

# ACSM-GEI® - Quiz Questions with Answers

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## Domain I: Class Design

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Domain I: Class Design

1.

With regard to a class involving high-intensity movements such as sprints, which of the following statements is **correct**?

**Type II muscle fibers will be more heavily emphasized**

Type I muscle fibers will be more heavily emphasized

An individual's distribution of type I and type II fibers throughout the body is based purely on training adaptations

Type V muscle fibers tend to be better suited for high-intensity exercise than type II fibers are

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*Correct answer: Type II muscle fibers will be more heavily emphasized*

*Type II muscle fibers are designed for quick, explosive efforts. As a result, they tend to fatigue quickly. Type I fibers are designed for longer duration, endurance-type activities. These muscle fibers take a very long time to fatigue, but they do not provide as much power or strength output.*

*The distribution of muscle fiber types throughout one's body is primarily based on genetics. There is no such thing as type V muscle fibers in this context.*

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2.

Which of the following is **true** of breathing patterns used during most yoga classes?

**Upward movements should be paired with an inhalation, downward movements should be paired with an exhalation**

The breath should be held during particularly hard poses

Breathing should be natural and no cueing is required for a specific pattern of breathing

Breathing should only be performed with the nose, not with the mouth during class

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*Correct answer: Upward movements should be paired with an inhalation, downward movements should be paired with an exhalation*

*Much like Pilates, pairing the breath with the movement is critical in yoga. This is a big part of the mind-body connection.*

*Breathing through the mouth and nose is acceptable. Breath should never be held during poses.*

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3.

Which of the following is a major drawback to using barbells during group exercise classes?

**Barbells only allow participants to perform bilateral exercises**

Barbells only allow participants to perform unilateral exercises

Barbells cannot be easily adjusted to increase or decrease resistance

Barbells take up significant amounts of space in a group fitness class

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*Correct answer: Barbells only allow participants to perform bilateral exercises*

*While there may be some unilateral exercises an advanced participant could perform with a barbell, the implement is designed strictly for bilateral use.*

*Barbells can be very easily and quickly adjusted by participants in a class. Barbells take up very little room, as participants can each have their own, along with weights, at their station during class.*

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4.

Which of the following statements regarding yoga is **false**?

**Individuals with hypertension can perform any and all yoga postures without issue**

Pregnant women should avoid breath retention during yoga classes

Yoga can pose injury risk if class participants attempt to stretch beyond their limits

Yoga translates from Sanskrit to "yoke" or "unite"

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*Correct answer: Individuals with hypertension can perform any and all yoga postures without issue*

*Some postures, such as downward dog, in which the head hangs lower than the heart, are inappropriate for those with high blood pressure. This position can cause excess stress on the cardiovascular system of these individuals.*

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5.

For the average person, which of the following measurements is the **best** indicator of the relative stress a group exercise participant's body is experiencing during a class as a result of the length of the class, environmental conditions, and intensity of exercise?

Heart rate

Respiration rate

Amount of sweat produced

Subjective reports of fatigue

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*Correct answer: Heart rate*

*Apart from those on beta blocker medications, heart rate gives the best indication of how hard a person is working during an exercise class.*

*Respiration rate can be a good indicator of stress, but does not provide as much meaningful data as heart rate does. The amount of sweat produced does not provide an indication of the amount of stress a person's body is experiencing. Subjective reports of fatigue are important to consider, but they do not provide as much objective and meaningful data with regard to stress on the body as heart rate does.*

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6.

When choosing music for a yin yoga class, what is an appropriate BPM range?

**70-100 BPM**

110-140 BPM

150-160 BPM

165-185 BPM

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*Correct answer: 70-100 BPM*

*For more relaxed yoga classes, the music should reflect that in order to set the right mood. A power yoga class might necessitate more intense music.*

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7.

Which of the following pieces of equipment is **not** ideal for providing resistance for bent over rows?

**BOSU**

Kettlebell

Barbell

Tubing

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*Correct answer: BOSU*

*A BOSU is meant to challenge balance and not resistance for an exercise.*

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**8.**

What is the **minimum** number of days per week recommended to perform strength-based exercises?

**2**

1

3

4

*Correct answer: 2*

*According to the ACSM, two days is the minimum number of days recommended to work on strength training. One day could work; however, the amount of total volume and time dedicated is too great for most people to achieve. When workouts are spread over at least two days, it is much easier to achieve enough total volume in order to make significant anaerobic adaptations.*

*Three or four days is ideal for many people as it allows them to spread their volume out over many days, as well as allowing for stressing certain muscle groups twice per week, which can be more beneficial than just once. However, if two days is all someone can commit to strength training, it is enough to elicit the desired results.*

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9.

Of the following, which depicts the **most** ideal order of exercises?

**Barbell squat, push-ups, walking lunges, BOSU shoulder press, hammer curls**

Barbell squat, hammer curls, burpees, bench press, gliding disc reverse lunge

Burpees, band tricep extensions, balance board squat thruster, dumbbell bent over row

Dumbbell floor press, plank, barbell curls, barbell squat, jump rope

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*Correct answer: Barbell squat, push-ups, walking lunges, BOSU shoulder press, hammer curls*

*There is never one correct way to do any exercise. However, there can be a more ideal or beneficial way. In this case, it is preferred that big, multi-joint movements are completed first, while clients are most fresh and ready to exercise. This means that single joint exercises should be performed after squats or bench press. When comparing something like a back squat to tricep extensions, from the floor up, we have muscles like the gastrocnemius that does plantarflexion, the quadriceps extend the knee, the hamstrings and gluteus maximus extend the hip, the gluteus medius stabilizes the knee, the spinal erectors keep the back straight, the deep core abdominals stabilize the spine, the latissimus dorsi and rhomboids stabilize the upper back. This example is obviously extreme, but it helps paint a picture of how much goes into a good back squat.*

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**10.**

Which of the following is **not** an important consideration for an indoor group class setup?

**Weather**

Temperature

Flooring

Ventilation

*Correct answer: Weather*

*Assuming the building is up to code, the weather should have no effect on the environment of the class. Properly installed HVAC systems will allow classes to operate as normal, regardless of outdoor conditions.*

*The temperature should be carefully controlled depending on the type of class. High intensity classes should be kept between 60°F and 70°F, while hot yoga classes can be warmer due to the lower intensity nature of the class.*

*Flooring is important because it provides both shock absorption and stability. If the appropriate floor is not used, students may be seriously injured.*

*Making sure fresh air is being circulated helps ensure the room does not smell bad and become stale.*

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**11.**

Which of the following is the **most important** consideration when designing a class focused on increasing the muscular strength of participants?

**Ensuring that clients fatigue within the anaerobic window**

Ensuring that there are plenty of super sets included in the workout

Ensuring that cluster sets are primarily used during the workout

Ensuring that barbells are used during the class

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*Correct answer: Ensuring that clients fatigue within the anaerobic window*

*In order to increase strength, participants must fatigue within the anaerobic window. If participants do not fatigue within this window, the gains will be more similar to endurance improvements rather than strength improvements.*

*Super sets and cluster sets are generally used to increase muscular endurance. Barbells are a good tool to use, but there are plenty of pieces of equipment that can be used during a strength training class.*

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12.

Which of the following statements is **true** regarding strength training classes?

**Strength training classes can consist of purely bodyweight movements**

Strength training classes are never choreographed

Strength training classes are designed only for men or high-level female athletes

Strength training classes must include movement in the horizontal plane to be considered a "true" strength-based class

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*Correct answer: Strength training classes can consist of purely bodyweight movements*

*Some people have made a career and have based their entire fitness regimen on pure bodyweight workouts. While equipment can help to provide some variety during a strength training class, it is not altogether necessary.*

*Strength training classes can be choreographed or nonchoreographed. Strength training classes are for everyone. Strength training classes will likely include movement in the horizontal plane, but it is not a requirement.*

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**13.**

Which of the following is **true** regarding the current research on music during exercise?

**Listening to music while exercising on a cardiovascular machine, such as a treadmill, can have a profound effect on various physiological measures**

Listening to music during group exercise classes has been definitively shown to help participants burn more calories than working out without music

There has been more research performed on the effect of music during group exercise than in any other area of health and fitness

If a participant doesn't have good rhythm, they would be better off taking a nonchoreographed group exercise class where music is not an integral component

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*Correct answer: Listening to music while exercising on a cardiovascular machine, such as a treadmill, can have a profound effect on various physiological measures*

*Research has demonstrated that music can play an important role during exercise when participants are cycling, walking on a treadmill, or using a similar cardiovascular apparatus. However, it has not yet been shown that music during group exercise changes performance or any physiological markers. This is mainly because it is very difficult to study these things in a meaningful way in a group exercise setting.*

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**14.**

Which of the following statements regarding back-to-back training days is **true**?

