

Advance Exam Information 2022

Paper 1/ Component 1 – Fitness and Body Systems

Topic 1 Applied Anatomy and Physiology	What you need to revise.	Not included but could be a 1 or 2 mark question.
1.1 The structure and functions of the musculo-SKELETAL system	<p>1. Classification of Joints –</p> <ul style="list-style-type: none"><li>• Pivot Joint (Atlas and Axis)</li><li>• Hinge Joint (Knee and Ankle)</li><li>• Ball and Socket (Hip and Shoulder)</li><li>• Condyloid (Wrist)</li></ul> <p>You need to be able to identify these joints and know the range of movement possible at these joints.</p>	<ul style="list-style-type: none"><li>• Functions of the skeleton</li><li>• Classifications of bones</li><li>• Structure of the skeleton</li></ul>
1.1 The structure and functions of the MUSCULO - skeletal system	<p>1. The role of ligaments and tendons.</p> <p>Need to be able to explain how they are important/relevant when participating in physical activity and sport.</p> <p>2. Classification and characteristics of the muscle types.</p> <ul style="list-style-type: none"><li>• Voluntary</li><li>• Involuntary</li><li>• Cardiac</li></ul> <p>Need to be able to explain the roles they have when participating in physical activity and sport.</p> <p>3. Location and role of the voluntary muscles and the movements that happen as a result of them working during physical activity and sport.</p> <p>4. Antagonistic pairs to create opposing movement at joints to allow physical activities.</p> <p>To be able to identify the agonist and antagonist when working together and the movement that occurs at the joint as a result.</p>	<ul style="list-style-type: none"><li>• Muscle Fibre Types – Slow and Fast Twitch.</li></ul>

<p>1.2 The structure and function of the CARDIO - respiratory system</p>	<p>1. Functions of the CV System</p> <ul style="list-style-type: none"> <li>• Transport of oxygen, carbon dioxide and nutrients.</li> <li>• Clotting</li> <li>• Regulation of Body Temperature</li> </ul> <p>You will need to be able to explain the functions and the role and importance they have when taking part in physical activity and sport.</p>	<ul style="list-style-type: none"> <li>• Blood Vessels</li> <li>• Vascular shunting</li> <li>• Blood Cells</li> <li>• The functions of the respiratory system</li> <li>• Composition of air</li> <li>• Lung Volumes</li> <li>• The Respiratory system (Structure)</li> <li>• Alveoli and Gaseous Exchange</li> </ul>
<p>1.3 Anaerobic and Aerobic exercise</p>	<p>1. Energy – Aerobic Respiration - The use of glucose and oxygen to release energy aerobically with the production of carbon dioxide and water.</p> <p>Anaerobic Respiration – The impact of insufficient oxygen on energy release, the by-product of anaerobic respiration (lactic acid)</p>	
<p>1.4 The short term and long-term effects of exercise</p>	<p>1. The short term effects of physical activity and sport.</p> <ul style="list-style-type: none"> <li>• Lactate accumulation</li> <li>• Muscle fatigue</li> <li>• Increased Oxygen Debt</li> </ul> <p>2. The short term effects of physical activity and sport.</p> <ul style="list-style-type: none"> <li>• Heart Rate</li> <li>• Stroke Volume</li> <li>• Cardiac output</li> </ul> <p>3. Short Term effects of physical activity and sport.</p> <ul style="list-style-type: none"> <li>• Depth and rate of breathing.</li> </ul> <p>Need to be able to explain the impact and relevance these all have on the player/performer.</p> <p>4. How the respiratory system and cardiovascular system work together to allow –</p> <ul style="list-style-type: none"> <li>• Participation</li> <li>• Recovery</li> <li>• Oxygen Intake</li> <li>• Transfer to blood and muscles</li> <li>• Removal of Carbon Dioxide</li> </ul>	<ul style="list-style-type: none"> <li>• Long term effects/adaptations of skeletal system</li> <li>• Long term effects/adaptations of the muscular system</li> </ul>

