Q1 - A 65-year-old man who experienced a myocardial infarction two weeks ago was referred to exercise-based cardiac rehabilitation. The pre-exercise assessment, including tests of physical fitness was normal, and he was on optimal medical treatment.

What is the recommendation for strength training as part of the exercise-based cardiac rehabilitation program?

A 20-30% of 1RM with 20-25 repetitions in one set, twice a week
B 20-30% of 1RM with 20-25 repetitions in one set, four times a week
C 40-80% of 1RM with 12-15 repetitions in one set, twice a week
D 40-80% of 1RM with 12-15 repetitions in one set, four times a week
E 80-90% of 1RM with 3-5 repetitions in one set, once a week

Q2 - When advising for physical exercise of moderate intensity in general population, the ESC 2021 Guidelines on cardiovascular disease prevention in clinical practice recommend:

A For adults of all ages to strive for at least 30 - 75 min a week of moderate intensity
B For adults of all ages to strive for at least 75 - 150 min a week of moderate intensity
C For adults of all ages to strive for at least 150 - 300 min a week of moderate intensity
D For adults of all ages to strive for at least > 300 min a week of moderate intensity
E The ESC 2021 Guidelines on cardiovascular disease prevention do not set cutoff values for physical exercise

Q3 - Oxygen pulse is a surrogate marker for:

A Dead space ventilation
B Heart rate variability
C Left atrium pressure
D Stroke volume
E Ventilatory threshold

Q4 - The minute ventilation/carbon dioxide production (VE/VCO2) slope determined by CPET is a marker for:

A Chronotropic incompetence
B Dead space ventilation
C  Exercise capacity
D  Oscillatory ventilation
E  Ventilatory efficiency

Q5 - Which of the following factors is associated with an increased relative risk of sudden cardiac arrest/death during moderate- to high-intensity distant running events?

A  Age < 35 years old
B  Family history of type 2 diabetes
C  Female sex
D  Sedentary life style
E  Sinus arrhythmia

Q6 - When conducting an epidemiological study, which step comes first?

A  Obtaining approval for publication
B  Obtaining approval from an ethics committee
C  Obtaining approval from colleagues
D  Obtaining approval from participants
E  Obtaining approval from the Research and Development (R+D) in your institution

Q7 - A 45-year-old endurance female athlete attended the sports cardiology clinic. A mitral valve prolapse was diagnosed at the age of 20-year-old. Echocardiography performed three months before the visit revealed a moderate mitral regurgitation, with no aortic stenosis. The left ventricle was 56mm (32mm/m2) and the ejection fraction was preserved. The ECG showed sinus bradycardia of 42 b.p.m, an incomplete right bundle branch block and T wave inversion in V1-V2.

Which should be the next step to provide accurate exercise recommendations?

A  Considering that the degree of the mitral regurgitation is moderate, no more evaluations are needed at this time
B  To perform a 24-hour Holter ECG monitoring and a maximal exercise test
C  To perform a cardiopulmonary exercise test
D  To perform an exercise echocardiography
E  To perform cardiac magnetic resonance imaging
Q8 - An older patient with CVD presents at your office. There are indications that he/she can be frail as well, so you propose to execute a multidimensional geriatric evaluation (MGE). You already have data on/of: 6-minute walking test, number of medications, grip strength, geriatric depression scale, nutrition (MNA), co-morbidities, timed up and go test, and Katz scale (daily activities).

Which test is still missing?

A Cardiopulmonary exercise test for VO2peak  
B Cognition (MMSE)  
C DEXA scan for muscle mass  
D None of the proposed answers: the test battery is complete  
E Quality of life questionnaire

Q9 - A 35-year-old black triathlon elite athlete presented for pre-participation screening. Family history is unremarkable. He denied any symptoms. His ECG is shown.

What is the most appropriate next step?

A 24-hour holter ECG monitoring  
B Cardiac magnetic resonance  
C Exercise stress testing  
D No need for further investigations  
E Transthoracic echocardiogram

Q10 - A 45-year-old woman with a background of obesity and hypertension was referred to a cardiologist for lifestyle optimization.

Which lifestyle targets are included in the ESC guidelines recommendations?

A Consume 30 grams of unsalted nuts per day  
B Consume at least 200g of fruit and vegetables per day  
C Limit alcohol consumption to a maximum of 100 grams per week  
D At least 150 to 300 minutes of moderate-intensity aerobic physical activity  
E All of the above

Answers: 1-C, 2-C, 3-D, 4-E, 5-D, 6-B, 7-B, 8-B, 9-E, 10-E