**Participants can exercise on back-to-back days. However, they should ensure that they workout different muscle groups during each session to avoid overuse.**

It is perfectly safe for group fitness participants to perform strength training exercises on back-to-back days for the same muscle group

Squats should never be performed on the same day as bridges or straight leg raises, as these exercises can reduce the ability of the leg muscles to perform an effective squat

Legs should only be trained on Mondays, as research has shown this to be the most effective day for improving leg strength. Therefore, all other exercise sessions should be planned around a Monday leg workout.

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*Correct answer: Participants can exercise on back-to-back days. However, they should ensure that they workout different muscle groups during each session to avoid overuse.*

*Working out multiple days in a row is a great thing, and this should be encouraged in participants. However, to avoid overuse injuries, group fitness instructors need to counsel participants on which exercises should be performed when. For example, if a participant trained his back and biceps on Tuesday, he should avoid training these muscle groups on Wednesday.*

*There is nothing wrong with performing multiple different leg exercises on the same day. However, group instructors should be sure to structure the program in such a way as to meet participant goals most effectively. There is no definitive research on specific days of the week leading to better results for a given muscle group.*

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**15.**

How can you apply the FITT principle to a group fitness class?

**The FITT principle will allow you to create an overarching outline for your class, from the amount of days of exercise to the type of exercise executed and the intensity at which your clients will perform at**

With the FITT principle, you can design a specific program for your class to follow; outlining all exercises and their progressions

The FITT principle will allow you to outline safety procedures in the instance of an injury during class

The FITT principle will help you create a health screening test for new clients

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*Correct answer: The FITT principle will allow you to create an overarching outline for your class, from the amount of days of exercise to the type of exercise executed and the intensity at which your clients will perform at*

*The FITT principle is an acronym for Frequency, Intensity, Time, and Type. The main goal of using it is to create a general outline for a workout routine. Frequency refers to how many days per week the class will be held. Intensity, while seemingly self explanatory, can refer to volume and amount of weight lifted in a strength class. In terms of cardio classes, it can refer to heart rate. The next parameter is Time. This should be manipulated based on what type of exercise is being performed. Lastly, Type refers to what specific kind of exercise you will be having your class do, be it cardio, strength, dance or some combination of multiple disciplines.*

*The FITT principle is meant to help make a broad outline of class design. Once you have done that, then you must create a more specific program to follow. The FITT principle does not outline safety procedures or provide guidelines for a health screen test.*

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16.

What is the ideal flooring material for a kickboxing class?

**Suspended hardwood**

Carpet

Foam puzzle piece mats

Concrete

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*Correct answer: Suspended hardwood*

*For a class such as dynamic as kickboxing, it is important to have a good balance of stability and shock absorption.*

*Some of these options, like carpet and foam mats, only provide cushioning, but do not offer stability. Concrete offers no shock absorption and can be slippery.*

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17.

Which of the following movements involves resisted scapular retraction?

**Reverse flies**

Lateral raises

Seated shoulder press

Push-ups

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*Correct answer: Reverse flies*

*Reverse flies actively train scapular retraction.*

*The lateral deltoid is the prime mover for lateral raises. The scapula goes through upward rotation during this movement.*

*During shoulder press, the scapula will likely be retracted to provide stability, but they aren't being actively resisted to strengthen them.*

*The scapula will be working on protraction as one of the primary movements of a push-up.*

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18.

Which anatomical plane of motion divides the body into left and right halves?

**Sagittal**

Frontal

Transverse

Proximal

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*Correct answer: Sagittal*

*The sagittal plane divides the body into left and right halves.*

*The frontal plane divides the body into anterior and posterior halves, and the transverse plane divides the body into superior and inferior halves.*

*Proximal is a spatial relationship term that describes something being closer to the reference point.*

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19.

Which of the following is **not** a benefit of using a rowing machine for exercise?

**Rowing machines allow participants to perform many different movements and exercises**

Rowing machines are low impact devices

Rowing machines can provide excellent cardiovascular exercise

Rowing machines allow for a true total body workout

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*Correct answer: Rowing machines allow participants to perform many different movements and exercises*

*Apart from very new, specialized rowers that can be transitioned into ski ergs, traditional rowing machines only allow participants to row. There are no other exercises available with this machine.*

*Rowing machines are considered low or no-impact devices. Rowing machines provide one of the best ways to stimulate the cardiovascular system. Rowing machines use muscles of the upper body, lower body, and trunk with every pull.*

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20.

Which of the following is **true** of resistance exercise in the water?

**When submerged, most exercises will be concentric in nature**

When submerged, most exercises will be eccentric in nature

When submerged, most exercise will be isokinetic in nature

When submerged, most exercise will be isometric in nature

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*Correct answer: When submerged, most exercises will be concentric in nature*

*Because water resists all movements, most exercises will be mainly concentric. This is known as positive resistance exercise and can be a useful tool for decreasing DOMS or delayed onset muscle soreness in the days following exercise.*

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**21.**

Which of the following methods would serve to **decrease** the intensity of a step class?

**Lowering the step height**

Increasing the tempo

Holding light dumbbells during the movements

Raising the step height

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*Correct answer: Lowering the step height*

*Steps can be easily raised or lowered during a step class. Lowering the step will serve to decrease the intensity of the class, while raising the step, increasing the tempo, and adding weight will all increase the intensity.*

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**22.**

For a lateral step over movement on a BOSU ball, which of the following approaches would be **most** appropriate and **most** efficient?

**A side approach**

A front approach

A rear approach

A diagonal approach

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*Correct answer: A side approach*

*Lateral step overs are best completed through the use of a side approach.*

*While one could potentially perform lateral step overs using a different approach, the side approach is the most efficient way to perform this exercise.*

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**23.**

Which of the following options would impart the **least** amount of joint impact force during a burpee exercise?

**Walking the legs into all positions of the burpee instead of jumping**

Jumping the legs backward during the bottom portion of the exercise, but not jumping the legs forward

Jumping the legs forward during the bottom portion of the exercise, but not jumping the legs backward

Hopping slightly at the top of the movement, but walking the legs in and out at the bottom of the movement

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*Correct answer: Walking the legs into all positions of the burpee instead of jumping*

*Burpees can be modified in a number of ways to make them easier/harder, or lower/higher impact. In order to fully remove joint impact forces, eliminating all plyometric portions of the movement will be necessary.*

*All of the choices on this list include high impact forces at one point or another except for walking the legs in and out during the movement.*

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**24.**

Which of the following is the **best** description of floor-based cardio classes?

**Group exercise classes which don't require the use of equipment**

Group exercises classes that use only one piece of equipment

Group exercise classes that emphasize movements performed exclusively in prone or supine positions

Group exercise classes that use different types of flooring, such as carpeting or hardwood, based on the types of participants

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*Correct answer: Group exercise classes which don't require the use of equipment*

*Sometimes, for one reason or another, there is no equipment available for a class. Alternatively, some group fitness instructors may find it prudent to start beginners with no equipment so that they can practice and learn the movements that will later be used with other pieces of equipment. These types of classes are known as "no-equipment" classes or floor-based classes.*

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**25.**

What is the "FITT" principle?

**Frequency, Intensity, Time, Type**

Frequency, Interval, Time, Technique

Format, Intensity, Time, Technique

Format, Interval, Type, Time

*Correct answer: Frequency, Intensity, Time, Type*

*The FITT principle gives guidelines for designing workout programs for clients. Frequency is how often workouts are done per week. Intensity determines how hard a client will work, which can change depending on what type of exercise is being done. Time is how long the workout will last. This should be manipulated based on what type of exercise is being done and also client goals. Type refers to the specific workout style. This could be strength training, steady state cardio, HIIT, yoga, etc.*

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**26.**

What type of flooring is best suited for kickboxing classes?

**Suspended hardwood**

Concrete

Carpet

High-density EVA foam

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*Correct answer: Suspended hardwood*

*The type of flooring is an important consideration for group classes, as certain movements can be unsafe if the material doesn't meet the needs of the class. Suspended hardwood provides shock absorption due to the dense foam and surface stability when appropriate footwear is worn.*

*Concrete does not provide any shock absorption.*

*While carpet provides adequate shock absorption, it is not ideal for kickboxing as the surface is not stable enough for dynamic movements.*

*Foam "puzzle" flooring provides excellent shock absorption, but is not stable and tends to come apart when lateral forces are applied.*

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**27.**

In a Pilates class, which of the following **best** describes the breath pattern that should be utilized?

**Inhalations should occur when the extremities abduct and move away from midline, and exhalations should occur when the limbs return to the center and adduct**

Exhalations should occur when the extremities abduct and move away from midline, and inhalations should occur when the limbs return to the center and adduct

Participants in a Pilates class are instructed to simply "breathe in whatever way feels most natural"

Participants in a Pilates class are instructed to hold their breath during movements and only to breathe at rest

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*Correct answer: Inhalations should occur when the extremities abduct and move away from midline, and exhalations should occur when the limbs return to the center and adduct*

*Coordinating breathing with movement is a cornerstone of Pilates classes. This is a huge area of emphasis and one that most teachers spend lots of time focusing on before, during, and after class.*

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28.

