✓ 3. Cytoplasm is the fluid content inside the nuclear membrane
✗ 4. The cell's organelles are enclosed by membrane

Section : **Professional Ability**

Q.1 Major risk factor of atherosclerosis

Ans
- ✗ 1. Hyper protenimia
- ✗ 2. Hyper ketonemia
- ✗ 3. Hypo lipidemia
- ✓ 4. Hyper lipidemia

Q.2 How does the Osborn wave manifest in an ECG?

Ans
- ✗ 1. A negative deflection at the P wave
- ✗ 2. A positive deflection at the Q wave
- ✗ 3. A negative deflection at the R wave
- ✓ 4. A positive deflection at the J point

Q.3 What does chronotropic action of heart indicate?

Ans
- ✓ 1. Frequency of heart rate
- ✗ 2. Excitability of cardiac muscle
- ✗ 3. Conduction of impulse through heart
- ✗ 4. Force of contraction of heart

Q.4 Who demonstrated that an electrical current accompanies every heartbeat in a frog?

Ans
- ✗ 1. Christiaan Barnard
- ✗ 2. William Harvey
- ✓ 3. Carlo Matteucci
- ✗ 4. Willem Einthoven

Q.5 Diastole occurs during which phase of cardiac depolarization?

Ans
- ✓ 1. Phase IV
- ✗ 2. Phase 0
- ✗ 3. Phase I
- ✗ 4. Phase III

Q.6 Very regular and uniform waveforms leading to a saw tooth or picket fence appearance is seen in_

Ans
- ✗ 1. Atrial fibrillation
- ✗ 2. Ventricular fibrillation
- ✗ 3. Ventricular tachycardia
- ✓ 4. Atrial flutter

Q.7 How many electrodes are commonly attached to the body to form 12 ECG leads, with each lead measuring a specific electrical potential difference?

Ans
- ✗ 1. 08
- ✗ 2. 14
- ✓ 3. 10
- ✗ 4. 12

Q.8 Which of the following cranial nerves has cardioinhibitory effect?

Ans
- ✗ 1. Glossopharyngeal nerve
- ✗ 2. Accessory nerve
- ✗ 3. Optic nerve
- ✓ 4. Vagus nerve

Q.9 Which serves as the common reference point for all unipolar chest leads?

Ans
- ✔ 1. Wilson's Central Terminal
- ✘ 2. Phlebostatic axis
- ✘ 3. Kocher's point
- ✘ 4. Erb's point

Q.10 Who discovered the ECG?

Ans
- ✘ 1. Baltazar
- ✘ 2. Newton
- ✘ 3. Goldberger
- ✔ 4. Einthoven

Q.11 Normal PR interval ranges from

Ans
- ✘ 1. 100 -120ms
- ✘ 2. 80 – 100ms
- ✘ 3. 130 – 150ms
- ✔ 4. 120 – 200ms

Q.12 Old myocardial infarction (MI) is characterized by?

Ans
- ✘ 1. Presence of ST segment elevation in ECG
- ✘ 2. Presence of ST-depression in ECG
- ✘ 3. Presence of T-wave inversion in ECG
- ✔ 4. Presence of abnormal Q waves in ECG

Q.13 A bifid P wave in lead II is also known as:

Ans
- ✔ 1. P mitrale
- ✘ 2. P pulmonale
- ✘ 3. Himalayan P waves
- ✘ 4. Tall and peaked P waves

Q.14 How much resistance is needed to construct the ground electrode by placing each of the three limb electrodes and connecting them together to form a central terminal?

Ans
- ✘ 1. 100 ohms
- ✘ 2. 2000 ohms
- ✔ 3. 5000 ohms
- ✘ 4. 1000 ohms

Q.15 Name the atrial arrhythmia

Ans
- ✔ 1. Atrial flutter
- ✘ 2. Junctional ectopic tachycardia
- ✘ 3. Regular R-R interval
- ✘ 4. Reciprocal rhythms

Q.16 When the contour of the P wave is peaked and pointed, it is because of the enlargement of which cardiac chamber?

Ans
- ✘ 1. LV
- ✘ 2. RV
- ✘ 3. LA
- ✔ 4. RA

Q.17 How will the P-R interval be measured in an ECG?

Ans
- ✗ 1. From the end of the P wave to the beginning of the QRS complex
- ✓ 2. From the onset of the P wave to the beginning of the QRS complex
- ✗ 3. From the end of the P wave to the end of the QRS complex
- ✗ 4. From the onset of the P wave to the end of the QRS complex

Q.18 What is the normal PR interval in an ECG?