<p>(3.4 The long term effects of exercise/Physical Training)</p>	<p>5. The long term effects of the cardio-respiratory system.</p> <ul style="list-style-type: none"><li>• Decreased HR (Resting)</li><li>• Faster Recovery</li><li>• Increased Stroke Volume</li><li>• Maximum Cardiac Output</li><li>• Increased size and strength of the heart (Muscular Hypertrophy)</li><li>• Increased Capillarisation</li><li>• Increase in the number of red blood cells</li><li>• Drop in resting blood pressure</li><li>• Increased lung capacity</li><li>• Increased vital capacity</li><li>• Increased number of alveoli</li><li>• Increased strength of diaphragm and external intercostal muscles</li></ul> <p>Need to be able to explain the adaptations that take place due to exercise and training and how they benefit the performer.</p>	
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Topic 3. Physical Training	What you need to revise.	Not included but could be a 1 or 2 mark question.
3.1 The relationship between health and fitness and the role that exercise plays in both	<p>1. Definitions of fitness, health exercise and performance.</p> <p>You need to be able to explain the relationship between all of the key terms.</p>	
3.2 The components of fitness, benefits for sport and how fitness is measured and improved	<p>1. Fitness testing.</p> <ul style="list-style-type: none"> <li>• The value of fitness testing</li> <li>• The purpose of specific fitness tests</li> <li>• The test protocols</li> <li>• The selection of the appropriate fitness test for components of fitness</li> <li>• Rationale for selection</li> </ul> <p>2. To be able to collect and interpret data from fitness tests results.</p> <ul style="list-style-type: none"> <li>• Analysis</li> <li>• Evaluation against normative data</li> </ul> <p>3. Fitness tests for specific components of fitness.</p> <ul style="list-style-type: none"> <li>• 12 Minute Cooper run/swim - CV</li> <li>• Harvard Step Test - CV</li> <li>• Illinois Agility Test - Agility</li> <li>• Handgrip dynamometer - Strength</li> <li>• One minute sit up and press up test – Muscular Endurance</li> <li>• 30M Sprint - Speed</li> <li>• Vertical Jump – Power</li> <li>• Sit and Reach – Flexibility</li> </ul>	<ul style="list-style-type: none"> <li>• Definitions of components of fitness</li> <li>• PAR-Q</li> </ul>

<p>3.3 The principles of training and their application to personal exercise/training programmes</p>	<p>1. Factors to consider when choosing the most appropriate training methods and training intensities for different physical activities and sports.</p> <ul style="list-style-type: none"> <li>• Fitness/sport requirements</li> <li>• Facilities available</li> <li>• Current level of fitness</li> </ul> <p>2. The use of different training methods for specific components of fitness.</p> <ul style="list-style-type: none"> <li>• Continuous (CV)</li> <li>• Interval (Speed and CV)</li> <li>• Fartlek (CV)</li> <li>• Circuit (All)</li> <li>• Weight/Resistance Training (Strength or Muscular Endurance)</li> <li>• Fitness Classes</li> </ul> <p>Body Pump – Strength and Power  Aerobics – CV  Spinning – CV and Muscular Endurance  Pilates – Flexibility  Yoga – Flexibility</p> <p>You also need to know the advantages and disadvantages of each training method.</p>	<ul style="list-style-type: none"> <li>• Principles of Training</li> <li>• Thresholds of training</li> </ul>
<p>3.5 How to optimise training and avoid injury</p>	<p>1. Performance Enhancing Drugs</p> <ul style="list-style-type: none"> <li>• Anabolic Steroids</li> <li>• Beta Blockers</li> <li>• Diuretics</li> <li>• Narcotic Analgesics</li> <li>• Peptide Hormones</li> <li>• EPO - Erythropoietin</li> <li>• HGH – Growth Hormone</li> <li>• Stimulants</li> <li>• Blood Doping</li> </ul> <p>Need to be able to know what each performance enhancing drug does and how that benefits the performer.</p> <p>Also what sports/activities would use the type of drug to enhance their performance?</p>	<ul style="list-style-type: none"> <li>• Types of Injuries</li> <li>• Injury Prevention and reducing risk</li> <li>• Warm up and Cool down</li> </ul>
<p>Topic 4 Use of Data</p>	<p>1. To be able to interpret data accurately</p>	

