

# **EHRA Accreditation Exam**

## **- Sample MCQs –**

### **Allied Professionals in Cardiac Pacing and ICDs**



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Dear EHRA Member, Dear Colleague,

As you know, the EHRA Accreditation Process is becoming increasingly recognised as an important step for clinical practices within Europe.

The following slides contain examples of questions from past EHRA Accreditation Exam in AP.

Correct answers are on the last slide so that you may test yourself.



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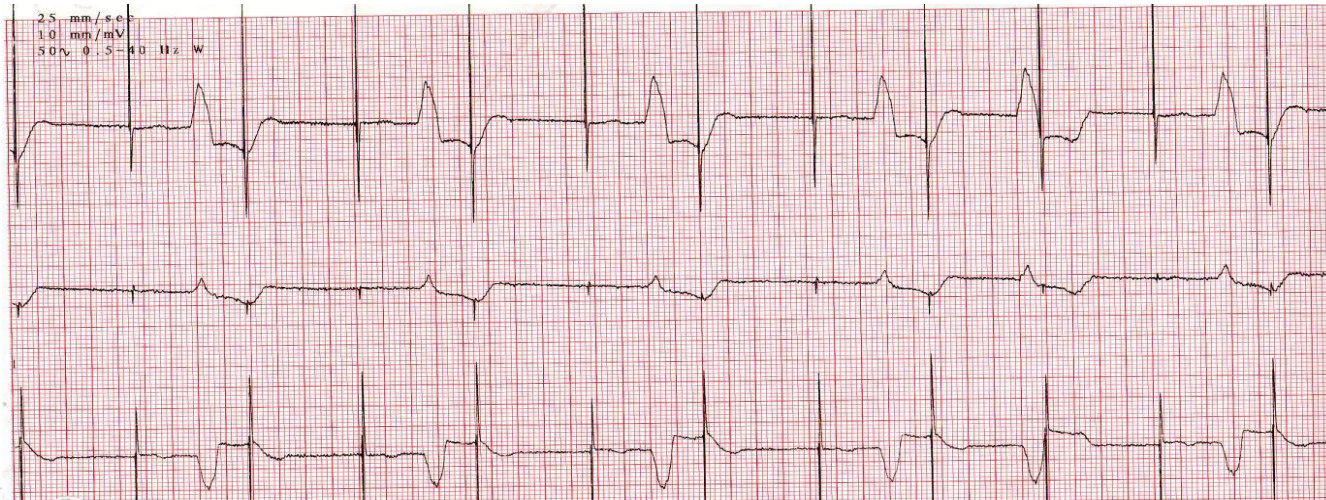
**1. A 58-year-old woman attended the arrhythmia clinic following the implantation of a pacemaker for sinus node disease some five years previously. She is complaining of occasional dizzy episodes. The rhythm strip below was recorded during the pacemaker check:**



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**Which of the following best describes the rhythm strip?**

- a. Atrial oversensing
- b. Atrial undersensing
- c. Intermittent loss of atrial capture
- d. Long atrial latency period
- e. Normal AAI pacing



