

**B.Sc. FITNESS AND LIFESTYLE MODIFICATION**  
(New Syllabus 2017-2018)

**SECOND YEAR**

**PAPER III – STRENGTH AND CONDITIONING FOR FITNESS**

*Q.P. Code: 802813*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Define health... What is health related fitness? Explain the components of health-related fitness in detail.
2. Explain the principles of strength training and conditioning in detail.
3. How do you design a resistance training program for an individual and explain the components in detail?

**II. Write notes on:**

**(8 x 5 = 40)**

1. Write notes on components of skill related fitness.
2. What is Leverage? Write notes on orders of lever.
3. Write notes on muscular adaptations to training.
4. Write notes on effects of exercises on hormonal system.
5. Write notes on relationship between metabolism and body fat reduction.
6. Write notes on lung volumes and capacities.
7. Write notes on types of stretching.
8. Write notes on safety measures during weight training.

**III. Short answers on:**

**(10 x 3 = 30)**

1. What are the major benefits of strength training?
2. Define Kinetics, Kinematics and Torque.
3. What is neuron? Write short notes on structure and function of neuron.
4. Write short notes on effects of training on skeletal system.
5. What is cardiac output? Effect of exercise on cardiac output.
6. Write short notes on warm up.
7. Name few upper body, lower body, core exercises in terms of resistance training.
8. Write short notes on interval training.
9. Write short notes on Agonist and Antagonist.
10. Write short notes strength training using body weight.

**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 0321]

**MARCH 2021**

**Sub. Code: 2813**

**(AUGUST 2020 EXAM SESSION)**

**B.Sc. FITNESS AND LIFESTYLE MODIFICATION**

**SECOND YEAR (Regulation 2017-2018 & 2019-2020)**

**PAPER III – STRENGTH AND CONDITIONING FOR FITNESS**

*Q.P. Code : 802813*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Define fitness. What is health and skill related fitness? Elaborate health benefits and performance benefits of training.
2. Explain function of cardiorespiratory system. Effects of training on cardiorespiratory system.
3. Mention different kinds of training. Safety and precautions during different kinds of training.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Write notes on types of muscle contraction.
2. Write notes on benefits of training on nervous system.
3. Write notes on Golgi tendons and muscles spindles Vs training.
4. Write notes on effects of insulin secretion and exercise.
5. What is basal metabolic rate? Effects of exercise on basal metabolic rate.
6. Write notes on principles of strength training.
7. Write notes on role of warmup and cool down on injury prevention.
8. Write notes on training using free weights.

**III. Short answers on:**

**(10 x 3 = 30)**

1. What are the difference between weight training and body building?
2. What is endurance? What is the relationship between muscular and cardiovascular endurance?
3. Write short notes on importance and variation of giving rest during training.
4. Write short notes on bone remodelling and exercise.
5. Write short notes on effects of exercise on heart rate.
6. Write short notes on flexibility.
7. Write short notes on training using machines.
8. Write short notes various types of aerobic exercises and benefits.
9. Write short notes on training using resistance tubes.
10. Write short notes on training and balance.

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 0222]

**FEBRUARY 2022  
(AUGUST 2021 EXAM SESSION)**

**Sub. Code: 2813**

**B.Sc. FITNESS AND LIFESTYLE MODIFICATION  
SECOND YEAR (Regulation 2017-2018 & 2019-2020)  
PAPER III – STRENGTH AND CONDITIONING FOR FITNESS  
*Q.P. Code : 802813***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on: (3 x 10 = 30)**

1. Write in detail about Health related and Skill related Fitness Components?
2. Write in details about the Muscular adaptation to Training?
3. What is the response and adaptation of cardio respiratory system to Exercise?

**II. Write notes on: (8 x 5 = 40)**

1. What are the Factors related to Aerobic Exercise performance?
2. What are the Core Exercises? Explain briefly?
3. How will you design a resistance training program?
4. What is Proprioceptive Neuromuscular training program?
5. What are the principles of training?
6. What is the Endocrine System response to training?
7. What are the bone adaptations to Exercise?
8. What is the comparison between Weight training and Power lifting?

**III. Short answers on: (10 x 3 = 30)**

1. What is Flexibility? How will you measure Flexibility?
2. What are the types of Muscle Contraction?
3. What is Golgi tendon Organs?
4. What is Muscle Hypertrophy?
5. What is Metabolism?
6. What are the various lung Capacities?
7. What is progressive overload?
8. What are the benefits of training in the water?
9. What is High intensity Interval of training (HIIT)?
10. Define Leverage?

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

**[AHS 0922]**

**SEPTEMBER 2022**

**Sub. Code: 2813**

**(FEBRUARY 2022 & AUGUST 2022 EXAM SESSIONS)**

**B.Sc. FITNESS AND LIFESTYLE MODIFICATION  
SECOND YEAR (Regulations from 2017-2018 & 2019-2020)  
PAPER III – STRENGTH AND CONDITIONING FOR FITNESS  
*Q.P. Code : 802813***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Define Metabolism. Explain the process of Glycolysis.
2. How will you design a training program?
3. Explain in detail about the neural adaptation to exercise.

**II. Write notes on:**

**(8 x 5 = 40)**

1. What are all the components of health related fitness?
2. Write about muscle architecture.
3. What is sliding filament theory?
4. What are the effects of exercise on hormones?
5. What are the components of blood?
6. Explain about pulmonary adaptation during training.
7. What are the modalities and equipments used for training?
8. What are the modes of aerobic exercise?

**III. Short answers on:**

**(10 x 3 = 30)**

1. Define agility. How will you measure agility?
2. What is a neuron?
3. What do you mean by hyperplasia?
4. What is a ligament?
5. What is insulin and its role?
6. What is Basal Metabolic Rate?
7. What are the various lung volumes?
8. What is individualization in training?
9. What is Fartlek training?
10. What is Muscle Spindle?

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

**[AHS 0423]**

**APRIL 2023**

**Sub. Code: 2813**

**B.Sc. FITNESS AND LIFESTYLE MODIFICATION  
SECOND YEAR (Regulations 2017-2018 & 2019-2020 onwards)  
PAPER III – STRENGTH AND CONDITIONING FOR FITNESS  
*Q.P. Code: 802813***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. What is Skill Related Fitness? Explain the Components of Skill Related Fitness in detail?
2. Define Metabolism. What is Basal Metabolic Rate? Explain Aerobic and Anaerobic Metabolism in detail.
3. What is Aerobic Training? How do you design an Aerobic Training for an individual and explain the Principles in detail?

**II. Write notes on:**

**(8 x 5 = 40)**

1. Components of Health-Related Fitness.
2. Effect of Training on Intra-abdominal and Intra Thoracic pressure.
3. Define Stretching. Write notes on Stretch Reflex.
4. What is Connective Tissue? Write notes on effects of Exercises on Connective Tissues.
5. Hormones and Exercise.
6. Adaptations of training on Respiratory System.
7. Benefits of Active and Passive Stretching.
8. Weight Reduction and Aerobic Training.

**III. Short answers on:**

**(10 x 3 = 30)**

1. What are the major benefits of exercises on Musculo Skeletal System?
2. What is Motor Unit? Role of Motor Unit in Training.
3. Classify Nervous System.
4. Effects of training on Cardiovascular system.
5. Exercise selection.
6. Cool down.
7. Equipment and Resistance Training.
8. Fartlek Training.
9. Core Exercises.
10. Benefits of training in water.

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