Paper 2/ Component 2 Fitness and Body Systems

Topic 1 Health, Fitness and wellbeing	What you need to revise.	Not included but could be a 1 or 2 mark question.
1.1 Physical, emotional and social health, fitness and wellbeing	<p>1. Physical Health</p> <ul style="list-style-type: none"> <li>• How improving physical ability (by improving components of fitness) can improve physical health and reduce risks.</li> <li>• How are these benefits achieved</li> </ul> <p>2. Emotional Health</p> <ul style="list-style-type: none"> <li>• How participating in physical activity and sport can improve emotional health and reduce risks</li> <li>• How are these benefits achieved</li> </ul>	<ul style="list-style-type: none"> <li>• Social Health</li> </ul>
1.2 The consequences of sedentary lifestyle	<p>1. Sedentary Lifestyle</p> <ul style="list-style-type: none"> <li>• What is a sedentary lifestyle?</li> <li>• What are the causes of a sedentary lifestyle?</li> <li>• How do the consequences impact components of fitness and physical ability.</li> </ul> <p>Overweight Overfat Depression Diabetes Osteoporosis Loss of muscle tone Impact on Components of Fitness</p>	<ul style="list-style-type: none"> <li>• Lifestyle Choices</li> </ul>
1.3 Energy use, diet, nutrition and hydration	<p>1. Balanced Diet Nutritional Requirements for a balanced diet to maintain a healthy lifestyle.</p> <ul style="list-style-type: none"> <li>• What is a balanced diet?</li> <li>• Energy Balance</li> </ul> <p>How the nutritional requirement for a balanced diet optimises specific performances in sport.</p> <p>2. The role and importance of macronutrients</p> <ul style="list-style-type: none"> <li>• Carbohydrates, Protein and Fats</li> <li>• Carbo-loading</li> <li>• Timing of protein intake</li> </ul> <p>3. The role and importance of micronutrients</p> <ul style="list-style-type: none"> <li>• Vitamins and Minerals</li> <li>• Water and Fibre</li> <li>• Hydration</li> </ul>	<ul style="list-style-type: none"> <li>• Optimum Weight</li> </ul>

	Need to explain how each nutrients plays a role and has an importance for performers/players in physical activity and sport	
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Topic 2 Sport Psychology	What you need to revise.	Not included but could be a 1 or 2 mark question.
2.1 Classification of skills	<p>1. Classification of skills</p> <ul style="list-style-type: none"> <li>• Open and closed (Environment)</li> <li>• Complex and simple (Difficulty)</li> <li>• High and Low Organisation (Can the skill be broken down in to smaller parts)</li> </ul> <p>Need to able to identify where skills will placed on the continuums and justify why.</p>	<ul style="list-style-type: none"> <li>• Types of practice</li> </ul>
2.2 The use of goal setting and SMART targets to improve and/or optimise performance	<p>1. Principles of SMART</p> <ul style="list-style-type: none"> <li>• Specific</li> <li>• Measurable</li> <li>• Achievable</li> <li>• Realistic</li> <li>• Time-Bound</li> </ul> <p>Need to be able to identify if a target includes the principles of SMART</p> <p>Need to explain/justify the value of each principle in improving or optimising performance.</p>	
2.3 Guidance and Feedback on performance	<p>1. Types of Feedback</p> <ul style="list-style-type: none"> <li>• Intrinsic (Within)</li> <li>• Extrinsic (External Source)</li> <li>• Concurrent (During)</li> <li>• Terminal (At the end)</li> </ul>	<ul style="list-style-type: none"> <li>• Types of Guidance</li> </ul>

Topic 3 Socio-cultural Influences	What you need to revise.	Not included but could be a 1 or 2 mark question.
3.1 Engagement patterns of different social groups in physical activity and sport	<p>1. Participation Rates in physical activity in sport and the impact on participation rates due to the following factors.</p> <ul style="list-style-type: none"> <li>• Gender</li> <li>• Age</li> <li>• Socio-economic group</li> <li>• Ethnicity</li> <li>• Disability</li> </ul> <p>Need to be able to state factors and explain how they impact participation and influence choice of activity/sport.</p>	
3.2 Commercialisation of physical activity and sport	<p>1. The advantages and disadvantages of commercialisation and the media for;</p> <ul style="list-style-type: none"> <li>• The sponsor</li> <li>• The player</li> <li>• The Spectator</li> <li>• The sport</li> </ul>	
3.3 Ethical Issues and socio-cultural issues in physical activity and sport	<p>1. The different types of sporting behaviour.</p> <ul style="list-style-type: none"> <li>• Sportsmanship</li> <li>• Gamesmanship</li> <li>• Deviancy</li> </ul> <p>Need to be able to explain the reasons for the behaviour and know the consequences of deviant behaviour.</p>	

Topic 4 Use of Data	Accurate interpretation of data	
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