Which of the following is an appropriate tempo for an indoor cycling class?

**70 beats per minute**

130 beats per minute

40 beats per minute

150 beats per minute

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*Correct answer: 70 beats per minute*

*Indoor cycling classes should generally maintain a tempo of 60 to 110 beats per minute.*

*130 beats per minute would be appropriate for high impact, low impact, kickboxing, and some dance classes. 40 beats per minute is unlikely to be fast enough for any common group exercise classes. 150 beats per minute is appropriate for high impact classes.*

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29.

Which of the following is **true** about step platforms?

**Step platforms are the most popular piece of equipment pertaining to group fitness classes**

Step platforms can only be used for lower body exercise

Step platforms cannot be incorporated into athletic/sports classes

Step platforms are only appropriate for high impact classes

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*Correct answer: Step platforms are the most popular piece of equipment pertaining to group fitness classes*

*Step platforms have been successfully incorporated into nearly every type of group fitness class in existence. These tools are incredibly versatile, as they can be used for upper body, lower body, high impact, low impact, stretching, and many other purposes. Experimenting with the many uses of step platforms can expand the skills of all group fitness instructors.*

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**30.**

When creating a plan for a kickboxing class, should the warm-up be general or specific, and why?

**Specific - Practicing movements that will be done in class will allow students to improve their coordination while increasing heart rate and internal body temperature**

General - Stretching the lower body will allow students to be more limber for class

Specific - Sparring with a partner will help students get comfortable with throwing kicks

General - Spending 5 minutes on the stationary bike will raise the heart rate and direct blood flow to the legs

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*Correct answer: Specific - Practicing movements that will be done in class will allow students to improve their coordination while increasing heart rate and internal body temperature*

*Specific warm-ups allow students to work on movements that will be performed during class. The movements also target the muscles that will be primarily used. This helps promote injury prevention.*

*Current research tells us that static stretching prior to intense exercise weakens the muscle's contractile force. Stretching should be done well in advance of the bout of exercise or after it has been completed.*

*While a specific warm-up is ideal, sparring is not typically part of kickboxing classes. Any skills that are practiced are done on heavy bags.*

*Riding the stationary bike as a warm-up will be beneficial in terms of general warm-up, but it is not the most ideal exercise for preparing for a kickboxing class. The warm-up should be more specific to the intended exercise and help prepare the body for challenging movements.*

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31.

Which of the following options **most** closely aligns with the ACSM recommendations for strength training exercise?

**Individuals should perform at least 8 exercises for the main muscle groups of the body per session, 2 times per week**

Individuals should participate in classes lasting longer than one hour, when available

Individuals should attempt to exercise on their own, whenever possible, to eliminate distractions

Individuals should attempt to push through pain on exercises and then, if symptoms don't improve, take a day off and try again the next

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*Correct answer: Individuals should perform at least 8 exercises for the main muscle groups of the body per session, 2 times per week*

*This is the basis of the ACSM recommendations for strength training. This volume appears to be minimally sufficient for achieving improvements in strength.*

*Classes lasting longer than an hour can lead to high drop off rates. Exercising with a partner or group can improve motivation and adherence. Pushing through pain is never a good idea. Individuals should work through a pain free range of motion and should not push through painful symptoms during exercise.*

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32.

For a senior fitness class, which of the following music choices may be the **best** option to encourage participation and adherence?

**Music from the eras encompassing the participants' formative years**

Fast-paced top 40 hits of today

Interpretive jazz

No music should be used for senior fitness classes

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*Correct answer: Music from the eras encompassing the participants' formative years*

*Music from the time participants grew up tends to be the best option for attracting as many of said participants as possible. This will obviously vary with every generation, but should be considered with regard to class design.*

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**33.**

Which of the following describes the basics of rep ranges and resistance level used during **most** strength-based group fitness classes?

**High reps, low resistance**

High resistance, low reps

Medium reps, medium resistance

High resistance, high reps

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*Correct answer: High reps, low resistance*

*Most strength training group fitness classes feature exercises that utilize targeted movements with high reps and low resistance. This has been the case for many decades of group fitness, and continues to be the predominant style.*

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34.

Which of the following is a major advantage of training with kettlebells?

**Kettlebells provide a way to significantly increase metabolic demand during exercise**

Kettlebell movements require little to no explanation or demonstration for participants to learn and master moves

Kettlebells provide variable resistance throughout the range of motion

Kettlebells pose no safety risk to participants

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*Correct answer: Kettlebells provide a way to significantly increase metabolic demand during exercise*

*Kettlebells are functional, unique pieces of equipment that place a heavy demand on the body's systems.*

*Kettlebells often require in-depth demonstrations and cueing for patients to be able to correctly and safely perform moves. Kettlebells provide consistent resistance against gravity throughout the range of motion.*

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35.

Within the fitness community, which style of yoga is **most** popular?

Hatha yoga

Tantra yoga

Raja yoga

Karma yoga

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*Correct answer: Hatha yoga*

*Hatha yoga has been a popular style of yoga for many years. It is beginner friendly and provides a great workout; exactly what most yoga seekers are looking for. Hatha yoga incorporates mind-body elements, too.*

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**36.**

Which of the following is an example of using a stability ball as a prop?

**Lying on the ball while performing a bench press with dumbbells**

Throwing the ball back and forth with a partner

Bouncing the ball up and down to increase coordination

Lifting the ball in a PNF pattern

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*Correct answer: Lying on the ball while performing a bench press with dumbbells*

*In this example, the ball is used in order to provide an unstable surface to lie on, but it is not the primary piece of exercise equipment. A prop is something that is used as an accessory for an exercise.*

*Throwing, bouncing, and lifting the ball are examples of using a ball as a primary piece of exercise equipment.*

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**37.**

What has been shown to lessen the effects of DOMS?

**Repeated-bout effect**

Static stretching

Dynamic stretching

Stretch-shortening cycle

*Correct answer: Repeated-bout effect*

*Of all of the options, the repeated-bout effect (RBE) has shown the most significant results in lessening the severity of delayed-onset muscle soreness (DOMS). This is due in part to the muscles building up a tolerance to doing the same, or similar, exercises every week. While the other modalities and movements may help alleviate some of the symptoms of DOMS, RBE is a preventative measure that should keep soreness to a more tolerable level after cessation of intense bouts of exercise.*

*The stretch-shortening cycle is not related to DOMS.*

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**38.**

Which of the following pieces of equipment would **not** significantly progress the difficulty of supine bridges?

**Soft weighted fitness balls**

Gliding discs

TRX

BOSU

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*Correct answer: Soft weighted fitness balls*

*Soft weighted fitness balls would likely not provide any significant challenge over just using one's own body weight.*

*Gliding discs, TRX, and BOSU all add another layer of challenge to the basic supine bridge.*

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**39.**

According to the guidelines set out by the ACSM and AHA from 2007, how frequently should adults complete muscular strength and muscular endurance exercises each week at a minimum?

**2 days per week incorporating exercises for the whole body**

150 total weekly minutes of moderate intensity resistance training exercise

20 minutes of vigorous intensity resistance training exercise 3 days per week

5 days per week, completing a split program

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*Correct answer: 2 days per week incorporating exercises for the whole body*

*According to the ACSM/AHA recommendations, healthy individuals should complete a minimum of 2 days a week of resistance training exercise, incorporating movements for the entire body.*

*150 weekly minutes of moderate intensity exercise and 20 minutes of vigorous intensity exercise 3 days a week are more appropriate recommendations with regard to cardiovascular exercise minimum recommendations for healthy adults.*

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**40.**

What plane of motion do jumping jacks move through?

**Frontal**

Sagittal

Transverse

Bilateral

*Correct answer: Frontal*

*When applying planes of motion to exercise, we can use them to make sure programmed workouts are varied in the type of movements performed. To ensure clients are well balanced, it is important to include movements from each plane of motion in your programming. The frontal plane divides the body into anterior and posterior halves. Therefore, jumping jacks are in the frontal plane.*

*The sagittal plane divides the body into left and right halves and an example of an exercise that falls in line with that is walking lunges. The transverse plane divides the body into superior and inferior halves and rotational medicine ball throws fall under that category.*

*Bilateral is not a plane of motion. Rather, it describes something, potentially dumbbells, being on both sides of the body.*

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**41.**

Which of the following types of movements is **least** effective during a warm-up to achieve the desired physiologic effects of preparing the body for exercise?