**2. Which of the following patients with atrial fibrillation would have a CHA2DS2-VASc score of two?**

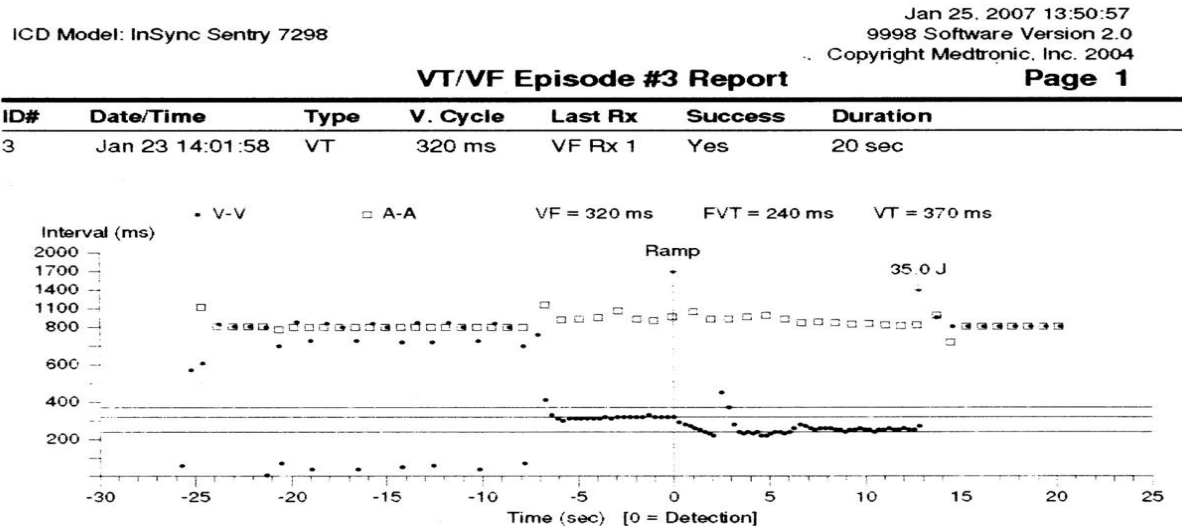


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- a. Female aged 70 with hypertension
- b. Male aged 60 with diabetes
- c. Male aged 80 with a previous CVA
- d. Male, aged 70 with previous MI and heart failure
- e. Male, aged 70 with hypertension

### 3. Which of the following best describes the sequence of events in this interval plot?

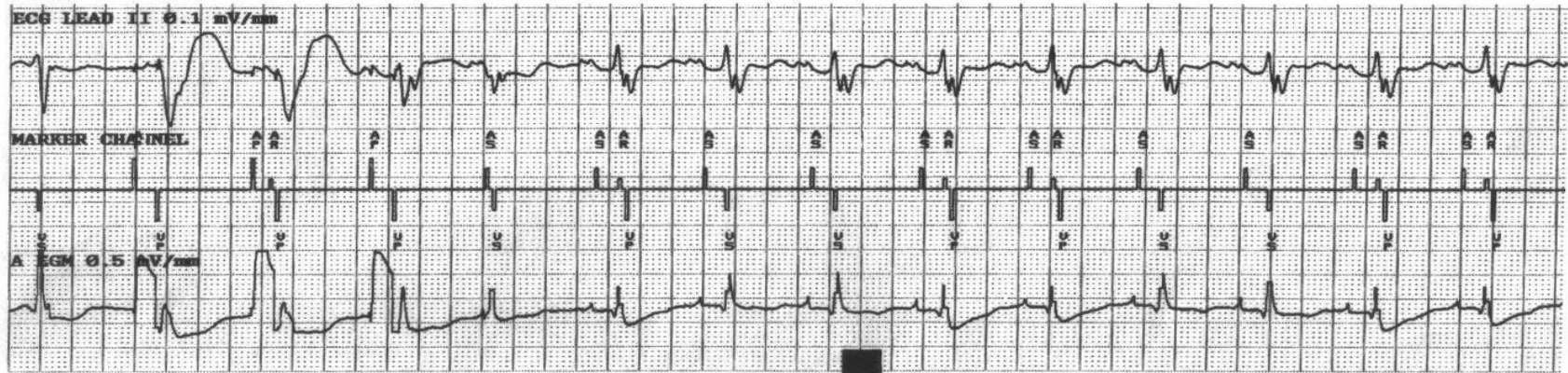
- a. Sinus rhythm, VT, unsuccessful sequence of ramp pacing and 35j shock
- b. Sinus rhythm, inappropriate ramp pacing and 35j shock
- c. Sinus rhythm, VT, unsuccessful sequence of ramp pacing, acceleration of VT and 35j shock
- d. Sinus rhythm, VT, unsuccessful ATP during charge and 35j shock
- e. Sinus rhythm, VT detection due to T wave over sensing inappropriate delivery of ramp pacing and 35j shock



**4. During implantation of a dual chamber pacemaker this tracing is recorded.**

**Which of the following would be the best course of action?**

- a. Decrease the atrial sensitivity
- b. Increase the ventricular output
- c. Increase the PVAB
- d. Reposition the atrial lead
- e. Reposition the ventricular lead







ECG strip showing Atrial Fibrillation (AF) with a rate of 196 bpm. The strip includes three traces: EGM1 (Atrial Fibrillation), EGM2 (Ventricular Fibrillation), and A-A Interval (ms). The A-A interval is marked as 1290 ms. The V-V interval is marked as 1320 ms. The strip is labeled "VF Rx 1 Defib" and "196 J".

