



# AIDA4 MASTER FREEDIVER FINAL EXAM

Please **do not write on this question sheet**, use the answer sheet provided. Please read the questions very carefully. If you would like to complete the exam orally, please ask your instructor.

## Question 1

**Which of the following descriptions best describes Functional Residual Capacity (FRC)?**

- A. The maximum amount of air inhaled after full exhale
- B. The additional air that can be inhaled after a normal tidal breath in
- C. The amount of air inhaled and exhaled during normal breathing
- D. The amount of air remaining in the lungs and trachea after a passive exhale

## Question 2

**Which of the following descriptions best describes Residual Volume (RV)?**

- A. The maximum amount of air remaining in the lungs after a forceful exhale.
- B. The additional air that can be inhaled after a normal tidal breath in
- C. The amount of air inhaled and exhaled during normal breathing
- D. The amount of air remaining in the lungs and trachea after a passive exhale

## Question 3

**Which of the following statements regarding Failure Depth is NOT true?**

- A. Failure depth is the depth at which lactic acid in the legs makes it no longer possible to kick down any further
- B. Failure depth is the depth at which Residual Volume is reached and air can no longer be brought up from the lungs to equalise
- C. Failure Depth will not be deeper for divers with a greater Total Lung Capacity
- D. Failure Depth can be made deeper by training to decrease Residual Volume and increase Vital Capacity

## Question 4

**What are the advantages for a freediver of stretching and increased flexibility?**

- A. Decrease their residual volume
- B. Increase vital capacity
- C. Reduced risk of injury
- D. All of the above

## Question 5

**At what depth would a freediver with a Total Lung Capacity of 6L and a Residual Volume of 1.5L reach Failure Depth?**

- A. 10m
- B. 22m
- C. 30m
- D. 40m

## Question 6

**If a freediver with a Total Lung Capacity of 4L trains to reduce his Residual Volume from 25% to 20% - what will be the increase in his failure depth?**

- A. 10m
- B. 15m
- C. 20m
- D. 30m

## Question 7

**Why would a freediver want to include FRC Diving as part of his training?**

- A. Allows them to train mouthfill equalisation
- B. Gets their body ready for deeper dives
- C. Helps to induce the bloodshift
- D. All of the above



#### Question 8

**Which of the following precautions would a freediver want to take when performing FRC dives?**

- A. Keep head tucked in and relax the shoulders
- B. Make small arm movements
- C. Keep a hand close to the rope as negative buoyancy may be earlier than normal
- D. All of the above

#### Question 9

**A freediver has a lung capacity of 6L and an RV of 1.5L. At which depth should he attempt to fill his mouth on descent if he wants to use the mouthfill technique to increase his maximum depth of equalisation?**

- A. At 30m
- B. Before he reaches 30m
- C. Between 30m and 40m
- D. It doesn't matter, wherever he feels comfortable

#### Question 10

**Which of the following statements regarding the mouthfill technique is NOT correct?**

- A. You can train to increase the amount of air taken for mouthfill
- B. The maximum depth at which a mouthfill can be taken depends on the freediver's residual volume
- C. Mouthfill is a good way to equalise below residual volume because it does not put stress on the lungs and can prevent a lung squeeze when it's done carefully
- D. Once the mouthfill has been taken, the glottis (vocal cords) should be left open to allow air to flow freely up from the lungs

#### Question 11

**Which of the following could be a disadvantage of "packing"?**

- A. Increased buoyancy
- B. Increased risk of lung injury
- C. Increased tension at the start of the dive
- D. all of the above

#### Question 12

**A freediver with a 4L Total Lung Capacity and a Residual Volume of 1L is able to pump an extra 0.5L of air into his lungs using "packing". At what depth would he reach Residual Volume, WITH packing?**

- A. 20m
- B. 25m
- C. 35m
- D. 45m

#### Question 13

**A freediver with a Total Lung Capacity of 4L and a Residual Volume of 1L is able to pump an extra 0.5L of air into his lungs using "packing". At what depth would he reach Residual Volume, WITHOUT packing?**