**Static stretching**

Dynamic stretching

Activity-specific movements

Movements that increase heart rate and blood flow

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*Correct answer: Static stretching*

*Static stretching has, in recent years, been discouraged during warm-ups. These movements seem to weaken muscles for a transient period of time. Therefore, static stretching can be appropriate as part of a comprehensive exercise program, just not during the warm-up.*

*Dynamic stretching is one of the best types of movement to include in a warm-up. Activity-specific movements help to prepare the participants for the upcoming exercise session as they practice the motor patterns of the activity in question. Increasing heart rate and blood flow pre-emptively can improve performance and comfort during exercise sessions.*

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42.

Which of the following is **true** regarding mixed-impact classes?

**Mixed impact classes should not include movements in which participants hop on one leg many times in a row**

Mixed impact classes are primarily designed to improve muscular strength

Mixed impact classes are difficult to modify for participants of various ability levels

Mixed impact classes are typically set to a tempo of less than 100 beats per minute

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*Correct answer: Mixed impact classes should not include movements in which participants hop on one leg many times in a row*

*In order to avoid causing too much stress to the joints, hopping on one leg for many repetitions in a row should be discouraged during a mixed impact class.*

*Mixed impact classes are easy to modify for participants of various ability levels.  
Mixed impact classes are primarily intended to stress the cardiovascular system.  
Mixed impact classes are typically set to a tempo of 135 to 160 beats per minute.*

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**43.**

Which of the following is the preferred tool for measuring intensity in an aquatic exercise setting?

**RPE**

30-second heart rate measurement

15-second heart rate measurement

10-second heart rate measurement

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*Correct answer: RPE*

*Rating of perceived exertion, or RPE, is the best way to measure intensity in the pool. This is due to the fact that water has a blunting effect on heart rate, and heart rates can be significantly lower when participants exercise in the water compared to when they exercise on land.*

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**44.**

If someone wants to increase their strength in an effort to improve their long-distance running, what is the **best** class to take to support this goal?

**Muscular endurance class**

Step training

Indoor cycling

Yoga

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*Correct answer: Muscular endurance class*

*There is ample research to suggest resistance training is beneficial for long-distance runners. It is important to focus on muscular endurance as well as strength and hypertrophy when creating a resistance training program for runners.*

*Step training, while not bad for runners, does not help target specific muscle groups that could help improve running performance. If anything, it provides a low-impact alternative to long-distance running. Like step training, indoor cycling will help give a low-impact alternative to running. Yoga promotes increased mobility, which is important for running, but does not help muscular endurance through full ROM. Most positions involve isometric holds to improve core stability and balance.*

---

**45.**

When teaching a class with multiple beginners, intermediate participants, and advanced participants, which of the following is the **best** way to organize the room setup?

**A vertical layout in which advanced participants are on the left side of the room, beginners are on the right side, and intermediate participants are in the middle**

A horizontal layout in which advanced participants are in front, intermediate participants are in the middle, and novices are in the back

A completely mixed class in which all participants are randomly spread out in the room, regardless of experience level

Beginners should be discouraged from attending a class with advanced participants and vice versa. These varied skill levels only create competition and can lead to conflict.

---

*Correct answer: A vertical layout in which advanced participants are on the left side of the room, beginners are on the right side, and intermediate participants are in the middle*

*A vertical layout allows the instructor to see everyone and for everyone to easily see her as well. Plus, this type of setup allows for better group dynamics and more comfort from certain participants who may feel embarrassed by their skill level.*

---

**46.**

What is an appropriate cardiovascular test that should be administered prior to starting group fitness classes?

**3-minute step test**

Timed 1-mile run

Partial curl-up test

Push-up test

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*Correct answer: 3-minute step test*

*The 3-minute step test is a quick, simple test that requires minimal equipment and space to administer. It is not too challenging that most people cannot complete it. However, it will be difficult if the student has preexisting cardiovascular and/or musculoskeletal diagnoses.*

*While the 1-mile run is a cardiovascular test, it is not appropriate for entry into a group fitness class. It is not possible to standardize this test, as many gyms will not have access to a track, treadmill, or ideal weather conditions, among other factors.*

*The partial curl-up test is a muscular endurance test, not a cardiovascular test.*

*The push-up test is also an example of a muscular endurance test.*

---

47.

Which of the following is a major benefit of circuit training?

**Circuit training can be an effective way to work on multiple aspects of fitness simultaneously**

Circuit training classes are always low-impact

Circuit training classes do not require an official warm-up or cool-down

Circuit training classes are the best way to help clients increase their one-rep max efforts

---

*Correct answer: Circuit training can be an effective way to work on multiple aspects of fitness simultaneously*

*Circuit training classes often incorporate movements that are designed to improve cardiovascular endurance, muscular strength, and muscular endurance in a single session.*

*Circuit training classes may or may not be low-impact. An official warm-up and cool-down is always integral to every type of group fitness class or exercise session. Circuit training classes may help improve muscular strength slightly, but increasing one rep max ability can be more effectively accomplished in other ways.*

---

**48.**

Which of the following is **true** of dumbbells in the group exercise setting?

**It can be logistically challenging to provide heavy weights for all group exercise participants who may want them**

Most dumbbells available during a group exercise class weigh between 3 and 5 pounds

Dumbbells should only be used in isolation, not in combination with other equipment

Most participants can comfortably perform a lateral shoulder raise with 20 pound dumbbells. Therefore, this should be the minimum weight available for group exercise classes.

---

*Correct answer: It can be logistically challenging to provide heavy weights for all group exercise participants who may want them*

*In most group exercise settings, it is extremely difficult to provide very heavy weights for all participants. Therefore, selecting exercises that make use of lighter weights in creative ways is a good way to get around this hurdle.*

*Dumbbells available during a group exercise class will typically range between 1 and 15 pounds. Dumbbells can be used with many other pieces of equipment, such as benches and balance trainers, where appropriate. A lateral raise with 20 pound dumbbells is extremely difficult for most people.*

---

**49.**

A kickboxing instructor arrives before the rest of her class to discover that the session will have to take place in a carpeted room due to scheduling conflicts. Which of the following is a major consideration with regard to a carpeted surface during a kickboxing class?

**Pivoting should be discouraged. Instead, participants should lift up and place their feet in position during kicks.**

A carpeted surface is the best choice for a kickboxing class. The instructor should incorporate as much lateral movement and as many pivot moves as possible.

The instructor should cancel the class due to safety concerns

The instructor should teach a yoga class instead

---

*Correct answer: Pivoting should be discouraged. Instead, participants should lift up and place their feet in position during kicks.*

*Carpet can cause many issues for classes requiring quick movements and changes in direction. The instructor should discourage participants from quick turns, changes in direction, and sharp pivots, so that their shoes don't catch on the carpeted surface.*

*The instructor doesn't need to cancel the class, she just needs to make enough modifications to ensure safety. Teaching a yoga class would likely result in many drop offs and unhappy clients. Unless the situation is completely unsafe and inappropriate for holding the promised class, the instructor should move forward with whatever modifications are necessary.*

---

**50.**

The use of physioballs during group exercise classes tends to **increase** the difficulty of an exercise in which of the following ways?

**Decreasing the stability of the surface the exercise is performed on**

Providing significant extra resistance

Lowering the center of gravity

Increasing the base of support

---

*Correct answer: Decreasing the stability of the surface the exercise is performed on*

*Physioballs are large apparatuses that can be used effectively for nearly every population that attends a group fitness class. They increase the difficulty of an exercise by reducing the stability one would normally have from the ground or other non-moving surface.*

*Physioballs are generally very light and provide little added resistance. Lowering the center of gravity tends to make exercises easier; physioballs do not inherently lower the center of gravity of a participant or of a movement. Increasing the base of support often makes an exercise easier; stability balls do not inherently increase the base of support of a participant or of a movement.*

---

**51.**

Which of the following exercises would be **most** appropriate to include in a kettlebell class for beginners?

**Two arm kettlebell swings with light weight**

Kettlebell snatches with heavy weight

Single arm kettlebell swings with mid-air hand switches

Max effort double kettlebell clean and press

---

*Correct answer: Two arm kettlebell swings with light weight*

*The kettlebell swing is the most foundational exercise associated with this exercise tool. However, it can be hard to perform the exercise correctly for beginners. Kettlebell classes should encourage light weight and a focus on form for beginners before they advance to more complex movements and heavier weights.*

*Kettlebell snatches with heavy weight could result in a beginner injuring their shoulder, back, or another area. Mid-air switches require considerable comfort with the kettlebell and would be inappropriate for most beginners. Max effort double kettlebell presses would be very difficult for most beginners, and they may lose form, leading to injury.*

---

**52.**

In terms of participant safety, which of the following would be the **best** way to incorporate a propulsion/power move into a step routine?