Ans
- ✓ 1. 3 to 5 small boxes
- ✗ 2. 7.5 to 9 small boxes
- ✗ 3. 5 to 6.5 small boxes
- ✗ 4. 9 to 10 small boxes

Q.19 When there is LVH, the ventricular activation time of leads overlying the left ventricle is_

Ans
- ✗ 1. >0.03 s
- ✓ 2. >0.05 s
- ✗ 3. <0.04 s
- ✗ 4. >0.01 s

Q.20 Atheroma occurs in the layer of

Ans
- ✗ 1. Adventitia
- ✗ 2. Media
- ✓ 3. Intima
- ✗ 4. Abscess

Q.21 ST segment is abnormal when it is elevated or depressed by:

Ans
- ✓ 1. >1 mm
- ✗ 2. >0.5 mm
- ✗ 3. <1 mm
- ✗ 4. <0.5 mm

Q.22 Which is an indirect coronary artery vasodilator used during a stress ECG test?

Ans
- ✓ 1. Dipyridamole
- ✗ 2. Dopamine
- ✗ 3. Epinephrine
- ✗ 4. Digoxin

Q.23 If both leads I and aVF in an ECG are negative, the axis falls within which of the following ranges?

Ans
- ✗ 1. Right axis deviation
- ✗ 2. Left axis deviation
- ✓ 3. Extreme axis deviation
- ✗ 4. Normal axis

Q.24 When the P wave is difficult to recognize, the right arm electrode is moved to the second right intercostal space just beside the sternum and the left electrode to the fourth right intercostal space beside the sternum, this modified lead is known as_

Ans
- ✗ 1. Fontaine lead
- ✗ 2. CR lead
- ✓ 3. Lewis lead
- ✗ 4. CL lead

Q.25 **ST elevation in leads I, aVL, V5, and V6 signify myocardial infarction of which wall?**

Ans
- ✔ 1. Lateral Wall
- ✘ 2. Anterior Wall
- ✘ 3. Inferior Wall
- ✘ 4. Posterior Wall

Q.26 **The characteristic "rabbit ears" pattern, which shows an initial small R wave (r) followed by a larger R wave (R') in V1-V3 leads of an ECG, is mainly suggestive of:**

Ans
- ✘ 1. Left anterior fascicular block
- ✘ 2. Left Bundle Branch Block
- ✘ 3. Left posterior fascicular block
- ✔ 4. Right Bundle Branch Block

Q.27 **Identify the abnormality in the following ECG strip.**

Ans
- ✘ 1. Atrial flutter
- ✔ 2. Atrial fibrillation
- ✘ 3. Ventricular flutter
- ✘ 4. Ventricular fibrillation

Q.28 **All of the following are the criteria of normal sinus rhythm, EXCEPT:**

Ans
- ✘ 1. regular rhythm at a rate of 60-100 bpm
- ✔ 2. each QRS complex is preceded by two or three P waves
- ✘ 3. P waves upright in leads I and II, inverted in aVR
- ✘ 4. the PR interval remains constant, and QRS complexes < 100 ms wide

Q.29 **What is the other name of Cavo tricuspid isthmus**

Ans
- ✘ 1. Atrial tachycardia
- ✔ 2. Atrial flutter
- ✘ 3. Atrial fibrillation
- ✘ 4. Atrial extrasystole

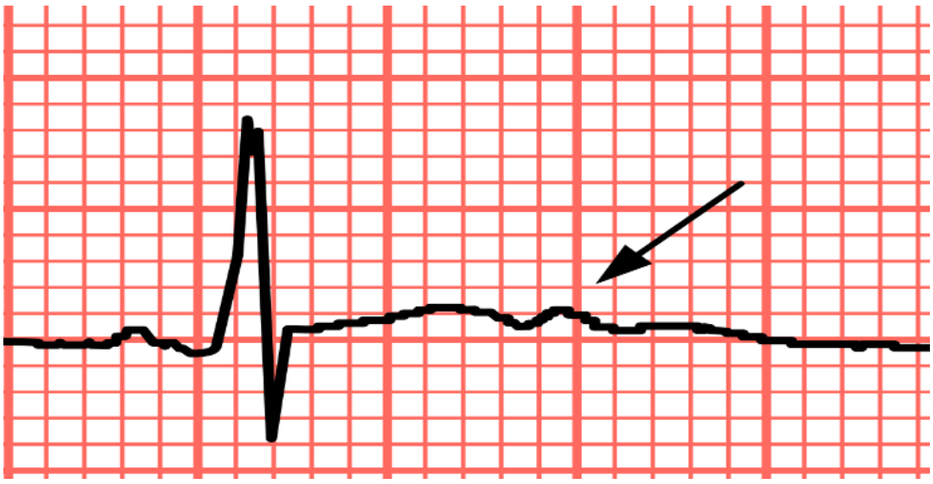
Q.30 **Which are the peak waves in the CVP waveforms?**