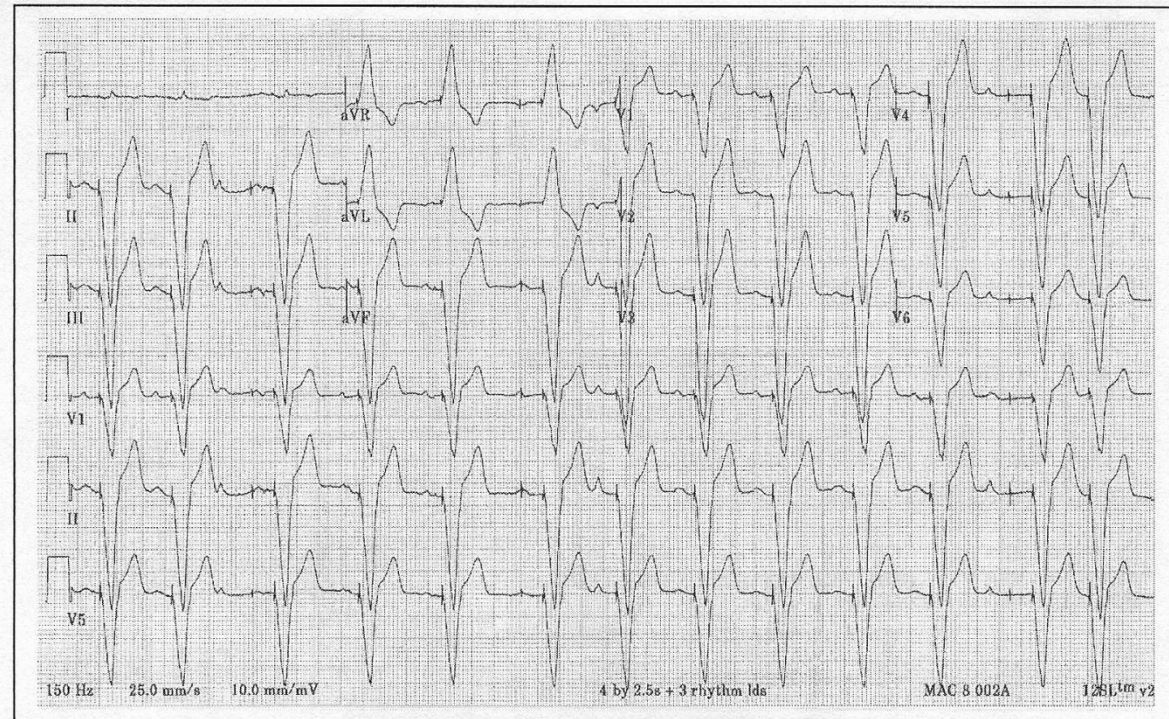
**6. A patient had a dual chamber pacemaker implanted for symptomatic intermittent heart block.**



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**What is shown in the tracing?**

- a. Atrial over-sensing
- b. Atrial under-sensing
- c. Normal DDI pacing
- d. Normal DVI pacing
- e. Normal VDD pacing



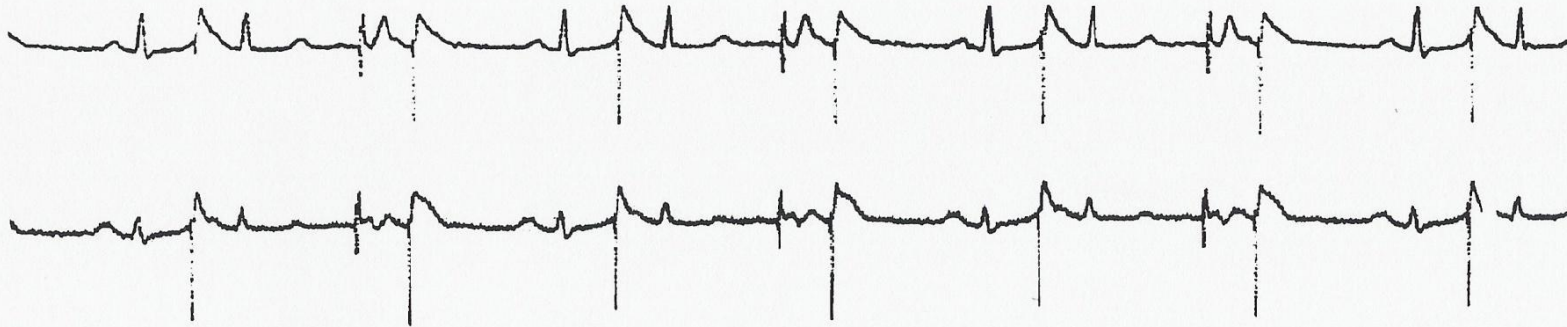
**7. During rounds you are asked to assess this pacemaker ECG from a patient who had a DDD pacemaker implanted the day before.**



