Exercises

ort Answer Questions Carrying 1 Mark (20 to 30 words)

ine aggression.
at do you mean by endomorph?
at do you mean by mesomorph?
at do you mean by ectomorph?
at do you mean by extroverts?
at do you mean by Big five personality theory?
at do you mean by hostile aggression?
at is instrumental aggression?
at is assertive behaviour?

swer Questions Carrying 3 Marks (80 to 90 words)

uss Sheldon's classification of personality in brief.
uss Jung's classification of personality in brief.
orate the types of aggression in sports in brief.
uss the meaning and concept of aggression.

wer Questions Carrying 5 Marks (150 to 200 words)

idate Sheldon's classification of personality.
idate the Big five personality theory.

12 Training in Sports

Read this new topic after Article 12.5 on page 249 of the main book.

12.6 CIRCUIT TRAINING AND HIGH ALTITUDE TRAINING; INTRODUCTION AND ITS IMPACT

Circuit Training

Circuit training method was designed by **Adamson** and **Morgan** of Leeds University in 1957. It is a scientific arrangement of exercises, performed systematically and repeatedly as circuit. Circuit training consists of various types of exercises.

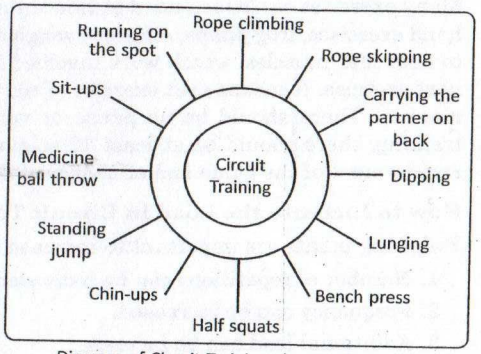

Diagram of Circuit Training along with Stations

"Circuit training is the training method in which certain exercises of various kinds are performed with or without apparatus with given dosage." **–Adamson and Morgan**

The circuit training's main objective is to develop endurance and strength simultaneously. Flexibility and mobility are also considered its objectives.

Main Characteristics of Circuit Training Method

1. Exercises are simple to learn and simple to execute.
2. Exercises are performed with medium resistance or with medium weight.
3. Number of repetitions is more.
4. Its aim is to develop of endurance and strength.
5. It involves exercises of whole body parts.
6. It is given to sportsmen in the preparatory period for developing basic endurance and strength.
7. The training must be performed under gradually increasing strain.

Some Examples of Circuit Training Exercises

1. Running on the spot.
2. Throwing medicine ball and catching it again 15 to 20 times.
3. Splits squat jumps 15 to 20 times.
4. Carrying weight or partner on shoulder 30 to 50 metres.
5. Chin-ups 5 to 10 times.
6. 50 metre run with sub-maximum speed.
7. Push-ups 10 to 20 times.
8. Standing jumps 10 to 20 times.
9. Sit-ups from supine position 10 to 20 times.
10. Rope skipping 1 to 2 minutes.
11. Dips 15 to 20 times.
12. Half squats with weight.
13. Rope climbing, once or twice.
14. To perform bench press.
15. Bench press in sitting position.

Many exercises can be included in this training method such as dumb-bells, bar-bell, free-hand exercises, frog jumps, different weight training exercises, hurdling, etc. It is essential to note that muscles, which were involved in first exercise, should not be involved in the next exercise. It means that exercise of the whole body parts should be given in alternate manner. There should be no pause or very little pause after each exercise. In circuit training, there should be at least 10 stations. Exercise can be changed according to the requirement of the game and efficiency of the sportspersons.

How to Increase the Load in Circuit Training

Following points are important to increase the load in Circuit Training:

1. Number of repetitions can be increased per exercise.
2. Frequency can be increased.
3. Additional load can be increased.
4. Interval between exercises can be reduced.
5. Number of rounds in circle can be increased.