Ans
- ✘ 1. P, R and T
- ✘ 2. x and y
- ✔ 3. a, c and v
- ✘ 4. Q and S

Q.31 **In adults, what is the normal electrical axis?**

Ans
- ✘ 1. +30° to -60°
- ✘ 2. +180° to -90°
- ✔ 3. +90° to -30°
- ✘ 4. 0° to 100°

Q.32 Which of the following electrolyte abnormalities mainly causes the ECG changes in the following image?



Ans
- ✗ 1. Hypernatremia
- ✗ 2. Hyponatremia
- ✗ 3. Hyperkalaemia
- ✓ 4. Hypokalaemia

Q.33 In men, the QT interval is prolonged when the QTc measures_

Ans
- ✗ 1. <300 ms
- ✗ 2. 400 ms
- ✓ 3. >440 ms
- ✗ 4. 420 ms

Q.34 What is the principle of hospital?

Ans
- ✗ 1. Community based treatment
- ✓ 2. High quality of patient care
- ✗ 3. Lack of equipments and skilled persons
- ✗ 4. Gender based treatment

Q.35 Which is a unipolar lead of the ECG measures the electrical potential difference between the right arm electrode and a composite electrode representing the zero potential?

Ans
- ✗ 1. aVII lead
- ✗ 2. aVL lead
- ✗ 3. aVF lead
- ✓ 4. aVR lead

Q.36 All of the following points should include patient education for Holter monitoring, EXCEPT:

Ans
- ✗ 1. Keep a detailed record of the patient's daily activities and any symptoms he experiences
- ✗ 2. Stay away from high-voltage areas, magnets, metal detectors, and other electric devices
- ✓ 3. Patients can shower, swim, or bathe while wearing the Holter monitor
- ✗ 4. Record any unusual sensations, such as chest pain, palpitations, dizziness, or shortness

Q.37 ECG feature of asystole

Ans
- ✓ 1. Flat line
- ✗ 2. Absence of QRS complex
- ✗ 3. Prolonged QRS complex
- ✗ 4. Absence of P wave

Q.38 Which of the following best describes the primary function of the cardiovascular system?

Ans
- ✗ 1. To regulate hormone production
- ✗ 2. To provide structural support to the body
- ✗ 3. To control body temperature through sweat glands
- ✓ 4. To transport oxygen, nutrients, and waste products throughout the body

Q.39 Quidine is a

Ans
- ✗ 1. Antihypertensive drug
- ✗ 2. Antihistamine
- ✗ 3. Anti allergic drug
- ✓ 4. Antiarrhythmic drug

Q.40 All of the following are the common ECG changes in myxoedema, EXCEPT?

Ans
- ✓ 1. Heart rate above 120 bpm
- ✗ 2. Bradycardia
- ✗ 3. Low QRS voltage
- ✗ 4. Widespread T-wave inversions

Q.41 Electrocardiographic manifestation of complete RBBB

Ans
- ✗ 1. Peaked P wave in lead II, III, aVF
- ✗ 2. Wide, monophasic R wave in lead I, aVL, V5 & dominant S wave in V1
- ✓ 3. Tall, wide, notched R wave in V1 & delayed, widened S wave in V5, V6
- ✗ 4. Widened & bifid P wave in lead II

Q.42 An irregularly irregular pulse is known as...

Ans
- ✗ 1. Ventricular Tachycardia
- ✗ 2. Ventricular Fibrillation
- ✗ 3. PSVT
- ✓ 4. Atrial Fibrillation

Q.43 Identify the correct equation according to Einthoven's Law.

Ans
- ✗ 1. Voltage in Lead I = sum of the voltages in Leads I and II
- ✗ 2. Voltage in Lead IV = sum of the voltages in Leads I and II
- ✓ 3. Voltage in Lead II = sum of the voltages in Leads I and III
- ✗ 4. Voltage in Lead III = sum of the voltages in Leads I and II

Q.44 Prinzmetal angina is also known as?

Ans
- ✗ 1. Stable angina
- ✗ 2. Classic angina
- ✗ 3. Typical angina
- ✓ 4. Vasospastic angina

Q.45 BE FAST is an acronym used in the management of?