**Encouraging participants to perform a plyometric step up, where they explode upward at the top of a step up**

Encouraging participants to jump down from the step and land on both feet

Encouraging participants to jump down from the step and land on one foot

Encouraging participants to slowly step up, but rapidly step down during a pattern

---

*Correct answer: Encouraging participants to perform a plyometric step up, where they explode upward at the top of a step up*

*Plyometrics can be an effective addition to a step class. However, all power moves should always be incorporated on the movement that progresses to the top portion of the step rather than down toward the ground.*

*Explosive movements down toward the floor can significantly increase joint impact forces and can lead to acute or chronic joint injuries.*

---

**53.**

Which of the following outlines all parts of the 7-step strength exercise instruction process for GEIs?

**Directions, explanation, body awareness, stimulation, action words, evaluation, acknowledgements**

Pre-warm up, warm-up, pre-exercise, exercise, cool down, post-cool down, debriefing

Movements, muscles used, kinesthetic awareness, proprioception, plyometric concerns, length-tension relationships, equipment use

Rhythm, stationary movement explanation, cadence, intensity, volume, training goals, debriefing

---

*Correct answer: Directions, explanation, body awareness, stimulation, action words, evaluation, acknowledgements*

*While group exercise instructors will develop their own unique styles in which they convey all important information to participants, this 7-step process, found on page 104 of ACSM's Resources for the Group Exercise Instructor, is a great reference point for group exercise instructors of all experience levels to figure out how to efficiently convey all pertinent information to participants during a class.*

---

**54.**

What is a disadvantage of using a TRX?

**There is a learning curve to use**

Wide range of unique exercises to learn

Core stability is necessary for many of the exercises

Quickly change lengths of straps

---

*Correct answer: There is a learning curve to use*

*The TRX has a little bit of a learning curve to get over when getting used to it. Many of the movements can be quite difficult, but a positive thing is that it is easy to regress most exercises to make them easier.*

---

**55.**

Which of the following is **true** regarding step training?

**Step training provides a significant challenge for participants, but causes very little joint impact**

Participants should always be encouraged to select the highest step available, then modify as needed

The generally preferred stepping tempo is 105-110 beats per minute

Step training has not developed any variations over the years

---

*Correct answer: Step training provides a significant challenge for participants, but causes very little joint impact*

*The impact forces imparted on participants during step training are similar to those experienced during a brisk walk. However, step training can create a significant cardiovascular demand on the body, similar to that of a high-intensity jogging session.*

*The preferred stepping tempo is 118 to 128 beats per minute. Step training has gone through many iterations since it was invented in the late 1980s. Participants should be encouraged to select the lowest step height that will still allow for enough intensity during the session.*

---

**56.**

Which of the following is an example of a cluster set?

**A set of squats immediately followed by a set of lunges**

A set of squats immediately followed by a set of pull ups

3 sets of 10 reps of weighted pull ups with one minute of rest between sets

A set of 100 reps of bench press with 30% 1RM

---

*Correct answer: A set of squats immediately followed by a set of lunges*

*Cluster sets are those that use multiple exercises for the same muscle group with little or no rest between the movements.*

*A set of squats immediately followed by a set of pull ups most nearly describes a super set. 3 sets of 10 reps of weighted pull ups with one minute rest between sets describes a traditional set. A set of 100 reps of bench press describes a high volume set.*

---

**57.**

Which of the following would be **most** appropriate for the cool-down period after a group exercise class?

**Instructing participants to perform standing, gentle, dynamic stretches, progressing into seated and supine/prone stretches as participants' heart rates slow down**

Instructing participants to immediately sit down after the workout phase and begin performing static hamstring stretches

Instructing participants to run in place, gradually increasing the intensity throughout the cool-down period

Instructing clients to immediately lay down on their stomachs after the workout phase and to remain there until they are ready to begin stretching

---

*Correct answer: Instructing participants to perform standing, gentle, dynamic stretches, progressing into seated and supine/prone stretches as participants' heart rates slow down*

*During a workout, the heart rate can rise to very high levels. When this happens, participants need to gradually decrease this heart rate as the workout tapers down. If they don't, they could experience a cardiovascular event due to blood pooling. For this reason, starting in standing with gentle, rhythmic movements can be very helpful for recovery. From here, participants can then gradually move into seated positions for stretching and prone/supine positions to finish up, if appropriate.*

---

**58.**

Which of the following is an **advantage** of using a stability ball during group exercise class?

**Stability balls increase the difficulty of all exercises by challenging participants' balance ability**

Stability balls are easy to store in large numbers

Stability balls pose no risk to participant safety

Stability balls are a one-size-fits-all piece of equipment

---

*Correct answer: Stability balls increase the difficulty of all exercises by challenging participants' balance ability*

*By manipulating the variable of balance, group exercise instructors can significantly increase or decrease the difficulty of an exercise.*

*Stability balls can be very difficult to store, as they are so large. Stability balls can lead to many different injuries if participants are not effectively taught movements and monitored during exercise. Stability balls come in many different sizes which are suited for different participants' body types and sizes.*

---

**59.**

Of the following, which is the **best** option for a beginner circuit training class?

**TRX squats, knee push-ups, walking lunges, TRX rows, standing dumbbell shoulder press, band bicep curls**

TRX squat jumps, knee push-ups, kettlebell snatch, dumbbell bent over row, full plank, sliding disc reverse lunges

Kettlebell goblet squat, dumbbell floor press, dumbbell overhead walking lunges, barbell bent over row, alternating jump lunges

Kettlebell single arm clean and jerk, medicine ball slam, burpees, BOSU goblet squat, farmer carries

---

*Correct answer: TRX squats, knee push-ups, walking lunges, TRX rows, standing dumbbell shoulder press, band bicep curls*

*The implementation of something like the TRX suspension system is a good choice for beginners because it allows them to scale difficulty quickly and easily. Making adjustments like doing knee push-ups instead of full push-ups ensures that most people will be able to complete the prescribed reps. However, you must be able to regress that movement and others if they pose too difficult of a challenge.*

*The other answer choices include exercise options that may be too challenging, in more than one way, for beginners. Some examples would be the kettlebell snatch, sliding disc reverse lunges, overhead walking lunges, alternating jump lunges, kettlebell clean and jerk, and more. The goal of circuit training classes is to provide a more engaging form of cardiovascular exercise through the use of weights, various movements, and an ever-changing workout program that keeps the student interested and engaged. Making the class too hard for beginners can quickly discourage them. Rather, start with easier movements and scale them up as people improve their cardiovascular and muscular endurance as well as coordination and movement execution.*

---

**60.**

Based on the primary goal of a cooldown, which exercise would be ideal after completing a 45 minute step class?

**Riding a stationary bike**

Using a vertical climber

Walking on a stair stepper

Using a rowing ergometer

---

*Correct answer: Riding a stationary bike*

*The goal of a cooldown is to gradually bring the heart rate closer to resting and promote venous return of blood. Riding a stationary bike allows for both of these things to occur, as it is the least taxing piece of equipment due to the low impact and the ability to move at your desired pace.*

*The other three options are too intense to allow the heart rate to drop and would be better suited for the main workout.*

---

61.

Which of the following is **not** a documented effect of exercising with music?

**Increased maximum heart rate by 10 beats per minute**

Improved coordination

Reduced sensations of fatigue

Provides a sense of community between group exercise participants

---

*Correct answer: Increased maximum heart rate by 10 beats per minute*

*Max heart rate is related to age and is not influenced by training status or any other factor.*

*Music has been shown to increase muscular coordination, reduce sensations of fatigue, and provide a sense of community and connectedness between group exercise participants.*

---

**62.**

What purpose does a postexercise cooldown serve in the group class setting?

**Facilitating venous return**

Improve active ROM

Maintain heart rate to continue burning calories

Extra practice on challenging movements

*Correct answer: Facilitating venous return*

*When an intense bout of exercise is over, blood pressure can drop due to blood pooling in the lower limbs. This can be unsafe as it can cause one to become dizzy and even pass out. Postexercise cooldown promotes venous return, which helps bring the body back to equilibrium gradually rather than suddenly.*

*Active stretching will help improve ROM, but it does not promote venous return, which is the immediate goal upon exercise cessation.*

*The goal of a postexercise cooldown is to bring the heart rate back to normal levels gradually. A byproduct of the cooldown is excess post-exercise oxygen consumption (EPOC), which states that the body will continue to burn calories at a higher rate post exercise until the heart rate returns to normal.*

*The time to practice movements is either before or during class. As stated above, the goal of a cooldown is to promote venous return and lower the heart rate.*

---

63.

Which of the following is an example of pre-fatiguing a muscle group?

**Performing quad extensions before lunges and squats**

Performing calf raises with feet facing forward, then performing calf raises with feet turned in

Performing pull ups before bicep curls

Performing push presses before lateral shoulder raises

---

*Correct answer: Performing quad extensions before lunges and squats*

*Prefatiguing a muscle is the practice of working synergist, or helper muscles before working a more comprehensive movement. While the quads are used during both a squat and a quad extension, the squat uses many more, larger muscles that can be pre-fatigued with the use of quad extensions first.*

---

**64.**

Which of the following is **true** regarding music for group fitness classes?