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**What is the explanation?**

- a. Atrial lead displacement
- b. Atrial undersensing
- c. Normal DDD pacing
- d. Reversal of lead connections
- e. Ventricular lead displacement



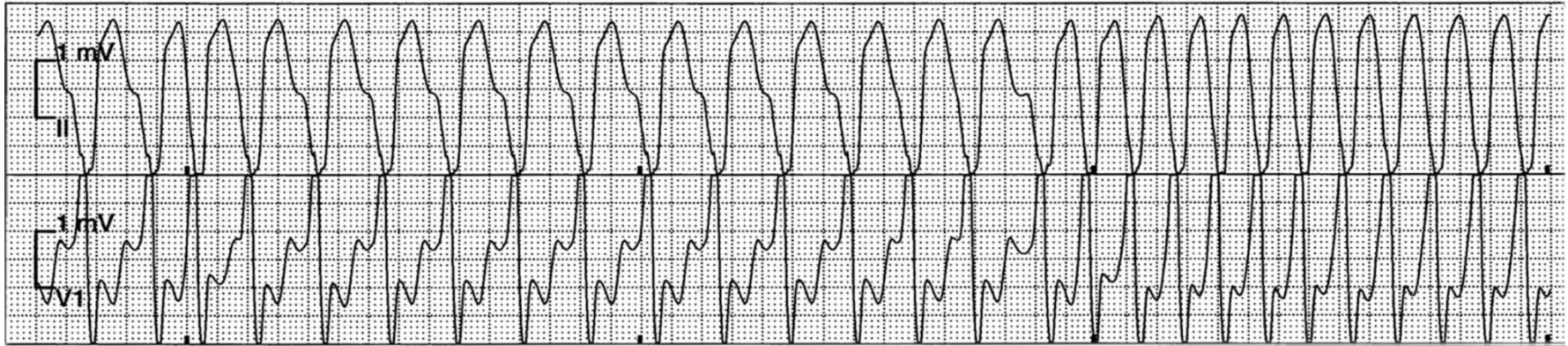


**8. A 56-year old ICD patient was admitted to the hospital due to palpitations and no activity of the device was noted. The patient was put on telemetry and a broad-complex tachycardia was observed. Flecainide was administered to the patient and the patient received a shock from the device.**



**What is the most likely explanation for this recording?**

- a. Acceleration of atrial flutter from 2:1 to 1:1 AV conduction
- b. Acceleration of ventricular tachycardia
- c. Atrial tachycardia accelerated to ventricular tachycardia
- d. Sinus tachycardia accelerated to ventricular tachycardia
- e. Ventricular flutter



**9. A 47-year-old with myotonic dystrophy comes to the clinic complaining of a reduced exercise capacity for a week. A 24 hour ECG is performed and shows second degree AV block.**