Ans
- ✗ 1. Myocardial infarction
- ✗ 2. Shock
- ✗ 3. Heart failure
- ✓ 4. Stroke

Q.46 A small box on the horizontal axis in a standard ECG represents_

Ans
- ✗ 1. 0.20 seconds
- ✗ 2. 0.1 mV
- ✗ 3. 10 mV
- ✓ 4. 0.04 seconds

Q.47 Weber is a protocol used in

Ans
- ✓ 1. TMT
- ✗ 2. Coronary angiogram
- ✗ 3. MRI
- ✗ 4. Echo

Q.48 Which of the following are posterior leads?

Ans
- ✓ 1. V7, V8, V9
- ✗ 2. Lead I, II, III
- ✗ 3. V1-V6
- ✗ 4. aVL,aVR,aVF

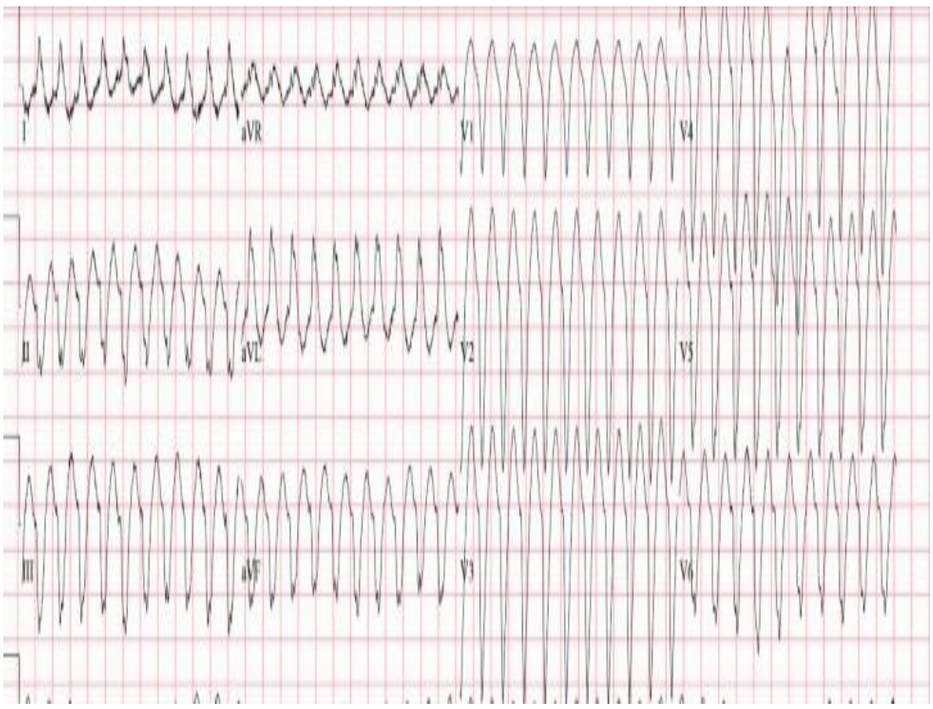
Q.49 How many lobes are present in the right lung?

Ans
- ✓ 1. 3
- ✗ 2. 6
- ✗ 3. 1
- ✗ 4. 4

Q.50 In what percentage of ECG recordings has improper lead placement (for example, reversing two of the limb leads) been estimated to occur?

Ans
- ✗ 1. 0.3 to 3%
- ✓ 2. 0.4 to 4%
- ✗ 3. 0.1 to 1%
- ✗ 4. 0.2 to 2%

Q.51 What is the conduction defect in the following ECG?



Ans
- ✗ 1. Ventricular fibrillation
- ✗ 2. Atrial flutter
- ✓ 3. Ventricular tachycardia
- ✗ 4. Atrial fibrillation

Q.52 Himalayan P waves in an ECG are a hallmark of which of the following conditions?

Ans
- ✗ 1. Aicardi syndrome
- ✗ 2. Spina bifida anomaly
- ✗ 3. Edward syndrome
- ✓ 4. Ebstein's anomaly

Q.53 All of the following are common effects of Theophylline on the ECG, EXCEPT?

Ans
- ✗ 1. Atrial Ectopy
- ✗ 2. Ventricular Ectopy
- ✗ 3. Wide QRS Complexes
- ✓ 4. Sinus bradycardia

Q.54 When both positive and negative electrodes contribute to the deflection in ECG of the lead, the lead is known as_

Ans
- ✓ 1. Bipolar lead
- ✗ 2. Unipolar lead
- ✗ 3. Quadripolar lead
- ✗ 4. Tripolar lead

Q.55 Severe hyperkalemia is diagnosed when the serum potassium level is_

Ans
- ✓ 1. More than 7 mmol/L
- ✗ 2. Less than 6 mmol/L
- ✗ 3. 6.0 to 7.0 mmol/L
- ✗ 4. Less than 3 mmol/L

Q.56 Which of the following is generally associated with bradycardia?