- A. 20m
- B. 25m
- C. 30m
- D. 40m

#### Question 14

**What can you do to help someone who is displaying symptoms of Decompression Illness (DCI) while you are waiting for medical assistance to arrive?**

- A. Get the patient to drink alcohol
- B. Administer 100% oxygen and drink at least 1L of water per hour
- C. Walk patient around to ease pain in joints
- D. Administer massage to the patient

#### Question 15

**If a freediver is able to reach 10m on an FRC dive with a surface mouthfill, the freediver can then perform the same mouthfill at 20m on a full lung dive what depth could they potentially reach?**

- A. 30m
- B. 40m
- C. 50m
- D. 60m



#### Question 16

**What is the rule for calculating surface interval using time?**

- A. Time x 1
- B. Time x 2
- C. Time x 3
- D. Time x 4

#### Question 17

**What is the rule for calculating surface interval using depth**

- A. Depth / 3
- B. Depth / 5
- C. Depth / 7
- D. Depth / 8

#### Question 18

**Which of the following are common signs or symptoms of DCI?**

- A. Partial paralysis
- B. Euphoria
- C. Extreme hunger
- D. All of the above

#### Question 19

**Which of the following statements best describes the effect of Henry's Law, which can result in Decompression Illness (DCI)?**

- A. As the freediver descends, the lack of oxygen in his tissues makes space for nitrogen which fills the gaps as it is the other main component of air
- B. As the freediver descends, the partial pressure of the carbon dioxide in his lungs builds up until the carbon dioxide is forced into his tissues and blood causing DCI
- C. As the freediver descends, the partial pressure of the gases in his lungs increases with the ambient pressure, this forces nitrogen, which cannot be metabolised, into his tissues and blood at higher pressures than on the surface
- D. As the freediver descends, the volume of the gases in his lungs decreases until not enough nitrogen is available to sustain the metabolism

#### Question 20

**Which of the following could help to reduce the risk of DCI from freediving?**

- A. Ensure you are adequately hydrated
- B. Take a break of at least two hours between freediving sessions on the same day
- C. Limit your total diving for the day
- D. All of the above

#### Question 21

**A pulse Oximeter measures \_\_\_\_\_.**

- A. The expected dive time of the athlete
- B. The weight of the Athlete
- C. The length of the rope
- D. Heart rate and blood oxygen saturation

#### Question 22

**Which of the following is NOT food that could potentially risk mucus production in certain people?**

- A. Milk
- B. Orange juice
- C. Wheat Bread
- D. Blueberries

#### Question 23

**Which of the following is NOT a lock position for Frenzel?**

- A. T Lock
- B. K Lock
- C. S Lock
- D. H Lock

#### Question 24

**Which one of the following could be described as active recovery?**

- A. Walking moderately for about an hour
- B. Cycling Intensely for 15 minutes
- C. Sprinting 100m
- D. Interval training



#### Question 25

**In which case would suspect dehydration?**

- A. Transparent urine, headache, tiredness
- B. Yellow urine, muscle twitches
- C. Dark yellow urine, no other symptoms
- D. All of above

#### Question 26

**Which of the following is a good way to decrease your Residual Volume?**

- A. Apnea Walking
- B. Exhale Stretches
- C. Static Tables
- D. CO<sub>2</sub> Tables

#### Question 27

**Which of the following might help a freediver to recover from a freediving session in cold water?**

- A. Herbal Tea
- B. Coca cola
- C. Coffee
- D. Caffeine energy drink

#### Question 28

**Fluid goggles may need to be combined with what piece of equipment?**

- A. Wetsuit
- B. Nose Clip
- C. Fins
- D. Dive Computer

#### Question 29

**What is the formula for calculating your maximum heart rate?**

- A. 220 minus your age
- B. Resting heart rate multiplied by 3
- C. Age multiplied by 4
- D. The year of your birth -36