**Dance classes often incorporate Latin and hip-hop styles of music**

An instructor should never consider a song suggestion from a participant, as the song could be inappropriate for a group exercise setting

Instructors should develop a repertoire of 10-12 songs and they should never deviate from them

Fast-paced rock music is a common choice for yoga classes

---

*Correct answer: Dance classes often incorporate Latin and hip-hop styles of music*

*Many dance classes will stick to these styles of music, as they are typically fast-paced and well-suited for dancing. However, there are many different choices and each instructor can choose whatever music they think will best serve the participants in question.*

*Participants often offer great suggestions that can quickly become favorites of both instructors and other participants. The instructor just needs to make sure that they get the rights to play the song during class. Having a huge list of song choices is always a good idea and instructors should not limit themselves when developing their music libraries. Yoga classes are typically not well-served by fast-paced music, as many participants attempt to relax during these sessions.*

---

65.

You are designing a muscular endurance class for a group of 15 people. Your available equipment is a BOSU ball, assorted dumbbells, kettlebells, weighted bars, and stability balls. How would you cue your students on how to safely get on the BOSU, flat side up, to perform squats?

**1) With one foot, step on one side of the BOSU 2) Now, with your other foot, step on the other side of the platform 3) Shift your bodyweight over so that the BOSU evens out**

1) Step in the center of the BOSU with one foot 2) Next, step on with your other foot 3) Gradually shuffle your feet outward until the desired width is met

1) Make sure the BOSU is level 2) With both feet, jump on the BOSU so that the feet are equidistant from the center of platform 3) Adjust your feet to make sure they are even

1) Brace yourself on a wall 2) Jump on the BOSU with both feet 3) Adjust your feet until they are equidistant from the center of the platform

*Correct answer: 1) With one foot, step on one side of the BOSU 2) Now, with your other foot, step on the other side of the platform 3) Shift your bodyweight over so that the BOSU evens out*

*The BOSU is a great piece of equipment for balance and stability, but it can be difficult to use and dangerous if used inappropriately. Cueing your students correctly will help keep them safe. The safest way to mount the BOSU, without bracing onto a wall, pole, or other equipment, is to step on one side at a time.*

*Stepping on the center of the BOSU can work, however, it requires more steps and movement to get to a ready position. Ideally, you want to avoid picking up or moving your feet once you are fully on the BOSU. Jumping on the BOSU is advanced and, more often than not, unsafe for most people to attempt. This is not recommended in a group class setting.*

*It is not ideal to teach someone how to get on a BOSU while using a wall or other brace. It is unlikely that they will always have a wall nearby and it won't allow them to move effectively that close to the wall. You are better off teaching them to be independent when mounting the BOSU.*

66.

Which of the following is a common feature between Pilates and Yoga classes?

**They are both mind-body classes**

Both names translate to "yoke" or "unite" in English

They both require minimal training on the part of the instructor in order to master the art

They both require specific equipment

---

*Correct answer: They are both mind-body classes*

*Both yoga and Pilates focus on mental as well as physical health. These exercise schools emphasize coordinated breathing, core control, flexibility, and muscular endurance.*

*Yoga means "yoke"; Pilates is the name of the person who invented the program. To become a good instructor in either yoga or Pilates takes years and tons of training. Neither form of exercise requires any equipment, but both can use equipment, if desired.*

---

**67.**

Which of the following is the **best** description of reverse ordering in a strength training program?

**By starting with exercises that emphasize small muscle groups, then moving to exercises for larger muscle groups, clients can use much less weight to get a quality workout on their major lifts**

By performing exercises in the opposite order of what one usually does, one can trick their body into building more muscle

By structuring workouts in a pyramid-style, where one performs progressively more reps with each set, one can expect to increase muscle hypertrophy significantly

By starting with exercises that emphasize large muscle groups, one can save smaller muscle groups for the end, making the beginning of a workout the hardest part

---

*Correct answer: By starting with exercises that emphasize small muscle groups, then moving to exercises for larger muscle groups, clients can use much less weight to get a quality workout on their major lifts*

*Because group fitness classes often don't allow for all participants to use as much weight as they need to fatigue, instructors often need to structure their classes in ways to encourage fatigue. By starting with smaller muscle groups and working up to bigger ones, participants will need less resistance to get a good workout in, especially in the later portions of classes.*

---

**68.**

Which of the following is the **best** way to test for forward/backward seat alignment during an indoor cycling class?

**Bringing the pedals level with one another and ensuring that the kneecap of the front knee is directly over top of the center of the front pedal**

There is no proper alignment in this regard; participants should adjust the seat however they see fit

Have the patient stand on the pedals and sit on the bike; if pedaling feels the same both ways, the alignment is perfect

Have the patient pedal backwards; if they find this harder than pedaling forwards, adjust the seat back a quarter inch until this task becomes easier

---

*Correct answer: Bringing the pedals level with one another and ensuring that the kneecap of the front knee is directly over top of the center of the front pedal*

*This is considered the optimal alignment in this regard. By setting up the bike in such a way, participants can lessen their chances of developing knee problems or pain elsewhere during the class.*

---

**69.**

Which work/rest ratio **best** suits a beginner interval training class?

**1:2**

1:.05

2:1

1:1

*Correct answer: 1:2*

*Interval training classes are created based on the work/rest ratio, or the amount of time one will be exercising followed by a period of rest. Once the rest is up, exercise will resume and this cycle will be continued until the programmed sets have been completed. For those new to interval training or intense exercise, having a rest time greater than the work time is ideal initially until their body undergoes aerobic adaptations like increased cardiac output, lactate threshold, vO<sub>2</sub> max and more. As these adaptations occur over time, it is more appropriate to lower the ratio incrementally to 1:1 and lower.*

---

**70.**

Which of the following is an easy way for an instructor to prevent choreographed classes from getting boring, while not having to add entirely new moves?

**Instructing participants to perform the same lower body move, but adding in a different upper body move to be performed simultaneously**

Instructing participants to perform the same move, but calling it something different

Shortening the class so that the instructor doesn't have to keep developing new moves

Changing the music for each class but keeping all the moves exactly the same

---

*Correct answer: Instructing participants to perform the same lower body move, but adding in a different upper body move to be performed simultaneously*

*Upper body and lower body moves can be disassociated during a group fitness class. This allows for a huge variety of different movements with very small changes needed.*

*Shortening the class would not be appropriate: participants signed up for a class of a certain length, and the instructor should stick to those requirements. Changing the name of a movement does not change the movement itself and is unlikely to make it more exciting for most participants. Changing the music between classes is a good idea; however, the moves should be slightly modified in some way too, as clients will pick up on the moves being the same in each class.*

---

71.

Which of the following describes the **safest** position for the upper body during an indoor cycling class?

**Neutral spine with a roughly 45 degree forward lean**

Rounded shoulders to provide more power to the legs during the class

Neutral pelvis with a slight kyphotic curve in the lumbar and thoracic spines

Neutral spine with a roughly 70 degree forward lean for maximum power production

---

*Correct answer: Neutral spine with a roughly 45 degree forward lean*

*This position allows for both spine safety and adequate power production. Back pain is a common problem with cyclists who don't take the proper steps to ensure they are in a safe position.*

---

72.

Regarding EPOC (Excess Postexercise Oxygen Consumption), which of the following is **true** after a very intense group exercise class?

**EPOC will usually be higher after a very intense exercise session as compared to a lower intensity exercise session**

Hormone production will be lower after a more intense exercise class, so EPOC will also be lower when compared to a lower intensity exercise session

Body temperature will be lower after a more intense exercise class, so EPOC will also be lower when compared to a lower intensity exercise session

EPOC is the same regardless of the intensity of the exercise session

---

*Correct answer: EPOC will usually be higher after a very intense exercise session as compared to a lower intensity exercise session*

*With increased intensity of exercise, our tissues need more and more nutrients. As a result, we have to breathe more heavily and use more oxygen as the intensity of exercise increases. After the session has ended, our EPOC remains high for awhile. This is due to a multitude of factors including elevated body temperature, and various hormones produced during the exercise session.*

---

**73.**

What is the primary purpose of a warm-up?

**To assist participants in preparing physically and mentally for the upcoming workout**

To decrease heart rate so that participants are less nervous for the upcoming workout

To initiate the process of sweating so that the participants can effectively cool themselves during the workout

To begin the process of vasoconstriction for the upcoming workout

---

*Correct answer: To assist participants in preparing physically and mentally for the upcoming workout*

*In general, a warm-up is intended to prepare participants for the upcoming exercise they will be performing shortly thereafter. Some elements of this preparation are mental, while others are physical.*

*Heart rate, in most individuals who aren't taking beta blockers, will increase during the warm-up. Sweating may begin during the warm-up or it may not. This feature varies widely in participants. Vasodilation will likely take place during exercise and warm-ups, not vasoconstriction.*

---

**74.**

Which of the following is an important consideration when designing a class for participants who suffer from exercise-induced asthma?