Ans
- ✔ 1. Athletic training
- ✘ 2. Anaemia
- ✘ 3. Hypovolemic shock
- ✘ 4. Hyperthyroidism

Q.57 All of the following statements are true regarding “Torsades de pointes”, EXCEPT?

Ans
- ✘ 1. It is a specific type of abnormal heart rhythm that can lead to sudden cardiac death.
- ✔ 2. It is a monomorphic ventricular tachycardia that exhibits distinct characteristics on the ECG.
- ✘ 3. It is often associated with a prolonged QT interval, which is the heart rate-adjusted lengthening of the QT interval.
- ✘ 4. The ECG may show a visual appearance of the QRS complexes "twisting" or oscillating around the isoelectric line.

Q.58 What is the normal duration of QRS complex?

Ans
- ✘ 1. 0.16 to 0.35 seconds
- ✘ 2. 0.05 to 0.50 seconds
- ✔ 3. 0.06 to 0.10 seconds
- ✘ 4. 0.12 to 0.20 seconds

Q.59 Which ECG limb leads measure the electrical potential difference between the right arm (negative) and the left arm (positive)?

Ans
- ✔ 1. Lead I
- ✘ 2. Lead III
- ✘ 3. Lead IV
- ✘ 4. Lead II

Q.60 How many electrodes are used for holter monitoring?

Ans
- ✘ 1. 12
- ✔ 2. 5
- ✘ 3. 3
- ✘ 4. 10

Q.61 How long does a holter monitor typically record heart activity?

Ans
- ✘ 1. 2mins
- ✘ 2. 1 hour
- ✘ 3. 30 min
- ✔ 4. 24 hrs

Q.62 Which lead in the ECG measures the electrical potential difference between the positive electrode on the left leg and a virtual "null point" derived from the right arm and left arm electrode?

Ans
- ✘ 1. aVL
- ✘ 2. aVX
- ✔ 3. aVF
- ✘ 4. aVR

Q.63 Which electrophysiological activity of the heart is generally not captured on surface ECG?

Ans
- ✘ 1. Atrial Depolarization
- ✔ 2. Atrial Repolarization
- ✘ 3. Ventricular Repolarization
- ✘ 4. Ventricular Depolarization

Q.64 ST elevation in lead III higher than in lead II signifies infarction in the territory supplied by which coronary artery?

Ans
- ✔ 1. RCA
- ✘ 2. Diagonal
- ✘ 3. LCx
- ✘ 4. LAD

Q.65 Which of the following ECG electrodes is placed in the left fifth intercostal space at the midclavicular line?

Ans
- ✘ 1. V6
- ✔ 2. V4
- ✘ 3. V5
- ✘ 4. V3

Q.66 Name the phase that occurs over hours to days in myocardial infarction

Ans
- ✘ 1. Hyperechoic phase
- ✔ 2. Acute phase
- ✘ 3. Chronic phase
- ✘ 4. Evolved phase

Q.67 If the sinus impulse is interrupted within the bundle branches, the abnormality is known as...

Ans
- ✘ 1. Complete Heart Block
- ✔ 2. Bundle Branch Block
- ✘ 3. Sick Sinus Syndrome
- ✘ 4. Sinus Node Dysfunction

Q.68 QRS duration in Right bundle branch block

Ans
- ✔ 1. Above 120ms
- ✘ 2. Below 120ms
- ✘ 3. 50-100ms
- ✘ 4. Below 80ms

Q.69 Identify Bazett's formula for calculating the corrected QT interval.

Ans
- ✘ 1. QTc = QT / RR^ (1/3)
- ✘ 2. QTc = QT + 1.75 * (HR-60)
- ✔ 3. QTc = QT / √RR
- ✘ 4. QTc = QT + 0.154 * (1-RR)]

Q.70 Which of the following sentences is true regarding standard calibration of ECG?

Ans
- ✘ 1. A 10-millivolt electrical signal will be displayed as a 10-mm high and 5-mm wide rectangle on the paper
- ✘ 2. A 1-millivolt electrical signal will be displayed as a 5-mm high and 10-mm wide rectangle on the paper
- ✘ 3. A 10-millivolt electrical signal will be displayed as a 5-mm high and 10-mm wide rectangle on the paper
- ✔ 4. A 1-millivolt electrical signal will be displayed as a 10-mm high and 5-mm wide rectangle on the paper