#### Question 30

**Which of the following could be described as a physical therapy?**

- A. Massage
- B. Aromatherapy
- C. Applying moisturiser lotion
- D. Meditation

#### Question 31

**Which are the best sources of antioxidants?**

- A. Fruits
- B. Vegetables
- C. Supplements of vitamin A, C, E
- D. All above

#### Question 32

**Which one of the following training sessions on an AIDA course can an AIDA Instructor assistant lead?**

- A. An open water session
- B. A stretching session
- C. A theory session
- D. An Introduction to duck diving

#### Question 33

**Which of the following is NOT a physiological sign of overtraining?**

- A. Decreased energy
- B. Decreased appetite
- C. Decreased VO<sub>2</sub> max
- D. Decreased breath up time required

#### Question 34

**Which of the following is NOT a psychological sign of over training?**

- A. Anxiety
- B. Euphoria
- C. Insomnia
- D. Depression



**Question 35**

**Which of the following would NOT be described as a relaxation technique?**

- A. Meditation
- B. Aromatherapy
- C. Walking
- D. Sit ups

**Question 36**

**Which of the following is NOT a good source of hydration?**

- A. Water
- B. Coffee
- C. Herbal tea
- D. Isotonic sports drink

**Question 37**

**A freediver with a residual volume of 20% would reach Failure Depth at which depth?**

- A. 30m
- B. 35m
- C. 40m
- D. 45m

**Question 38**

**Which of the following is good Heart range for increasing cardiovascular fitness?**

- A. Less than 50 BPM
- B. 50 - 70 BPM
- C. 70- 80 bpm
- D. More than 80 BPM

**Question 39**

**Which of the following is not a Symptom of Decompression Illness?**

- A. Extreme Tiredness or Fatigue
- B. Vertigo or Balance problems
- C. Congestion
- D. Nausea / Sickness

**Question 40**

**Flexibility of the \_\_\_\_\_ may help increase Vital Capacity.**

- A. Soft Palate
- B. Neck
- C. Intercostal Muscles
- D. Calf Muscles

**Question 41**

**Which muscle do we want to make more flexible to decrease residual volume?**

- A. Diaphragm
- B. Biceps
- C. Triceps
- D. Deltoids

**Question 42**

**Which of the following foods might you want to remove from your diet before deep training sessions?**

- A. Brown Rice
- B. Wheat Bread
- C. Oily Fish
- D. Broccoli

**Question 43**

**Which of the following is NOT a reason that freedivers are more likely to suffer from dehydration?**

- A. Sweating in the suit
- B. Immersion diuresis
- C. Breathing
- D. Equalising

**Question 44**

**Which of the following would NOT be regarded as a good snack whilst freediving?**

- A. Electrolyte drink
- B. Banana
- C. Cheese Sandwich
- D. Nuts



**Question 45**

**Which of the following is NOT a function measured using a dive computer during the dive?**

- A. Depth of dive
- B. Time of dive
- C. Oxygen consumption on the dive
- D. Temperature of the water

**Question 46**

**Assistant instructors may NOT \_\_\_\_\_.**

- A. Teach New skills
- B. Supervise a training table
- C. Supervise a group stretching session
- D. Set up the Buoys and lines for the open water session

**Question 47**

**Which of the following is NOT a form of Yoga?**

- A. Ashtanga
- B. Pranayama
- C. Iyengar
- D. Jamiesons

**Question 48**

**Antioxidants are used for \_\_\_\_\_.**

- A. Disarming free radicals
- B. Improving  $VO_2$  max
- C. Increasing tolerance to  $CO_2$
- D. A source of protein

**Question 49**

**Which one of the following is NOT a sign of Decompression Illness?**

- A. Speech Disturbance
- B. Behavioral Changes
- C. Unsteady Manner of walking
- D. Cherry Red Lips

**Question 50**

**What would you choose to consume within the first hour after intense pool DYN training (lactic acid and hypoxic) to aid your recovery?**

- A. Water
- B. Water and eat the complex meal of carbs, proteins and fats when i get home (aprox 2 hours after training)
- C. Chocolate bar
- D. Water and protein shake with fruits

**REMEMBER**

**NEVER EVER FREEDIVE ALONE, ALWAYS DIVE WITH AN EXPERIENCED BUDDY!**