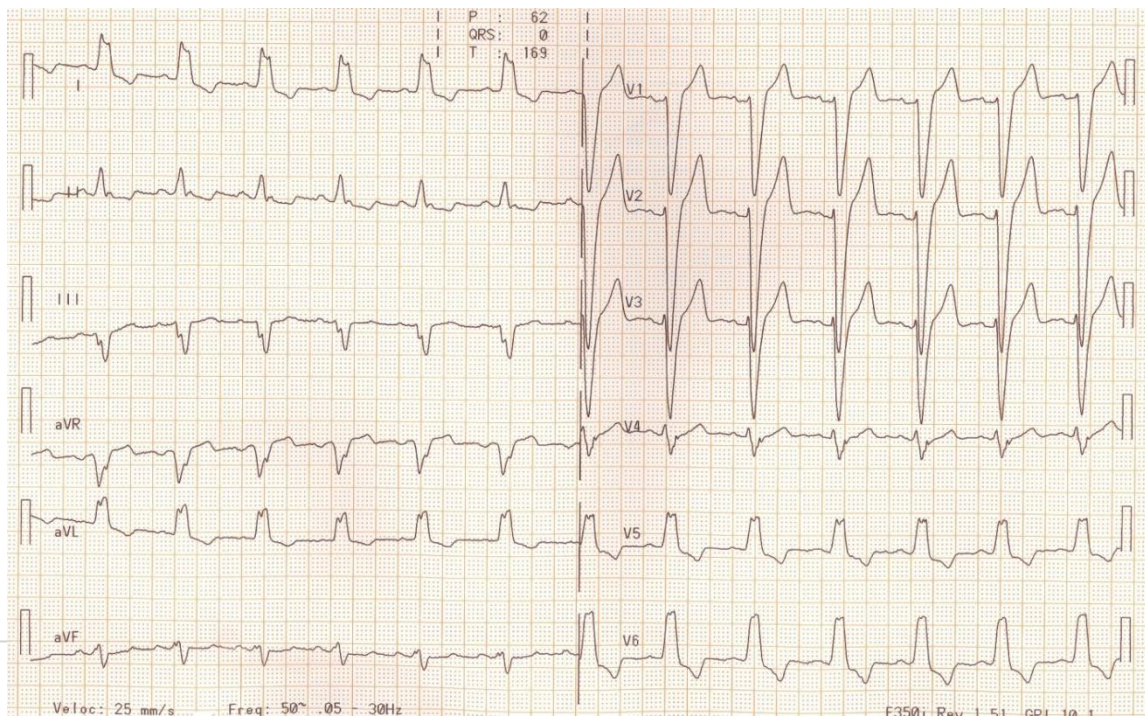
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**Which of the following therapeutic approaches is the most appropriate?**

- a. AAIR pacemaker insertion
- b. DDDR pacemaker insertion
- c. Implantable loop recorder insertion
- d. Perform a diagnostic electrophysiology study
- e. VVIR pacemaker insertion

**10. Which of the following is the correct description of this electrocardiogram?**

- a. Sinus rhythm with left bundle branch block
- b. Sinus rhythm with nonspecific intraventricular conduction disturbance
- c. Sinus rhythm with right bundle branch block
- d. Sinus rhythm with a left free wall accessory pathway
- e. Sinus rhythm with an atrio-fascicular (Mahaim) pathway



**11. A patient's stimulation threshold was 1.0 V at 0.4 ms pulse duration. The pacemaker is programmed to 2.0 V & 0.8 ms duration. Lead impedance measures 1000 Ohm.**

**The output energy for this patient would be:**

- a. 1 X threshold
- b. 2 X threshold
- c. 4 X threshold
- d. 6 X threshold
- e. 8 X threshold



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**12. In a normal person, stroke volume increases by what percentage during exercise?**

- a. 10%
- b. 20%
- c. 50%
- d. 70%
- e. 100%



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**13. Which of the following pharmacologic agents may significantly lower myocardial stimulation thresholds?**

- a. Fludrocortisone
- b. Lidocaine
- c. Verapamil
- d. Isoproterenol
- e. Propafenone



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**14. Which of the following programmed settings would be the safest and most efficient for a threshold measured at 2.0 V and 0.5 ms pulse width?**

- a. 4.0 V & 0.5 ms
- b. 2.0 V & 1.5 ms
- c. 4.0 V & 1.0 ms
- d. 2.5 V & 0.6 ms
- e. 2.5 V & 0.5 ms



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**15. On the radiodensity scale which of the following would appear the most radiopaque?**

- a. ICD lead
- b. Muscle
- c. Blood
- d. Bone
- e. Air



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# ANSWERS

Q. #	Answer	Q. #	Answer	Q. #	Answer
1	E	6	B	11	E
2	E	7	D	12	C
3	C	8	A	13	D
4	D	9	B	14	A
5	E	10	A	15	A