**Participants should always bring their inhalers with them to class, and these tools should be readily available during the class**

As long as exercise intensity is kept relatively low, no precautions need to be taken for participants with exercise-induced asthma

With sufficient rest breaks, exercise-induced asthma is not a concern for most participants

As long as the participant's doctor has cleared him or her for exercise, he or she does not need to bring an inhaler to class

---

*Correct answer: Participants should always bring their inhalers with them to class, and these tools should be readily available during the class*

*Asthmatic conditions are very serious issues that can lead to respiratory emergencies if they are not dealt with immediately. While there are many different levels of severity with regard to asthma, it's important that any participants who suffer from the condition be prepared for group exercise class with their inhaler ready to go.*

*Physician clearance is helpful and important, but having the inhaler nearby is one of the most important things to consider for this population.*

---

**75.**

Which of the following pieces of equipment does **not** require above average balance in order to use it safely?

**Elastic bands**

BOSU ball

Swiss ball

Gliding disc

---

*Correct answer: Elastic bands*

*Elastic bands, when applied correctly, can make a balance exercise more difficult. What differentiates the other three options from elastic bands is that they are inherently aimed at challenging one's balance in order to use them. If someone suffers from vertigo or has weak stabilizing muscles, they may struggle to effectively and safely use these pieces of equipment. Consider starting on a flat, hard surface before progressing to something more challenging like a BOSU ball when assessing a client's abilities.*

---

76.

Which of the following pieces of equipment allows for bilateral and unilateral resistance?

**Dumbbells**

BOSU ball

Barbell

Stability ball

---

*Correct answer: Dumbbells*

*Dumbbells offer unilateral and bilateral resistance.*

*A BOSU ball does not provide resistance. Its focus is on training balance.*

*A barbell provides bilateral resistance since it is connected.*

*Stability balls, similar to the BOSU, challenge one's balance rather than providing resistance.*

---

**77.**

Which of the following is usually a major difference between strength and endurance classes?

**Endurance classes will often attempt to provide very little rest time; strength classes require some increased rest time between sets**

Endurance classes are inappropriate for male clients; anyone can participate in a strength class

Endurance classes are generally easier than strength classes

Strength classes are generally easier than endurance classes

---

*Correct answer: Endurance classes will often attempt to provide very little rest time; strength classes require some increased rest time between sets*

*The goal of an endurance class is to build up the endurance of the body, while the goal of strength classes is to build up the strength capabilities. Because of this, strength classes necessitate that participants be given adequate time to rest so that they can properly work their muscles in a strength capacity.*

*Anyone can complete either a strength or endurance class, as long as there are no pertinent medical concerns. Strength classes and endurance classes are equally challenging in different ways; the intensity will vary based on many different factors.*

---

**78.**

Which of the following exercises would rely mostly on type I muscle fibers?

**Walking 5 miles**

Running 1000 meters

Performing a snatch with 1.5x body weight

Climbing a 5 foot rope as fast as possible

---

*Correct answer: Walking 5 miles*

*Walking is a basic function for humans, requiring a relatively small amount of muscular force production. Therefore, this exercise would likely only require type I muscle fibers.*

*Running 1000 meters would likely require both type I and type II muscle fibers. Performing a snatch with 1.5 times bodyweight would require both type I and type II fibers, relying much more heavily on type II fibers. Climbing a rope as fast as possible would require the use of both type I and type II fibers, with a big emphasis on type II fiber recruitment.*

---

**79.**

When performing a bodyweight row on a suspension trainer, which of the following modifications would make the exercise more difficult?

**Walking the feet forward so that the body is parallel with the ground during the exercise**

Walking the feet backward so that the body is almost perpendicular to the ground during the exercise

Performing pushups with the feet resting on the suspension trainer's handles

Performing partial repetitions

---

*Correct answer: Walking the feet forward so that the body is parallel with the ground during the exercise*

*When performing bodyweight exercises, the main resistance consideration deals with gravity. By walking the feet forward, and creating a parallel body position during the row, participants effectively increase the difficulty of the exercise.*

*Performing the bodyweight row with the participant's body perpendicular to the ground would make the exercise much easier, as gravity would have very little effect on the movement. Performing pushups would change the exercise entirely, it would not make the row harder. Performing partial repetitions would make the exercise easier.*

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**80.**

Which of the following is a likely consequence of improper cueing during a group exercise class?

**Injuries and decreased participant satisfaction**

More enjoyment and improved problem solving by participants

A good instructor rating on the post-class survey

A higher intensity workout for the majority of participants

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*Correct answer: Injuries and decreased participant satisfaction*

*Group fitness instructors need to provide proper cueing in order to keep their participants safe and motivated throughout the class. If participants have no idea what they are supposed to be doing, instructors are likely to get poor feedback and they may even cause their participants to become injured. It is always imperative that participant safety is kept at the forefront of the instructor's mind.*

---

81.

Which of the following is **true** when a person is submerged in water up to their chest?

**Their body weight is reduced by 90%**

There is no muscle activation at this point, except from the muscles of the neck to keep the head upright

Blood quickly begins to pool in the legs when a person is in water at this height

This is considered an unsafe depth for most participants

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*Correct answer: Their body weight is reduced by 90%*

*The buoyancy of water allows for a 90% reduction of bodyweight when participants are submerged to chest height. For this reason, water exercise enables those with injuries, reduced exercise capacity, and arthritis to perform movements they would be unable to attempt on land.*

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**82.**

What happens to resting heart rate (HR) as stroke volume (SV) increases?

**Decreases**

Increases

No change

Unable to determine from the information provided

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*Correct answer: Decreases*

*HR and SV are inversely related, meaning as one increases, the other decreases. SV refers to the amount of blood ejected by the left ventricle (LV) each time the heart contracts. In this scenario, SV increases due to the heart being more trained. This makes the heart more efficient, thus lowering the heart rate.*

*In order for resting HR to increase, SV would need to be lower. This would likely be seen in untrained individuals.*

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**83.**

Which of the following should be a major component of group exercise classes designed for senior participants?

**Balance and fall prevention exercises**

High-impact exercises focusing on explosive power

Agility and speed exercises

Olympic lifts

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*Correct answer: Balance and fall prevention exercises*

*Many seniors are at high risk for falls and injuries related to said falls. Therefore, exercise sessions designed for seniors should involve movements that prevent falls and increase the strength and endurance of stabilizer muscles.*

*While there may be some seniors who might enjoy and benefit from agility, power, and Olympic lift exercises, the vast majority will benefit more from fall prevention exercises and balance-related interventions.*

---

**84.**

Which of the following answers contains all four of the broad categories of fitness classes?

**Choreographed cardio, nonchoreographed cardio, strength, strength/cardio combination**

HIIT training, cardio, mindfulness, plyometrics

Circuit training, step aerobics, low-impact, high-impact

Mixed-impact, low-impact, high-impact, water aerobics

---

*Correct answer: Choreographed cardio, nonchoreographed cardio, strength, strength/cardio combination*

*While there are tons of different group exercise classes, nearly all of them can fall under the general categories of choreographed cardio, nonchoreographed cardio, strength, and strength/cardio combination.*

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**85.**

Which of the following is recommended to do before strength training?

**Specific warm-up**

Static stretching

Steady state cardio

No warm-ups necessary for strength training

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*Correct answer: Specific warm-up*

*Specific warm-ups are ideal for strength training. Since you know exactly what your clients will be doing during class, you can create a warm-up specifically designed to compliment the workout. This ensures the appropriate agonist and synergist muscles are prepared to move.*

*According to current research, static stretching is not an ideal warm-up for strength training. We rely on the elastic properties of muscle to assist while lifting, and stretching can lessen that effect.*

*A general warm-up of ~5 minutes on a stationary bike is good to elevate the heart rate and raise core body temperature. However, steady state cardio refers to an extended bout of cardiovascular exercise where the heart and breathing rate stay relatively level over time. This is not ideal before lifting as we require a great amount of energy and focus for strength training in order to be safe. Steady state cardio would ideally be performed after resistance training.*

*It is not recommended to skip a warm-up prior to resistance training. Even if your class is running late, it's better to do 5 minutes of targeted warm-up movements than nothing at all.*

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**86.**

Which pieces of workout equipment are **not** appropriate for older adult classes?

**Agility ladder**

BOSU ball

Dumbbell

Elastic band

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*Correct answer: Agility ladder*

*Agility ladders are not appropriate for older adult classes as they provide unnecessary risk for a population that generally has decreased function of the vestibular system. There are more effective and safe pieces of exercise equipment that will help improve balance and agility.*

*BOSU balls are versatile and allow the instructor the ability to scale exercise difficulty to the appropriate level for each student. With the right guidance, they can help with both balance and strength.*

*Dumbbells have almost limitless application and can be scaled for difficulty easily. They are appropriate for most people.*

*Elastic bands are a good alternative if dumbbells aren't available. They provide smooth, easy resistance and are an effective tool for older adult classes.*

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**87.**

When preparing a warm-up routine for a group class, what set of exercises is appropriate?