Advantages of Circuit Training

1. Circuit training can be performed indoors or outdoors. In rainy season, this training can be done in rooms.
2. The equipments for exercises can be provided easily.
3. It is easy to learn. A trainee can learn to train himself.
4. The trainee gains good result in a short period.
5. It is an interesting method of training.
6. It does not require long duration to perform exercises.
7. A number of athletes can do circuit training according to the stations at the same time.
8. The coach can easily watch and supervise the training.
9. Amount of training can be increased or decreased according to the ability of train
10. All body parts can be exercised.

High Altitude Training: Introduction and Its Impact

High altitude training has been used by competitive athletes as a means of enhan their potential. In fact, they want to have a competitive advantage by doing high alti training. The effect is most dramatic at altitudes greater that 8000 feet above sea le The effect of high altitude training can be noticed even at 5000 feet above the sea le Nowadays high altitude training is used by athletes in various countries to impr performance in games and sports. Various techniques have been devised in order to ex sportspersons/athletes to the beneficial effects of high altitude training. Generally, t are following techniques of altitude training which are commonly used by athletes.

1. **Live High and Train High:** In this technique, athletes train high at high altit However, it is not well supported by the experts.
2. **Live Low and Train High:** In this technique, athletes are advised to live at altitude but to train high.
3. **Live High and Train Low:** In this technique, athletes live at high altitude and t low, with this technique, improvements at sea level performance have been show the events lasting between 8 to 20 minutes.

Impacts of High Altitude Training

High altitude training have both types of impacts on athletes/sportspersons *i.e.*, benefi and negative impacts. These are described below.

Beneficial Impacts

As a matter of fact, running or exercising at high altitude in the beginning decrea the amount of oxygen getting to the muscles. A low atmospheric pressure in the thin makes the blood less oxygen rich as it passes to the muscles. Indeed, exposing the bod high altitude persistently for a longer period causes it to acclimatise to the lower leve oxygen available in the atmosphere. A number of physiological changes that occur w acclimatisation enhance the supply of oxygen to muscles and the more amount of oxy definitely help in improving the sports performance.

At high altitudes, the body automatically produces a hormone known as erythropoie which stimulates the production of red blood cells which carry oxygen to the muscle the body. Up to some extent, if you have more red blood cells, more amount of oxygen be supplied to your muscles. Along with this, many other changes occur in the body dur acclimatisation which may help in improving sports performance. For example, the num of small blood vessels is increased and the capacity to manage the build up of waste a is also increased.

Negative Impacts

First of all, the acclimatisation to high altitude is not easy. But it takes place anyw There are other impacts that could vanish the beneficial impacts of high altitude traini

For example, the increase in red blood cells, makes the blood thicker which can make blood flow slow. It makes it difficult for the heart to pump blood throughout the body and can actually reduce the amount of oxygen getting to where it is required. If we perform training at higher altitude (above 5000 m) we cannot avoid weight loss. As a matter of fact, our body will consume our muscles in order to provide energy for training. Even there is a risk that our body's immune system will become weak. It may further lead to increased risk of infections. There may be adverse changes in the chemical make up of the muscles. Along with this, the body cannot exercise intensely at altitude. This may further reduce with the performance in some games and sports. Additionally nausea, loss of appetite, dehydration, inhibition of muscle repair process and excessive work of breathing are common problems during high altitude training. At very high altitude, athletes may face the major problem i.e., altitude sickness or illness. It can result in pulmonary or cerebral edema in which abnormal amounts of fluid is accumulated in the lungs and around the brain.

Exercises

Very Short Answer Questions Carrying 1 Mark (20 to 30 words)

1. What do you mean by circuit training?
2. Define circuit training.
3. How to increase load in circuit training?
4. What do you mean by high altitude training?
5. Mention the various techniques of high altitude training.

Short Answer Questions Carrying 3 Marks (80 to 90 words)

1. What do you mean by circuit training? Discuss its main characteristics?
2. What is circuit training? Discuss the advantages of circuit training?
3. Elaborate the beneficial impacts of high altitude training in brief.

Long Answer Questions Carrying 5 Marks (150 to 200 words)

1. Write a detailed note of circuit training.
2. Define circuit training. Discuss the main characteristics and advantages of circuit training.
3. What do you mean by high altitude training? Elaborate the impacts of high altitude training on athletes who involve the muscles in such training.