**Banded lateral walk, scapular push-ups, banded shoulder external rotation, cat-cow**

Banded clamshells, standing dumbbell shoulder press, dead bugs, full plank

Quadruped hip abduction, prone superman, dumbbell sumo deadlift, bird dogs

Banded lateral walk, burpees, banded shoulder external rotation, banded face pulls

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*Correct answer: Banded lateral walk, scapular push-ups, banded shoulder external rotation, cat-cow*

*The purpose of a warm-up is to prepare the body for more intense exercise. In order to do that, we want to gradually work up to it by doing low intensity, high volume, and specific exercises. When warming up, choose exercises that compliment the workout you've created. For example, if your class will be doing goblet squats, kneeling shoulder press, bent over rows, this warm-up will be targeting the supporting muscle groups that will be taxed during the workout.*

*Standing shoulder press should generally be a part of the workout and not the warm-up. In order to effectively warm up the shoulder for exercise, the rotator cuff, deltoid, and upper back muscles should be targeted.*

*Dumbbell sumo deadlift is a main compound lift that requires high levels of focus, energy, and technique to complete safely. An effective core, leg, and back warm-up should be done prior to attempting.*

*Burpees are a high intensity movement that requires excellent coordination skills and good cardiovascular stamina. A more advanced person could incorporate them into a warm-up. However, for a group class setting, they may be better suited as a part of the main workout.*

---

**88.**

Which of the following is **most** likely to improve due to regular participation in ballet classes?

**Posture and stability**

One rep max strength for bench press

Max number of pushups performed

Cardiovascular endurance

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*Correct answer: Posture and stability*

*Ballet places a heavy emphasis on body awareness. As a result, many ballet participants carry these lessons on to their daily lives and their posture improves as a result.*

*Upper body muscular strength, muscular endurance, and cardiovascular endurance may all improve with ballet classes. However, these improvements are not as likely as posture and stability improvements are.*

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89.

Which of the following group exercise classes would be **least appropriate** for a pregnant woman in the second trimester?

Kickboxing

Step aerobics

Indoor cycling

Yoga

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*Correct answer: Kickboxing*

*Very high impact classes can cause trauma to the fetus. These should be avoided during pregnancy in favor of classes that maintain strength and endurance throughout the body.*

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90.

Which of the following pieces of equipment can be used for lat pulldown?

**Rubber tubing**

TRX

Barbell

Kettlebell

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*Correct answer: Rubber tubing*

*Of the listed options, only rubber tubing can provide resistance for lat pulldown. The resistance must be coming from the opposite direction of the line of pull.*

*A TRX can allow someone to do a modified pull-up, but that would still be a different exercise than a lat pulldown.*

*Barbells and kettlebells, without any special intervention, can only provide resistance by lifting them up.*

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91.

Movements used during a group exercise class should progress in which of the following ways?

**Simple to complex**

Complex to simple

Isometric to isotonic

Frontal plane-based movements to sagittal plane-based movements, to transverse plane-based movements

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*Correct answer: Simple to complex*

*Movements should begin very simply, then slowly progress to more complicated maneuvers as the class progresses.*

*In terms of joint angle and isotonic/isometric exercises, the goal of the class will dictate when and if these different types of movements should be incorporated into the class. There is no preferred order of planes in which participants should exercise.*

---

92.

Which of the following is a notable **drawback** associated with Pilates classes?

**Pilates provides very few cardiovascular endurance benefits**

Pilates does not lead to improved coordination or flexibility

Pilates can only be performed using a specific type of equipment

Pilates does not lead to better body mechanics

---

*Correct answer: Pilates provides very few cardiovascular endurance benefits*

*Research has shown that the cardiovascular benefits of Pilates are minimal, and they fall well below the suggested guidelines provided by the ACSM.*

*Pilates has been shown to improve coordination, flexibility, and body mechanics, amongst other metrics. Pilates can be performed with equipment or on the floor, making it a very versatile form of exercise.*

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**93.**

Which of the following is the best, **safest** step to take if one's foot comes out of the clip during an indoor cycling class?

**Immediately pressing on the emergency brake**

Disengaging the other foot and placing the feet on the handlebars

Disengaging the other foot and safely hopping off of the bike until the pedals stop spinning

Attempting to reattach to the clips while the pedals are spinning

---

*Correct answer: Immediately pressing on the emergency brake*

*First and foremost, the pedals need to stop spinning for the rider to safely resume the class. Quickly spinning pedals can collide with the rider's now-free leg and create abrasions, bruises, or worse injuries. Once the pedals have stopped moving, she can reengage her toe clips and continue the class.*

---

94.

Which of the following is **true** of stretching during an indoor cycling class?

**Stretching needs to be done off of the bike**

Stretching for the upper body can be performed on the bike, during or after the cool down

Stretching both the upper and lower body should be done on the bike in order to save time

Stretching during a cycling class should be ballistic in nature

---

*Correct answer: Stretching needs to be done off of the bike*

*Stretching on the bike presents serious safety hazards which can easily be avoided by stretching on the ground after the class.*

*Ballistic stretching is generally considered inappropriate for most individuals, as it can lead to injury. All body parts should be stretched off of the bike.*

---

95.

What is an example of a choreographed cardio class?

**Zumba**

Circuit training

Yoga

Pilates

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*Correct answer: Zumba*

*Of the listed options, only Zumba is a choreographed cardio class, meaning participants learn specific dance moves that they will perform to music.*

*Yoga and pilates are not cardio classes. Circuit training involves performing a circuit of a set number of exercises followed by a rest period and then repeated until all prescribed sets are completed.*

---

**96.**

When choosing music for a HIIT class, what is an ideal BPM range?

**150-170 BPM**

100-110 BPM

80-100 BPM

120-140 BPM

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*Correct answer: 150-170 BPM*

*HIIT classes are fast and intense, and the music should match that pace. This will help keep clients engaged and motivated to keep working at that intensity.*

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**97.**

Which of the following is **not** a motivational quality of music proposed by Karageorghis?

**Intensity**

Association

Cultural influences

Rhythm

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*Correct answer: Intensity*

*Intensity was not one of Karageorghis' proposed motivational qualities of music.*

*Association refers to one's emotional response to music, which can be very powerful during exercise.*

*Cultural influence can help people relate to you as an instructor as you have shown a common interest in music that is relevant to their region, socioeconomic background, and life experiences.*

*Lastly, rhythm will give people something to follow along with during your choreographed class.*

---

98.

With regard to music used during group exercise classes, which of the following is **true**?

**Copyright law presents significant legal considerations with regard to purchasing and using music during a group exercise class**

Group exercise instructors can use whatever music they wish during their classes, as all music is in the public domain

As long as the group exercise instructor herself purchased the music initially, she can legally choose to sell music she's purchased from an exercise-based music company

It is better for group exercise instructors to avoid using music altogether during classes to avoid the tricky legal areas associated with music copyright law

---

*Correct answer: Copyright law presents significant legal considerations with regard to purchasing and using music during a group exercise class*

*Even though there are serious penalties for the misuse of copyrighted music, group exercise instructors can legally play music during their classes as long as they follow the appropriate steps. By purchasing music through a legal vendor, group exercise instructors can provide a great atmosphere for their participants without having to worry about legal repercussions.*

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**99.**

You are designing a group class based on the work/rest ratio of 1:0.5. What type of training would this be considered?

**Interval training**

Circuit training

Step training

Indoor cycling

*Correct answer: Interval training*

*Interval training is based on manipulating different work/rest ratios depending on the goals of the student. Students new to interval training should start out at higher rest ratios like 1:2 or 1:3 and lower the ratio to 1:1 over time as their body adapts to cardiovascular stress.*

*While circuit training shares some traits with interval training, the main focus of this style of exercise lies in the amount of exercises performed in a row rather than what work/rest ratio is being used.*

*Step training is a low-impact exercise class involving plastic steps ranging from 4-10" in height and is generally done to the beat of the music chosen by the instructor. There is no work/rest ratio for this class.*

*Indoor cycling is a group class centered around manipulating revolutions per minute (RPM) and wheel resistance levels.*

---

100.

Which of the following is **true** of the downhill segment during an indoor cycling class?

**This should be performed after a tough hill climb, and a light resistance should be used**

This portion of the workout should use an RPE of 10 or greater

The downhill segment is also known as a sprint

The downhill segment should be the most intense portion of the class

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*Correct answer: This should be performed after a tough hill climb, and a light resistance should be used*

*Generally, the downhill portion utilizes an RPE of about 5. This gives participants a chance to recover and prepare for more of the harder sections of the class, after they have just completed a particularly grueling portion.*

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